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THE

MISCELLANEOUS DOCUMENTS

OF THE

HOUSE OF REPRESENTATIVES

FOR THE

SECOND SESSION OF THE FIFTIETH CONGRESS,

1888-'89.

IN EIGHTEEN VOLUMES.

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FROM THE

CONSULS OF THE UNITED STATES

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1889.

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FOREIGN WEIGHTS AND MEASURES, WITH UNITED STATES EQUIVALENTS.

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Denomination.	Where used.	United States equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Alexandria	7.6907 bushels.
Arratel or libra	Portugal	1.011 pounds avoirdupois.
Arroba	Portugal and Brazil	32.38 pounds.
Do	Spain and Buenos Ayres	25.36 pounds.
Do	Spain (wine)	4.26 gallons.
Artal	Morocco	1.12 pounds avoirdupois.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Candy	Bombay	560 pounds avoirdupois.
Do	Madras	500 pounds avoirdupois.
Cantar	Turkey	124.7036 pounds avoirdupois.
Catty	China	1.333 pounds avoirdupois.
Do	Japan	1.32 pounds.
Do	Java, Siam, Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centner	Bremen	127.5 pounds.
Do	Brunswick	117.5 pounds.
Do	Darmstadt and Zollverein	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Vienna	123.5 pounds.
Cuadra	Argentine	4.2 acres.
Fanega	Mexico	1.54728 bushels.
Do	Peru	140 Castilian pounds.
Feddan	Egypt	1.03 acres.
Gramme	Metric	15.432 grains avoirdupois.
Hectoliter	do	26.417 quarts.
Kilogram, or kilo	do	2.2046 pounds avoirdupois
Kilometer	do	0.621376 miles.
Koku	Japan	5.13 bushels.
Last	Belgium and Holland (dry)	85.134 bushels.
Do	England, for dry malt	82.52 bushels.
Do	Prussia	112.29 bushels.
Libra	Castilian	7100. grains troy.
Do	Chili	1.014 pounds avoirdupois.
Liter	Metric	1.0267 quarts.
Livre	Guiana	1.0791 pounds avoirdupois.
Maund	Bengal	82.285 pounds avoirdupois.
Do	Bombay	28 pounds avoirdupois.
Do	Madras	25 pounds avoirdupois.
Do	Persia	27.32 pounds avoirdupois.
Meter	Metric	39.37 inches.
Do	Metric (cubic)	1.308 cubic yards.
Do	Metric (square)	1550.0 square inches.
Oka	Egypt	2.7235 pounds avoirdupois.
Do	Hungary	3.0817 pounds avoirdupois.
Do	Turkey	2.83418 pounds avoirdupois.
Picul	Borneo and Celebes	135.64 pounds.
Do	China and Sumatra	133⅓ pounds.
Do	Japan	130 pounds.
Do	Java (Batavia)	135.10 pounds.
Do	Hemp of Manila, Philippine Islands	139.45 pounds.
Do	Sugar of Manila, Philippine Islands	140 pounds.
Pie	Argentine Republic	0.9478 feet.
Do	Castilian	0 91407 feet.
Pic	Egypt	21¼ inches.
Pik	Turkey	27.9 inches.
Quarter	England	8.252 bushels.

FOREIGN WEIGHTS AND MEASURES—Continued.

Denomination.	Where used.	United States equivalent.
Quintal	Brazil	130.06 pounds avoirdupois.
Do	Buenos Ayres	101.42 pounds avoirdupois.
Do	Castille, Chili, Mexico, Peru	101.61 pounds avoirdupois.
Do	Metric	220.47 pounds.
Tael	Cochin-China	590.75 grains troy.
Tan	Japan	0.25 acres.
Tonde (ton)	Denmark	3.94783 bushels.
Vara	Castilian	0.914117 yard.
Do	Curacoa, Cuba, and Peru	33.375 inches.

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VALUES OF FOREIGN COINS.

As adopted by the United States Treasury Department January 1, 1889.

Country.	Monetary unit.	Par of exchange or equivalent in terms of U.S. gold dollar.
Argentine Republic	Peso	$0.96,5
Austria	Florin	.33,6
Belgium	Franc	.19,3
Bolivia	Boliviano	.68
Brazil	Milreis of 1,000 reis	.54,6
British possessions in North America	Dollar	1.00
Chili	Peso	.91,2
China	Haikwan tael	1.20
Cuba	Peso	.92,6
Denmark	Crown	.26,8
Ecuador	Sucre	.68
Egypt	Pound (100 piasters)	4.94,3
France	Franc	.19,3
German Empire	Mark	.23,8
Great Britain	Pound sterling	4.86,6½
Greece	Drachma	.19,3
Guatemala	Peso	.68
Hayti	Gourde	.96,5
Honduras	Peso	.68
India	Rupee of 16 annas	.32,3
Italy	Lira	.19,3
Japan	Yen { Gold	.99,7
	Yen { Silver	.73,4
Liberia	Dollar	1.00
Mexico	Dollar (silver)	.73,9
Netherlands	Florin	.40,2
Nicaragua	Peso	.68
Norway	Crown	.26,8
Peru	Sol	.68
Portugal	Milreis of 1,000 reis	1.08
Russia	Ruble of 100 copecks	.54,4
Spain	Peseta of 100 centimes	.19,3
Sweden	Crown	.26,8
Switzerland	Franc	.19,3
Tonquin	Piaster	.72
Tripoli	Mahbud of 20 piasters	.61,4
Turkey	Piaster	.04,4
United States of Colombia	Peso	.68
Venezuela	Bolivar	.13,6

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

N. S.—No. 1.—JANUARY, 1889.

THE HITTITE REMAINS.

In continuation of a previous despatch, I have the honor to bring to the notice of your Department some further intelligence from Mr. Henry Marden, United States Consular Agent at Marash, upon the subject of "Hittite remains in Marash and vicinity, Central Turkey."

In the year 1879 the mounds of Jerablous, on the Euphrates, six hours below Biridjik, were identified by Mr. Henderson, the English Consul at Aleppo, as the site of "Carchemish," the capital of the ancient but long-lost nation of the Hittites. Soon afterwards the American missionaries visited those mines and examined them with deep interest, and as they toured through their mission fields from time to time, they scrutinized every fragment of chiseled stone in search of Hittite sculptures and inscriptions.

Two lions of black basalt were found on the top of the wall of the old Genoese Castle, in the city of Marash, guarding the entrance. Their workmanship was so unlike the other ornamentations of the wall, that it was but natural to infer that they were made for some other purpose.

One of them was covered with hieroglyphics in the same character as those at Carchemish. They were found also to be identical with the mysterious writing on the Hamath blocks in the museum at Constantinople. The inscriptions are in raised characters, arranged in horizontal bands, 4 inches wide, extending from left to right and then right to left, with a raised line separating the bands from each other.

Among the characters appear the heads of men, oxen, goats, hares, and other animals, human hands, feet, and faces with rings in the lips, and many other similar figures and others still, which, in their present form, do not seem to represent any natural object. The smaller characters are written one above another between the lines, but the larger forms extend nearly from line to line.

The faces and feet on the first band all look toward the right, but on the second they look toward the left and continue alternately in the same order, indicating the direction in which the writing must be read. These inscriptions bear very little resemblance to any known system of writing, and no attempt to decipher their meaning has thus far been successful.

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Near the base of the fort was found the colossal trunk of a human statue or an idol, which must have been nearly 8 feet in height. The head and both feet have been broken off. This large trunk now serves as a step in the stairway of a mosque.

On a grave in the Christian cemetery was found a slab of black basalt 4 feet in length, 2 in width, and 1 in thickness. The upper surface only had been trimmed, and contained in bas-relief a human figure dressed in a long tunic fastened by a girdle. In the hand was a wand or staff. The beard resembled that of the Assyrian sculptures, but the hair was long and gathered at the back of the neck in a peculiar roll turned upward. The shoes were painted and turned up at the toes. These peculiarities are characteristic of nearly all Hittite sculptures.

This slab also contained an inscription covering its entire face, the bands of hieroglyphics extending back and forth across the human figure, but the characters differ from others in being incised instead of in relief. They were, however, much defaced. Fifteen to twenty other slabs of the same general character have been discovered in Marash. One is the door-step of a minaret, another is in the pavement of a door-yard, another still, containing the figure of part of a chariot, serves as a horse-block at a street door. One heavy slab was found lying on its face 4 feet under ground in a vineyard, on which was represented two human figures sitting in chairs on either side of a cross-legged table, on which were plates of bread and fowl. These slabs are all of black basalt, having only one face of the stone trimmed; the figures are in bas-relief and the inscriptions all in the same characters, though there is variety of form corresponding to the hand-writing of different men or possibly of different times.

The lion on the fort has recently been transferred to the Royal Museum, Constantinople, and two or three small slabs have been carried away by European travelers. Others remain where they were discovered.

The lions on the fort, the trunk of the idol, and several other blocks near its base suggest that the natural mound on which the fort was built may once have been crowned with a Hittite palace or temple, and a block found on the side of the mound—perhaps a piece of an altar containing on two sides a beautifully cut inscription, but charred and cracked by heat—bears silent testimony to the method by which the building was destroyed. There seems abundant evidence that Marash was an important Hittite city, and many relics of its ancient buildings doubtless lie buried under the present streets and walls. Several interesting Hittite slabs have been discovered in the Albustan plain, 80 miles north of Marash; also a fine inscription near Room Kala, 60 miles east on the Euphrates.

Other blocks with the peculiar chiseling of the Hittites have been found in different places on the plains from 20 to 50 miles south of Marash.

It is well known that the plains of Central Turkey are scattered over with mysterious mounds of earth. They are of different sizes, but generally covering from 2 to 4 acres and are 50 to 75 feet in height, with a level acre on the summit. They are seen only on the plains, in all cases several miles from each other, and in nearly every instance close by a fountain of water. Some suppose they were watch-towers, others that they supplied the place of a fort, the people gathering on the summit to defend themselves from the attacks of horsemen who could not ascend the steep sides; still others hold that they are monuments over the tombs of buried kings, while there are not wanting those who think that they are merely natural formations; but the fragments of pottery and the alluvial soil that compose them prove their human origin.

In modern times a rude Turkish village often appears at the base and part of the way up the side of a mound; in other cases the whole mound is covered with a vineyard or a wheat field, or its steep sides are perforated with the dens of foxes and jackals.

No light is to be found concerning them in written history except in the Assyrian department of the British Museum, where, upon an immense block of stone, the representation of a multitude of men actually engaged in building such a mound may be seen. Some of these mounds, which are very regular, may have been built for a special purpose now uncertain, but others, irregular in form and larger in area, must have been formed by the debris of mud walls and roofs.

One of this latter class of mounds on the plain near the eastern base of the Amanus Mountains, about 50 miles south of Marash, has attracted the attention of the American missionaries for some years, and at their suggestion several travelers have visited it. The little Turkish village of Zenjirli is built on the side of a mound.

The special interest connected with it was a dozen slabs of black basalt 4 feet high and 2 feet square, at the ends forming a reëntrant angle at one edge of the mound near the base and apparently extending farther in towards the center to complete the basement walls of a building. On the face of each block were Hittite bas-reliefs.

The attention of American antiquarians was called to this mound, and it was hoped that American enterprise would undertake its exploration. The past winter a party of Germans, under the patronage of their Government, have commenced the work of excavation, and one hundred laborers in a few weeks' time laid bare a large number of blocks forming, as had been supposed, the basement of a Hittite palace. They were nearly all *in situ*, resting upon rude foundations of masonry. A line of blocks extends along the entire front, then opens mid-way into an entrance hall, which soon widens into a court about 40 feet square. A narrow hall connects this court with another large court farther within, which has been uncovered only in part, but seems to be

several rods square. These halls and courts are lined by a single row of basalt blocks, each standing on end, and nearly every block contains on its inner surface a Hittite sculpture.

At one place is a hunting scene continued along a dozen blocks. The men are armed with daggers, spears, and the bow and arrow. Deer, rabbits, and birds represent a variety of game. At the entrance to the main court on either side are the bas-relief sculptures of an immense lion looking toward the outer door and behind each lion stands a heavily-armed soldier. The superstructure, resting upon these Hittite blocks, must have been made of sun-dried brick and perhaps in part of wood. The stones bear evidence that the buildings above them were burned. The pile of earth that forms the mound must be the débris of mud roofs and walls from Hittite palaces to the peasant hovels of modern times.

No Hittite hieroglyphics have yet been discovered, but the most remarkable "find" is the colossal statue of Sardanapalus, King of Nineveh, eighth century, B. C., standing on a pedestal in the smaller court of the palace. The workmanship is very fine. The face speaks like the finest Grecian statues. The statue had been thrown down and broken, but the fragments are all there and the whole figure can easily be restored. On this statue were several square yards of Assyrian inscription in cuneiform hieroglyphics, from which the name was determined.

But how this statue of an Assyrian king came to be placed in a Hittite palace is not easily accounted for. It is presumed that when Sardanapalus made his expedition through Asia Minor he conquered this Hittite city and erected his own statue in the center of the palace, carefully preserving intact all the productions of Hittite art.

Several shafts have been sunk in different parts of the mound, but thus far no other important results have been reached. A few feet below the surface in various places were found the rude foundations of mediæval and Roman peasant huts with stone hand-mills, mortars, jars, and other relics of those periods. One shaft reaching to the level of the plain disclosed a colossal image of an animal designed for a lion, but its rude workmanship belongs to an early period in the art of sculpture. There are traces also of a wall and moat a few rods distant inclosing the mound. Opposite the entrance to the palace a dozen sculptured blocks have been uncovered. They mark the gate-way in the city wall.

The Germans propose to continue their excavations three years and turn over with the spade the entire mound.

The great desideratum in Hittite discoveries is a bi-lingual inscription to be used as a key to interpret the mysterious hieroglyphics. Nothing of the kind has yet appeared, except a very brief inscription on a silver boss, which a few years ago was offered for sale in Constantinople and fortunately copied, but the original has mysteriously disappeared. The languages were Hittite and Assyrian cuneiform, giving the name of a king and of his country, but both were unknown to history.

The Germans have also discovered in a Turkish cemetery near Zeujirli a human statue with nearly a square yard of inscription in what seems to be Phenician characters.

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Hittite remains have been discovered at different points in Central and Southern Asia Minor extending as far west as Smyrna and east to the Euphrates. Bible history also speaks of these people at Hebron, in Southern Palestine. They are not only many times mentioned in the Assyrian inscriptions exhumed from the mounds of Koyounjuk and Khorsabad at Nineveh, but also the mightiest of the Pharaohs of Egypt, when to glorify themselves they delineated their personal achievements upon the lofty pylous at the entrances of their temples, could find no prouder record of their valor than the representations of their victories over the Hittites. Rameses II, at Karnak and at the Rameseum, thus not only records his own brilliant victories, but undesignedly bears testimony to the strength and courage of those whom he calls "the despised Hittites," whose power he overcame with so much difficulty. It is an interesting fact that the treaty of peace between the Hittites and the Egyptians is engraved upon a stone tablet in the walls of Karnak, and is the first treaty of peace on record. The Hittites were known at Jerusalem, Thebes, and Nineveh for the period of one thousand years.

This mysterious nation has now been lost to history for twenty-five hundred years, and it is very remarkable that all traces of its existence, except the few brief references in the Bible, are inscribed on tablets of stone. These people chiseled their bas-reliefs and hieroglyphics upon black basalt, even the most durable stone in the land, and in the destruction of the temples and palaces these precious slabs were buried deep under mounds of earth and kept for distant ages more safely than they could have been in any museum or library. The enemy did not take in all this when he threw his firebrand into the palace halls.

It is not surprising that these mementoes of such a lost nation, as they come to light one by one, should awaken a deep interest in the civilized world.

The experiment at Zenjirli suggests possibilities of the deepest moment. Hundreds of similar mounds in Southern Asia Minor and in Mesopotamia are waiting for the spade to reveal their treasures. They may not all contain the ruins of palaces, temples, stone libraries, or works of art, but it is a remarkable fact that the first mound opened in Central Turkey contained a genuine palace, a statue of a king of Nineveh with an extensive Assyrian inscription, and also nearly or quite as many works of Hittite art as all others that have hitherto been discovered.

There is here surely a wide and intensely interesting field for investigation. The American missionaries, the only Americans on the ground, have neither the time nor the means to prosecute such enterprises, but it is earnestly desired that the American people assume a share in the search for the records of this long-lost nation. — BEIRUT, *September 21, 1888.*

ERHARD BISSINGER,
Consul.

THE WHEAT TARIFF CONTROVERSY IN FRANCE.

The scanty wheat crop of this year in France, its generally inferior quality, the recent notable rise in the value of breadstuffs, and the question what the Government should do to mitigate the effects of the unfortunate harvests, continue to form the foremost commercial and political topic in this country.

When the large deficiency became generally known and the prices of wheat and flour began to rise, there arose an immediate and persistent demand that the administration should exercise the privilege granted by the law of March, 1887, and either abolish or greatly reduce the import duty of 5 francs per quintal on wheat, such action to be submitted to the assembly for ratification on its meeting in October. This demand was sustained by three classes of French citizens. First, the non-protectionists, who are opposed upon principle to import duties on food and raw materials and maintain that they have been the folly and curse of France; secondly, the commercial men of the larger cities and sea-ports, whose business would be enhanced by heavy importations and dealings in foreign grains, and finally by the great industrial class, the wage-earners, who foresaw a year of scarce and expensive bread. On part of the latter class the manifestation took the form of mass-meetings at St. Denis, St. Ouen, and other points at which the proceedings were more or less loud and revolutionary.

In support of this demand it was insisted that the deficiency in this year's wheat crop would entail importations of wheat to the amount of 30,000,000 to 35,000,000 hectoliters, upon which there would have to be paid under the present law duties amounting to 120,000,000 or 140,000,000 francs, a sum beyond the estimates of the Government and the power of the laboring classes to pay.

The project of abolishing the duty was, on the other hand, opposed with equal ardor; first, by the theoretical protectionists, who dread to see any backward step taken in the system of high-tariff legislation; secondly, by nearly the whole agricultural population, who now for the first time in several years see a prospect of selling their surplus wheat at home for prices that will yield a profit above the cost of cultivation, and finally by the millers, a large and powerful class, who enjoy the benefit of a drawback of 8 francs per 100 kilograms on exported flour and who have already heavy stocks on hand or have made large purchases of wheat for autumn and winter delivery at prices which include the present duty.

Between these two opposing parties and their organs the real extent and and quality of the present year's wheat crop have been so disputed and obscured by extravagant and diverse statements that no one seems able to tell more nearly than a fortnight ago what the real facts are. On the one hand, the minister of agriculture, without pretending to give official returns, estimates the home crop at from 90,000,000 to 95,000,000 hectoliters. The convention of millers which met in Paris on the 20th of September heard special reports from all the districts, the tenor of which was to show a large

deficiency and generally poor quality in all except the two southern districts. Much of the wheat so far offered is too wet and soft to be profitably ground, and in some regions half the wheat harvested this year is in such condition that it will not keep throughout the winter.

The Bulletin des Halles, organ of the produce exchange at Paris, has just published an estimate based upon special, though not official, reports from all the departments of France, in which it gives the following comparison between the acreage, yield per acre, and total crop of this season and last year:

Acreage.

	Acres.
1887	16,828,145
1888	17,219,049
Excess	390,904

Average per acre.

	Bushels.
1887	18.5
1888	14.7
Decrease	3.9

Total crop.

	Hectoliters.
1887	117,732,910
1888	89,274,828
Deficit	28,458,082

Reducing this deficit to bushels, it would thus appear that the whole crop of this year falls 80,824,952 bushels below that of last season, and on the basis of a total yearly consumption of 120,000,000 hectoliters, there is a total net deficit of 87,259,488 bushels to be supplied by importation.

The best commercial opinion, the judgment of the leading grain merchants and millers in the large cities, many of whom have special means of obtaining correct information, re-asserts firmly the estimates stated in the latest report from this consulate (August 27), viz: That, taking into account the inferior quality of this year's wheat crop in France, its flour producing value will not exceed 80,000,000 or at most 85,000,000 hectoliters and that, duty or no duty, this country will have to import from 90,000,000 to 100,000,000 bushels of foreign wheat.

It has been found by careful and repeated observations that high prices of breadstuffs in this country and England do not diminish but rather increase the consumption of bread. The reason given for this is that when food is expensive, the poor classes economize first, not on their principal article of diet, but upon the most costly ones, which are meat and groceries.

For the reasons already stated, the millers' convention at Paris on the 20th of September earnestly protested against any interference with the present wheat duty. The Government was only too glad to be relieved of the responsibility of taking a step which would awaken controversy and seriously trench

upon its revenues, and decided to take no action, so that the whole question is now referred to the national assembly which meets in October. The agricultural deputies and the protectionists are in a majority, and, judging from what they have hitherto done, it is probable that the present duty on wheat and flour will be retained unchanged.

The aggregate effect of all these circumstances upon the wheat market of Marseilles will be indicated by the following comparison of values of the leading foreign grades which are imported here to-day and on the same date one year ago. The prices quoted are of actual sales for immediate delivery, futures being proportionately higher:

	Sept. 24, 1887.	Sept. 24, 1888.
	Francs per 100 kilos.	*Per bushel.*
Nicolaieff, spring	17.00	19.25 = $1.02½
Nicolaieff, winter	17.00	19.25 = 1.02½
Azoff, winter	17.00	19.25 = 1.02½
Danube, red winter	16.25	18.25 = 0.98
Bombay, white superior	18.00	21.50 = 1.15
Australian, white	20.00	23.25 = 1.23
Algerian, white	18.25	21.87½ = 1.16
American, red winter No. 2	18.00	22.37½ = 1.19

This represents an average all-round advance of about 15 cents per bushel, but it will be noticed that the rise in the price of American red winter is greater than in that of any other quality, for the reason already stated in previous reports, that our red winter wheat supplies the quality of flour most preferred in this region and for export to Spain.

The questions upon which wheat speculation in this country is now based are, therefore, two: First, will the assembly at its coming session abolish or reduce the present duty of 26⅔ cents per bushel on imported wheat? and, secondly, does the present advance of 15 cents per bushel on the prices of one year ago fully represent the actual condition of wheat supply and demand throughout the world? In other words, has the rise reached its limit or will prices continue to advance as the precise figures of the deficit in western Europe and the surplus in Russia, India, and America are ascertained?

A great deal is being very earnestly said and printed on either side of both these questions, but the strongest indications are that the present duty will be rigidly maintained and that since France alone will need nearly as much foreign wheat as the United States can spare for export, it is difficult to see how breadstuffs can be cheaper than now until a new crop has been grown and harvested. — MARSEILLES, *September 25, 1888.*

FRANK H. MASON,
Consul.

THE NICARAGUA CANAL CONSTRUCTION COMPANY.

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Referring to previous correspondence relating to the movements of the civil engineers employed on the line of the proposed ship-canal across this part of Central America, I have to report that Civil Engineer Le Baron and two assistant engineers have just arrived from Camp Carazo, and are making up a working party to make the measurements and soundings about the harbor that are necessary to locate the site for the wharf mentioned in dispatch No. 183, dated the 14th instant.

The wharf, as proposed to be constructed, is to serve as a wharf for the use of the construction company, but to be built at such a point and of such material in part that much of that structure may be utilized in the construction of the breakwater, which will be an important feature of any plan for the improvement of the harbor of San Juan. While the superstructure of the wharf will be composed of wood the foundation will be built of solid stonework.

It is believed that there is a coral reef or bank that has been forming, and in a southwesterly direction in the sea-front of the harbor. The exact location of the reef has never been determined, as it is not visible through the water. And I believe that on only one of the charts of report—a survey by an expedition from the United States—the existence of a coral reef is noted, although such noting does not appear on any subsequent chart. From statements made by commanders of the Royal Mail Steam-ship Company and by the turtle strikers, who take turtle on this part of the coast, I find that they believe that there is such a coral reef forming at some point in the sea-coast between Harbor Head and Punta Castilla.

One object of the party under Mr. Le Baron is to find the reef and decide, if it is so located and of such bulk, that it may be advisable to locate and construct the breakwater upon or over it.

I think that Mr. Le Baron is also to make some preparation for the erection of barracks for the laborers who may be employed in the work about the harbor, which may begin by the 1st of December. I know from conversation with Mr. Le Baron that he expects to bring his family to reside here at this port at the end of the year, or as soon as the quarantine regulations of Florida will permit their leaving that part of the country. Mr. Le Baron is a resident of Jacksonville, which city his family were compelled to leave by the yellow fever epidemic. He is English and has resided in Florida, and in that State has been doing some valuable work as civil engineer; and I am informed that the company that is doing the present work esteem Mr. Le Baron as one of the most competent and useful civil engineers in their employ. — SAN JUAN DEL NORTE, NICARAGUA, *September 30, 1888.*

WM. A. BROWN,
Consul.

MANGANESE MINES IN SANTIAGO DE CUBA.

Before giving you a report on the manganese mines at present being worked and from which 1,300 tons of manganese ore have been shipped to the United States, I believe it well, in order to make my report clearer, to give you an outline of the mining laws here and then a description of the manganese deposits discovered in this province. With this object I submit a plan showing the area and extension of the manganese deposits so far discovered and "denounced." According to Spanish law the person discovering a mine, no matter on what land it is, whether government or private property, submits to the provincial Government a plan of the probable extension of the mine. The Government then, if all is in conformity with details and fulfilling all the requirements of the law, grants a title to the mine. This title, however, does not take the surface property away from the owner. Later on, when the mines are to be worked, if no terms for the sale of the surface land can be agreed upon between the two parties, the Government appraises its land, and at this appraised value the owner of the surface land is obliged to sell to the owner of the mine. This fact has been little understood by Americans coming here to look for manganese mine investments. There is not one manganese mine for sale which lies in the land of the owner of the mines. The work on the mines for sale at present has been very superficial and mostly on a very small scale, and as before working the mines the surface land has to be acquired, for which the owners of the mines as a general thing have not sufficient means, the person desiring to work a mine on a royalty must advance money before taking out any ore. Owing to this fact so few of these rich mines have been worked by American capital. Nearly all the mines are offered for sale at a royalty per ton with conditions of taking out certain quantities of ore. Land of the mines, so far as discovered, is worth on the average from $3 to $6 per acre.

The Spanish Government, under date of June 30, 1887, by royal decree, has ordered that manganese mines are exempt from all manner of taxes for twenty years. All material, machinery, tools, etc., to be used in the exploitation of manganese ore are free from import duty. Railroad material, machinery, coal, etc., for mining purposes are all free from import duty. The mining railroad is free from taxes for ninety-nine years. So you see the Government here does everything in its power to further the mining industries of this province. One serious drawback which so far has hindered the rapid development of this industry is the want of transporting facilities. The mines at present worked are some distance from the railroad, and in the rainy season it is extremely difficult for them to get their ore down to the railroads in carts and on mules. These mines are divided into ten groups. Seven of these mines can be reached by and are from 1 to 20 kilometers from the Sabanillo and Marote Railroad. The other three groups are near the line of the old Cobre Railroad, destroyed in the first revolution, about 1869.

The Sabanillo and Marote Railroad is a passenger railroad 33 kilometers in length. This railroad carries considerable freight, consisting of sugar, mahogany logs, boards, and other products of the interior. The road-bed is fair and is gradually being laid with new English rails. The rolling stock is very poor and not in the condition to carry ore in large quantities. The terminal facilities in the city are good, but, of course, in the event of large shipments would have to be improved, and a proper dock would have to be built. We have here a dredging machine which could soon dredge sufficient to form dockage for large steamers. Some of the groups of mines are in a direct line with this railroad and could be very easily worked. No doubt arrangements could be made to run ore cars over the road. The three mines on the line of the Cobre Railroad are of large dimensions and offer the advantage of a road-bed which could be restored at comparatively little expense, and also facilities for shipping the ore at Punta Sal, opposite this city. In the plan I submit I have given the names of the different groups and their dimensions.

Group No. 1, Hatillo.—This is composed of one mine, the Cecilia, 100 hectares in size. It is situated 1 kilometer from the Cobre Railroad, above described, and 3 kilometers from Punta Sal, the point where the ore could be shipped. The mine, owing to its close proximity to this city and the good quality and apparent large quantity of ore, is well thought of. Water is near by.

Group No. 2, called Boniato.—Composed of five mines, in all comprising 130 hectares; is in the immediate vicinity of the Sabanillo and Marote Railroad, and commences at the station of Boniato, 8 kilometers from this city. Work on these mines has been done on a small scale. Owing to their proximity to the railroad the cost of delivery of ore to the cars is very small. The mine of the group furthest away from the railroad can be reached by a level road 3 kilometers long.

Group No. 3, Dos Bocas and Cristo.—Consists of ten mines, in all 338 hectares, and is traversed by the Sabanillo and Marote Railroad, 1 to 5 kilometers further up than Boniato. Deposits of ore can be seen from 200 to 1,000 meters from the track. Samples have given about 54 per cent. metallic manganese.

Group No. 4, Quemado, etc.—Consists of twenty-three mines and is distant from Cristo 17 kilometers, from this city on an average 3 kilometers. The highroad connecting station with the mines offers no serious topographical obstacles, but, like nearly all Cuban roads, is almost impassable to carts and vehicles during the rainy seasons. Of this group the mines Ysabelita and Boston are the ones from which all but about 100 tons of the manganese so far exported has been taken. To these mines I will refer later.

Group No. 5, Ponusso.—Composed of eight mines, comprising 365 hectares. Its distance is about 15 to 20 kilometers from the station of Cristo, and would, if worked on a large scale, necessitate the building of a railroad. As the country in which this group lies is highly cultivated, being

occupied by sugar and coffee estates and forests containing mahogany, a railroad connecting with the Sabanillo and Marote line would, no doubt, be a paying investment, as, apart from the mineral carried, it would have a large carrying trade of the products of this country. The idea is to build a railroad to Guantanamo, which railroad would pass these mines and open up a fertile country, which at present is uncultivated for lack of transporting facilities. The railroad, 75 miles in length, would do an immense passenger and freight business, which is at present monopolized by a line of steamers between here and Guantanamo, and would be benefited besides by the intermediate traffic. The Ponusso mines show excellent mineral, I have been told, and in large quantities.

Group No. 6, Montompolo.—Composed of three mines and, comprising in all 117 hectares, is situated about 11 kilometers from the station of Moron, which station is at a distance of 19 kilometers from this city by the Sabanillo and Marote Railroad. This group is in a mountainous country with rivers running through it. Analysis of the ore has given over 50 per cent. of metallic manganese.

Group No. 7, Canto Abajo.—Composed of five mines, comprising 315 hectares, is about 14 kilometers from San Luis (33 kilometers from this city), the terminus of the railroad.

Group No. 8, Margarejo.—Composed of three mines, comprising 124 hectares, and is situated 1 kilometer from the terminus of the destroyed Cobre Railroad, at Cobre, 15 kilometers from here.

Group No. 9, Cerca Piedra.—Composed of one mine, comprising 56 hectares, is situated 3 kilometers from this city in a northwesterly direction by the high road.

Group No. 10, Botijo.—Composed of one mine, comprising 60 hectares, is situated 14 kilometers from here, is about the same direction as No. 9.

Having to a great extent been compelled to gather the information regarding these mines from parties interested in them, I can not vouch for entire correctness so far as richness and quantity of ore is concerned. Some of the mines I have visited myself; but, as naturally the investigations so far conducted on mines not worked have been primitive and superficial in the extreme, such work can not really show the actual worth of these mines which require study and investigation.

Manganese here is found as a purely water formation in tertiary strata, or at all events with tertiary strata above it and associated with jasper and crystalline metamorphic rock below. It seems that large deposits are concentrated in certain districts, as proved by the ten groups already described. There has been more manganese discovered, but owing to the large distances from the sea-board, and absolutely no transporting facilities existing, they have not been "denounced," as it is impracticable to work them. What this country needs, and especially this province, is a railroad from here to Guantanamo, and another through the interior of the island, to develop its vast mineral wealth and agricultural resources.

By examining the plan you will find in the Tuemado group the mines Ysabelita and Boston. The two are the mines from which the 1,298.311 tons (1,000 kilograms) so far shipped to the United States have been taken. The company working these mines is called the Cuba Manganese Company, New York, incorporated under the laws of the State of New York and recognized by the Spanish Government. The mines so far have only been worked to demonstrate the feasibility of exporting from them large quantities of ore. I have been told by an officer of the company that already $40,000 have been expended in royalties, wages, freight, etc. For this amount the company has, as stated above, exported 1,298.311 tons, and has mined 6,000 tons more. Having no machinery for washing the ore, although, like almost all the manganese mines, water is in abundance near by, no doubt accounts for the small quantity exported. Then the question of transporting the ore has not been a question of great cost, but also owing to the impassability of the road in the rainy season, almost an impossibility. Transporting the ore in cars to the railroad and in flat cars to this city, and then handling it to put in lighters and load on board the steamers has necessitated putting the ore in bags weighing about 140 pounds each. From the "Boletin Comercial," in its issue of August 1, I take a fair estimate of the present cost of the ore put in Philadelphia. Price per ton in Spanish gold:

Royalty paid to owners of the mine	$1.10
Cartage, 2 miles, from mine to railroad	1.25
Freight, Cristo station to Santiago de Cuba	1.27½
Bagging	3.25
Lighterage and labor in Santiago de Cuba	.60
Freight to Philadelphia and discharging there	3.68½
Mining ore, including labor, salaries, and expenses at mines	4.65
Actual cost of 1 ton of ore	15.81

This at $1.10 would make $14.23 in United States currency. This is an enormous expense, and the company, now that the ore has been proved to exist in large quantities, proposes to reduce it to half by either making a rope tram-way from the mines to Cristo station or else building a branch railroad to connect with the Sabanillo and Marote Railroad, and avail itself of an existing Spanish law and compel the Sabanillo and Marote Railroad Company to allow the company's ore cars to pass over their track. Then the company proposes to erect a dock of its own where its steamers can load the ore. The mines are worked by open cuttings or drifts on the sides of the hill. The analysis of the ore so far shipped has shown an average of—

Silica	.810
Iron	.300
Metallic manganese	56.880
Phosphorus	.030
Sulphur	.003
Moisture	2.000
Total	60.023

Let us hope that this enterprise, which so far has only been a trial, will meet with the success it merits. It has all chances in its favor. There are mines enough in the vicinity of the Ysabelita and Boston mines to warrant the outlay of capital to work the mines in a proper and economical manner, and this capital once employed will yield good results. The Spanish Government, not alone through its laws, but by taking an interest in the enterprise, favors and protects the company.—SANTIAGO DE CUBA, *October 9, 1888.*

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OTTO E. REIMER,
Consul.

NAVIGATION AND PORT DUES OF HAVANA.

[Transmitted by Consul-General Williams.]

First. * * * A Spanish vessel arriving and clearing with cargo will pay for each ton of admeasurement, according to register, $1.35.

Second. * * * A Spanish vessel arriving with cargo and leaving in ballast will pay $1.30.

Third. * * * A Spanish vessel arriving in ballast and leaving with cargo, $1.

Fourth. * * * Spanish vessels arriving with coal in quantity equal to or exceeding their registered tonnage, if they bring other goods, nothing.

Spanish vessels importing coal as the only cargo, but in quantity less than their registered tonnage, will pay for each ton occupied by coal, nothing, and for every ton not so occupied, 62 cents.

Spanish vessels importing coal in less quantity than their regular tonnage, and besides bring other goods, in whatever quantity, will pay for every ton occupied by coal 73 cents, and for every other ton, $1.35.

Fifth. * * * A Spanish vessel arriving in ballast and leaving with a full cargo of molasses will pay 37 cents.

Sixth. * * * A Spanish vessel arriving in ballast and leaving with products of the country will pay $1 per ton, and for every ton empty, 5 cents.

Seventh. * * * A Spanish vessel arriving and leaving in ballast, 5 cents per ton.

Eighth. * * * A Spanish vessel putting in for orders or in distress, 5 cents per ton.

Ninth. Steam-ships which make periodical trips to Cuban ports, whatever may be the flag or from any port, will be exempt from payment of all dues, provided they do not import or export more than six tons of cargo, and will be cleared with preference to others when carrying the mails.

Tenth. A Spanish steam-ship, under the foregoing circumstance, importing or exporting more than six tons, will pay per ton 62½ cents.

Eleventh. Spanish mail steam-ships will pay according to the special contracts they may have with the Government.

Twelfth. Whenever the steam-ships that may arrive are not comprised in the ninth, tenth, and eleventh cases, they will pay according to their flag and port whence from, deducting from total tonnage those occupied by machinery and bunkers.

MADRID, *March 12, 1867.*—Approved by H. M.

CASTRO.

RECIPROCITY WITH FOREIGN NATIONS FOR THE PAYMENT OF TONNAGE AND PORT DUES.

a. Royal decree of June 4, 1868, establishing reciprocity of dues for the payment of tonnage or navigation and port dues in the islands of Cuba, Porto Rico, and the Philippines, with respect to the vessels of all nations, which in their respective territories or colonial possessions grant the same benefit to vessels of the Spanish merchant service.

* * * * * * *

ARTICLE 1. The vessels of all nations, which grant a similar benefit within their respective territories and colonial possessions to Spanish merchant vessels, proceeding from the ports of Spain and adjacent islands, shall be equalized in the islands of Cuba, Porto Rico, and the Philippines with Spanish vessels in regard to the exaction of tonnage and port dues.

* * * * * * *

MADRID, *June 4, 1868*.

d. Nations the vessels of which have been successively equalized with Spanish vessels for the payment of navigation and port dues: France, Germany, Great Britain and all her colonies, Sweden and Norway, Holland and her colonies, Denmark, United States of America, Belgium, Austria, Hungary, Italy, Greece, Russia and Finland, and Mexico.

d. Regulations of August 28, 1882, modified on 10th May, 1883, in accordance with royal order of January 4, 1883, and finally amended by the intendancy-general of finance on October 16, 1883, in obedience to royal order of August 26 of that year:

* * * * * * *

ARTICLE 1. All Spanish vessels from Spain and her colonial possessions will pay upon arriving in this island 37½ cents for each ton of 1,000 kilograms of cargo discharged and 25 cents for each passenger landed, whatever may be the port for which the vessel afterwards leaves.

* * * * * * *

ART. 5. All steam-ships registered in Spain and engaged in periodical trips between the ports of this island and those of Spain and Porto Rico, with the exception of those lines which have a direct subvention, are exempt from the payment of this discharge tax (inward tonnage dues). To enjoy that benefit the duration of the regular trips shall not exceed twenty days from Havana to Spain and *vice versa*, and four days from Porto Rico, respectively; a regular trip being understood to be at least one a month, deducting on each trip the days employed in touching at other ports.

* * * * * * *

ART. 9. For the payment of outward tonnage dues and passenger fees, due observance will be had of the foregoing articles. Spanish vessels arriving from Spain and her colonial possessions will pay 25 cents for each ton of 1,000 kilograms of cargo, and the same amount for each passenger shipped, whatever may be the port to which the vessel is bound, as stated in article 1; being exempt from payment of dues on cargo when it leaves in ballast, but not from the passenger fees.

* * * * * * *

HAVANA, *October 16, 1883*.

CASTRO.

DECREE REDUCING DUTY ON WHEAT FLOUR IN PORTUGAL.

[Transmitted by Minister Lewis.]

SUPPLEMENT TO THE "DIARIO DO GOVERNO," NO. 241.—TREASURY DEPARTMENT.

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There having been manifested a considerable advance in the prices of wheat and flour in the great producing markets, and it being known that in this country the price of flour would be increased, the superior councils of agriculture and commerce have been consulted, and in consideration of what has been proposed to me by the ministers of state of the different departments, and employing the authority granted to the government by section 2, article 1, of the decree of July 19, of the current year, I see fit to decree that the duties on importation of wheat flour as fixed in No. 189 of the general customs tariff be reduced to 24 reis per kilogram.

The minister and secretary of state of the treasury department may so have it understood and make it be fulfilled.—PALACE, [LISBON] *October 19, 1888.*

THE KING.

MARIANNO CYRILLO DE CARVALHO.

CATTLE AND HOG RAISING IN GUATEMALA.

Nutritious grasses grow abundantly in nearly every portion of Guatemala. The regularly recurring rainy season, lasting from April to November, with a portion of each day of tropical sunshine, keeps the pastures perennially green and flourishing. During the so-called dry season, embraced within the months of November to March, inclusive, night dews are so heavy that the effect is virtually the same, so far as vegetation is concerned, as that of the rainy season. Hence, pastures on the mountains, valleys, and the neighborhoods of the Atlantic and Pacific coasts are good at all periods of the year, although on the latter they are richer and more luxuriant.

Cattle raising is, therefore, a profitable employment, and it is surprising that it is not more generally undertaken as an exclusive business. In connection with coffee and sugar plantations, beef and pork raising, as well as that of mules and horses for transportation purposes, become necessary adjuncts, and the sale of surplus stock is quite commonly indulged, but it does not seem to be entered into as a distinct business operation.

Native steers, one year old, can be purchased for $10 each in Guatemalan currency, that is to say, at the rate of about $7.50 in United States gold. Two-year-old steers can be bought for $15, and three-year-old for $20. These will sell, when fattened in the mountain pastures, at $32 to $35 per head, and when taken to the *portreros*, or enclosed pastures, near the coast, and put in charge of the herdsmen, who supply salt and take care of them at a cost of $5 per head for the season, will sell at the rate of $45 each on the hoof.

In the case of hogs, there is an extraordinary profit when raised with the view of producing lard, which sells just now in this market at 25 cents per pound, and for which there is a great demand for home consumption. There is no trouble in raising them, and a good breed, such as is known in the United States as the "grass breed," and whose principal food is the *zacate* of the country, will sell for $20 each when eighteen months old and $25 at two years old.—GUATEMALA, *September 19, 1888.*

JAMES R. HOSMER,
Consul-General.

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CERAMICS IN CATALONIA.

COMMON BRICKS.

Hand-molded bricks occupy beyond all dispute the most important place among the various industries comprised under the general denomination of ceramics, both on account of their numerous and important applications, as well as of the large number of laborers employed in their manufacture. The process is of the most rudimentary nature, both in the molding and the baking. The molding is done on a large uncovered brick floor, where there is the almost absolute certainty that a fall of rain will ruin and render useless the work of many days. The baking is performed in ovens constructed near by the molding floor, the intermittent system being used. There thus exist two factors which contribute to enhance uselessly the price of the article, but the laborers employed in this industry, oftentimes whole families, are as a rule accustomed to habits of such great sobriety that the current price of bricks thus manufactured is exceedingly low and competes with that of machine-made bricks, to which they are preferred in the greater number of buildings as being a better class of article on account of the baking being done with pine timber. The importance of this industry in Catalonia is large on account of the large exportation of the article to the Island of Cuba, where, however, special shapes are required. The price of the ordinary type is about $5.50 per M. The process of manufacture consists in a rough sieving of the clay, which, being kneaded, is placed in wooden or iron molds. This, as before mentioned, is done on an uncovered brick floor, where the molded bricks are left till entirely dry, being turned frequently to obtain this result as quickly as possible. Once dry, they are carried to the ovens, where they are piled in castle shapes with intermediate spaces sufficiently large for the free access of the flame to all parts of the pile, thus producing an even baking of the bricks on all the faces. Besides the common type of bricks others are occasionally made and baked in the same oven, especially those called Roman tiles. These, which formerly were used throughout the country, are now everywhere discarded on account of the cheapness and lighter weight of the mosaic tiles, which have taken their place. There are, however, still some factories of Roman tiles existing in the interior of Catalonia. It would be impossible to name any one factory of hand-made bricks as specially worthy of mention, as those of the same kind existing throughout Catalonia are almost innumerable.

MECHANICAL MOLDING.

This process of manufacturing bricks, on account of its greater perfection, should yield a superior article to the hand-made bricks, which, however, is not the case, owing to the method of baking, hard coal being used and the ovens so constructed that while the baking in some places is incomplete, in

others it is excessive. This last defect is also owing to the fact that the parts of the oven where the heat is more even and steady are improved for tiles and other products of a more delicate nature than bricks, which thus are placed at points where the baking is done in more unfavorable conditions. The manufacture in this case begins with the sieving of the clay, which, being sufficiently saturated with water, passes to the kneading troughs, and by means of an apparatus *ad hoc* the bricks are there shaped and left to dry, when, after baking, they are ready to be sold. The ovens in the more important factories work continuously. Among these factories, that of Messrs. Maciá & Co. is specially worthy of mention. These gentlemen use a steam-boiler and have two large continuous ovens (Hoffman system), besides numberless apparatus and machines for performing the sieving, kneading, and molding. This factory likewise makes a specialty of hollow bricks.

FLOOR BRICKS.

Not long ago the manufacture of floor bricks constituted a very important industry in Catalonia, and although now, on account of greater exactions of style and luxury, it has somewhat lost its ground, it still holds a high and honorable place among the Catalan industries. The bricks, which are 5½ inches square, are of two kinds, white and red. The clay used is of the highest quality. The red bricks, though not so fine-looking as those imported from Marseilles, are, nevertheless, of a very good class and made more economical than the French bricks. The current price is $7 per M. of first-class bricks. The kneading of the clay, which is done very carefully and completely, is performed by hand, as likewise the molding and cutting of the bricks into their definite shape. The bright red color is obtained by applying before cutting a bath of barbotina (worm-seed) to the bricks, selecting for the purpose a special kind of clay, very plastic, of a bright red color. The ovens of the intermittent system have two laboratories superposed. The factories where the floor bricks just described are made are very numerous in Catalonia, and many turn out excellent articles. Among the principal may be quoted the following: those of Messrs. Juan Pons, of Sans; Romero y Escofel, of Hospitalet, and Luis Maciá & Co., of Barcelona. The floor bricks which have acquired the most fame abroad are those manufactured at La Brisba, a small town near the city of Gerona, where the clay is of a specially excellent quality, which advantage is, however, somewhat obscured by certain defects in the process of manufacture, which is far from being as perfect as in the province of Barcelona, and especially in the city and its surroundings.

MACHINE-MADE TILES.

The manufacture of this article is considerably developed in the province of Barcelona, where two important factories turn out a good tile, especially in biscuit. The material used is a plastic clay or marl of a yellowish color, which after a thorough baking whitens considerably. Formerly the clay used came exclusively from the splendid mines of the towns of San Saturnino de Noya and Gelida, about 30 miles distant from Barcelona. Messrs. L.

Maciá & Co. have, however, successfully substituted for this material a special combination of the clays found in the vicinity of the towns lying in the plain of Barcelona. Messrs. Romero y Escofel, of Hospitalet, still use the clays of San Saturnino de Noya. In both factories the tiles are worked in a similar manner. The clay in powder, having been sieved, is kneaded by means of an apparatus with blades disposed in screw shape, whereby the cake is obtained out of which the tile is manufactured. The molding is performed by means of a pressure machine, the main feature of which is an iron cylinder of an hexagonal shape having on each face the shape of the upper side of the tile, and against which on revolving a workman applies a cake of clay, a definite shape being obtained from the matrix, which contains a mold of plaster or delf with the imprint of the lower side of the tile. The tiles, after being dried, are piled in the oven and baked. One of the factories has two large continuous furnaces (Hoffman system); in another they bake their tiles in square ovens where fire is used intermittently. Both factories use hard coal for fuel. Until very recently these two factories produced an exceedingly large quantity of tiles, as they supplied this article not only to all Spain, but also to the Philippine Islands and the Spanish colonies in America. Lately, however, a great number of factories of machine-made tiles have sprung up throughout Spain, thereby diminishing the importance of the two in the province of Barcelona that before monopolized the manufacture. The two mentioned factories also work glazed tiles, but the demand for this article is considerably limited, and therefore this branch has not made the progress acquired by the manufacture of the ordinary tile. The price of ordinary tiles is $24, and that of the glazed tile $40 per M.

POTTERY PROPER.

This industry is so extended that for this very reason it is impossible to find any one important manufacturer. It may, therefore, be stated that the potters are many, the competition very great, and the articles manufactured not of a superior quality.

The kitchen utensils used to-day are the same as those of a century ago, in which neither perfection nor good taste are remarkable. The composition of the glazing material is susceptible of a radical reform; the actual basis of lead should be substituted by borax, which is harmless, and the glazing less easily attacked. This reform, however, would have to be instituted by a law to that effect. These utensils are baked in ovens of the intermittent system, with one or two superposed laboratories, wood being used as fuel.

An important industry, not so much on account of the number of uses to which they are dedicated as for the great number manufactured, is the making of glazed bricks for kitchens, the shape and condition of which in Spanish countries is well known to consist in a number of small iron furnaces or grates at a certain height from the floor set in mason work, to cover which the above-mentioned bricks are used. These, the manufacture of which is almost exclusively confined to Catalonia, are used throughout Spain, the Philippine Islands,

and the Spanish colonies in America. The bricks, which on account of the bright red color and the gloss are very pleasing to the view, are sold at the relatively low price of $18 per M. The glazing has lead as a basis. Messrs. Luis Maciá & Co. and Fita, of Barcelona, manufacture a large number of these bricks, but the principal factory and that producing the best article is that of Mr. Batllori, of Sans, which makes it a specialty. This same factory has likewise acquired great fame in the manufacture of earthen pipes used for water conduits and draining, being often as resisting as if made of cast-iron. Messrs. Maciá & Co. and Fita, of Barcelona, and Orriols, of Gracia, also manufacture a great quantity of these pipes, the production of which, in fact, is extended throughout Catalonia, but as a rule the process of manufacture is of a very rudimentary nature, the result being a very imperfect article. Large numbers are exported to the provinces of Spain and to America.

Some important factories among others also make fancy articles in the line of pottery. The manufacture has no special feature, its importance being of a purely mercantile nature on account of the exports to the West Indies.

Mr. Fita has essayed to give some variety to the articles thus manufactured, endeavoring to imitate the slabs formerly made by the Arabs with embossed designs, but the result has been hardly successful, the articles produced not being at all comparable to the models. The Arabs, besides the glazing, used enamel, which latter the factory of Fita entirely ignores, restricting the materials of manufacture to natural clays, thus obtaining earthy red, yellow, copper, green, and black. Besides the defects mentioned the article is very high priced, the square yard costing from 80 cents to $1.

The same factory has been more fortunate in another specialty, viz., vases, flower-pots, and other objects imitating the large vases of faiences. The merit of this manufacture consists chiefly in that of keeping inside the sphere of pottery proper. A very satisfactory result is obtained, the articles being sold at a very low price in comparison to that of true faience. The process of manufacture has no peculiar feature, as both in the imitation of Arabesques as well as in the vases, flower-pots, etc., the glazing has lead as a basis, and with the exception of the cases when black and green colors are to be produced, which are due to the oxides of manganese and copper, respectively forming an integral part of the glazing, all the other colors and shades are obtained by means of clays of different colors. No mention is necessary of the method of baking, as it is the same in all the different products of pottery.

MOSAICS.

There are two distinct kinds of mosaics, both used as flooring, one of which, the older, is obtained by the juxtaposition of numerous pieces of geometrical shape and each of a different color. Of this kind of mosaics there is but one factory at present in Catalonia, in the city of Reus, which produces a very good article both in aspect and hardness, as when struck by the steel it gives out sparks. The inconveniences of this kind of flooring consist in the difficulty in making surfaces perfectly smooth on account of the dif-

ferent thicknesses of the pieces and the fact that as soon as one piece is out of place the whole flooring requires resetting. Nevertheless at one time the manufacture of this kind of mosaic was at a great height and constituted an important industry. The difficulties already mentioned and the restriction which the geometrical shapes of the pieces imposed upon the general design, have given rise to the manufacture in modern times of incrustated mosaics. In this, as in its sister industry, natural clays are used, preference being given to those with a large quantity of alumina on account of the great heat of the ovens heated by hard coal. The colors are produced by various metallic oxides mixed in proper proportions. In the manufacture of simple mosaics the several molded pieces are obtained by means of pressure stamps, the matrices of which have the geometrical shapes to be given to the pieces. The baking is done inside of boxes or cases of refractory earth, in ovens of only one laboratory and one or more fire-places. The current price of this kind of mosaic is from 60 to 75 cents per square yard. In the manufacture of incrustated mosaics all kinds of designs are obtained with the same clays used in simple mosaics, the difference consisting in the molding, which, as in the previous case, is performed by pressure, but with larger machines, the dimensions of the pieces being larger. The shape is always square, with sides of two and one-half inches or more. The designs are obtained by placing slips of tin within the stamp matrices, and each one of the intermediate spaces formed being filled with the different clays previously colored. The designs thus obtained, the slips of tin are removed and the whole rendered compact by pressure. The baking is similar to that employed in simple mosaics. Owing to the difference of expansion and contraction of the various clays entering into the composition of the slabs, this industry offers many more difficulties than the former one. There is only one factory dedicated to the manufacture of this kind of mosaic, that of Messrs. Busquets & Anchisi, at Arenys de Mar, who have taken out a patent for the process. The theoretical and practical difficulties alluded to are the cause of a large quantity of mosaics being produced that can only be termed second-class, and the price of which is below that of simple mosaics. The factory mentioned possesses a steam-boiler, and is otherwise well equipped. It has a fair prospect of overcoming all the difficulties of an economical and industrial nature inherent to the carrying out of every new industry, even when intelligently directed.

CROCKERY.

The industry of crockery manufacture exists in Catalonia solely in a rudimentary state, the importance of which deserves no mention. All the ordinary crockery for domestic use in Catalonia is from the neighboring provinces of Valencia, manufactured principally in the regions of Manises and Bibes Albes.

SQUARES OF DUTCH CHINA.

There exist but few factories of this article in Catalonia, one in Gerona, one in Fassaba, and the remainder in Barcelona and its vicinity. Owing to the heavy competition of the factories in Valencia this industry has declined

and been ruined in Catalonia. In Valencia there are four principal centers of manufacture, viz: Manises, Valencia, Castellon de la Plencaund, Onda, where laborers' wages compared to those current in Catalonia are so low that the difference leaves more than sufficient margin to cover the expenses of transport. The Valencian manufacturers adopted before the Catalans the use of pressure stamps to mold the slabs formerly molded by hand. In the beginning this proved a disadvantage, as for a long time the hand-molded squares were preferred in Catalonia. The process of mechanically-molded squares was, however, preferred in Valencia and finally drove the hand-molded article out of the market, obliging the factories in Catalonia to adopt the new system. As the Valencian manufacturers had, however, the start, those in Catalonia have found themselves in an unenviable condition, owing to the difficulties of changing from the old system and having to adopt the new with all its advancements at once without passing through the intermediate grades. Among the factories of Dutch ware in Catalonia two are worthy of special mention, that of Messrs. Castells, in Barcelona, which, having had great difficulties to overcome, is now in a fair way to make rapid progress, and that of Mr. Piyol, equipped with the latest improvements and able to stand all competition. The latter factory, besides the common Dutch china squares, has also produced slabs of fine faience, but, owing to the small demand for this kind of goods, the importance of this industry is due to the demand in Barcelona for its own requirements and as a center of provision for other localities. This absorbs the production, not only of the factories in Catalonia, but also almost completely that of Castellon, in the neighboring Valencian region, in spite of the fact that the city of Castellon is the most actively engaged in this industry. From this fact, however, it must not be presumed that there is a lack of production; on the contrary, at present there is an excess, as the manufacturers have sought cheapness, thus increasing the supply. Prices have, therefore, receded remarkably, the squares of Dutch china of 8½ inches per side, of prime quality, being sold at $30 per M.

REFRACTORY OBJECTS.

Until very recently there was but one factory of articles of this description in Catalonia, that of Mr. Cuaerny, in the neighboring town of Sans, which was devoid of importance, although great care was taken in the manufacture of articles produced. This factory has at present developed great activity and has been furnished with every means of progress. The refractory bricks there manufactured are equal in quality to those from abroad, and lower in price. The factory also produces retorts for the distillation of hard coal, furnaces, crucibles, etc. The factory of Mr. Florensa also makes bricks and other articles of refractory earth of a very good quality, the products here manufactured being noted for the perfection in the baking. The clays used in the manufacture of refractory objects all come from a region in Tortosa, where there are fine deposits.

STONE-WARE.

The above-mentioned factory of Mr. Cuaerny is the only one that produces articles of this nature. The result obtained is good, principally in articles of common sandstone, out of which are manufactured carboys for acids. These constitute the largest part of manufacture of articles of this nature, and are of a very good quality. This factory provides the carboys for all the factories of chemical products.

PORCELAIN.

In all Catalonia there is but one factory of porcelain, that of Mr. Ramon Florensa, in the neighboring town of Sans. The articles there manufactured are of fine quality and high-priced, in which line the high tariff on similar objects from abroad favors the industry. Mr. Florensa's manufactures are distinguished by their elegant shapes and the good taste in their decoration. The factory, though not very active at present in production, has a steam-engine, three large ovens, and several muffles for decorating purposes. There are other workshops in Barcelona where porcelain is decorated, but they lack importance from a scientific and industrial point of view.

GLASS INDUSTRY.

Beginning with stained and ornamented glass, it can be stated that of late this industry has acquired a very large development in Catalonia, the principal manufacturing center being Barcelona. The large number of churches recently erected has caused an increased demand for stained and ornamented glasses. Among the recent monuments of this class the church of Las Salesas, in Barcelona, is worthy of special mention. The argive is the special feature of the style of architecture adopted, in which the latest improvements and the spirit of the times are clearly perceptible. The architect of this church, Mr. Mastorell, has introduced in the plan 200 square meters of vanes, which are closed with splendid stained glasses from the factory of Messrs. Amigo, which are remarkable for the richness of detail in sacred subjects and of the designs. Besides the church of Las Salesas, mention may be made of the following: that of the nuns of the Order of Adoratrices, in the new part of Barcelona; the church of Post Bon, of recent construction; and those of Santa Eulalia, in San Martin de Provensals, and Saint Stephen, in Sasrovias, yet in course of erection. All these churches have a large number of stained glasses of a very high class and quality, full of richness and detail. The churches in Catalonia of ancient date having stained glasses of shapes and designs worthy to be imitated are too numerous to mention, and besides the reproduction of these models are to be considered more from an artistic than an industrial point of view. As an industry stained glasses for another purpose have acquired great importance in Catalonia. In the interior of stores and places of resort, vacant spaces and the doors of closets are decorated with colored glasses of different and geometrical shapes joined together with strips of lead. An excellent model of this kind of glass and general design may be

seen in the entrance doors of a store of religious and sacred objects in the Plaza de Santa Ana in Barcelona. In other cases the glasses are not stained but merely adorned by different processes, constituting a much larger industry than the former on account of the great number of hands employed. The economic requirements are such that persons of the most limited means can dedicate themselves to this work, producing in a short space of time an unlimited number of copies. Various processes are employed; engraving, ornamenting, or simply painting. Sometimes two or more of these methods are used in combination with calcomania in a way to produce a showy and cheap article. Glass thus ornamented is used in the doors of saloons, halls, dining-rooms, and all similar places which are desired to be kept from common view without the light being shut out. Glass in panes is still the basis of another important branch of industry, namely, the construction of ornamented lanterns. Combinations of great artistic merit are obtained, and the success has been perfect, as could be seen in the illuminations during the feasts of Our Lady of Mercy, in Barcelona. Among the many factories working these ornamented glasses mention will be made of the most notable. That of Messrs. Vidal & Co. in the line of ornamented glasses and chandeliers is conducted in the most complete style, the most capricióus and artistic models being splendidly executed with perfection equal to anything done abroad. The building especially erected for the industry of ornamental arts in general has the department for the manufacture and ornamenting of glass on the first floor. In describing the fine stained glasses in the recently erected church of Las Salesas mention has been made of Messrs. Amigi, manufacturers of these glasses, which are a proof of the excellence of their work, as likewise of the capabilities of Catalan industry in stained glasses. Messrs. Pascual & Co. are well known by the ornamented glasses they manufacture, which, by their low price, are much used in rented houses. Messrs. Alexandre's etched glasses for doors of alcoves, and the manufactures of Messrs. Tolet, Milá y Mas de Haxars, and several others, are used for different ornamental purposes, which, on a larger or smaller scale, are also celebrated. A great many models are made, some of the most exquisite taste.

Glass industry proper may be divided into two parts—the manufacture of plane surface glass in panes and that of curved glass. Glass in panes, transparent and uncolored, used to allow the passage of light is not manufactured in Catalonia. These panes are brought from Gijon and Aviles, in Spain, and in larger quantities from Belgium, where the extraordinary cheapness of manufacture has proved a ruinous competition to Spanish produce and prevented the establishment in Catalonia of the industry of plane transparent glasses or that of plane ground glass for skylights. Curved or plastic glass, generally comprised in the branch of ceramics for the ordinary uses of life, is fully represented in the manufacturing industries of Catalonia. The manufacture of articles of crystal or half crystal, not of artistic value, is carried on in the province of Barcelona. The crystal works of Badalona produce a complete variety of these articles, both of crystal and half crystal. In the rest of Cat-

alonia only half crystal is worked. As already mentioned, nothing is manufactured in Catalonia in the line of art, engraved, or Bohemian glass, which, when required, is imported from Baccarat, St. Louis, or Lyons. Even in the manufacture of half crystal the demand far exceeds the production, large quantities being thus brought from other ports of Spain. This fact, however, contributes to keep the works established in full blast and to increase their number. Besides the works in Badalona, there are two others in Barcelona, two in Cervello, and one in Mataro. That of Badalona, belonging to Messrs. A. Farres & Co., is the principal, both in quantity and quality. It is the only factory working pure crystal, which is at times ornamented and engraved. The works are in Badalona, a short way out of Barcelona, the deposit and salesrooms being in this latter city. A great number of workmen are employed, some of them artists in the manufacture of artistic and costly articles. Among other articles these works have gained a reputation for the manufacture of globes for gas fixtures, in which the foreign product has been successfully competed with. They also produce the table glassware for large restaurants. Some other articles, not for general sale, but specially ordered, have also been manufactured, the result being very favorable to the good repute of the establishment.

Articles of half crystal for general use are here manufactured as at other works, but rather to order than to sell to retail dealers, who get their supplies at the works of Messrs. Casademund, which follow in importance those of Badalona and have a large sale of bottles and flasks of ordinary quality. This factory likewise makes a specialty of apparatus for scientific use, such as is required in chemical laboratories and collections of instruments of natural philosophy, of which there are on hand constantly a complete variety, which are sold at reasonable prices, in spite of the difficulties inherent to the manufacture of this kind of article. One of the principal branches of manufacture at these works are the glass jars used in apothecary shops, made of opaline crystal and ornamented with unalterable colors.

The factory of Messrs. Valles also manufactures in large quantities articles of low price, its products being extensively introduced throughout the country on account of being principally composed of articles of daily use which are in constant demand. The three factories mentioned are in Barcelona. There are two others in Cervello and one in Mataro, which have good ovens for glass manufacture. The articles produced are of the most ordinary kind, blue glass being a specialty on account of the large consumption in the highlands of Catalonia. The traditional use of the long-spouted glass blottles for wine gives constant employment to these factories, which place their wares with the greatest ease in their immediate surroundings free from the heavy expenses of transport.

In the line of glass articles mention alone remains to be made of the products of the blow-pipe, which, however, constitute a very insignificant industry. The works of Messrs. Casademund, which, as has been said, furnish apparatus for physical and chemical uses, receive frequently orders to make

from glass already worked special apparatus, which can only be done by means of the blow-pipe. This industry is carried on by the small establishment of Mr. Fradesa, where, in a reduced space and with few conveniences, and improving rather the expertness of the workmen, real fine work is done, thus avoiding having to order from Paris special articles of urgent need in a great number of cases.

Importations at Barcelona.

Articles.	Quantities in kilograms.	Value in pesetas.*
Ordinary hollow glass	786,703	236,010
Crystal and glass in imitation of it, including glass, gold, or silver-plating on the inner surface	160,075	256,117
Plane surface glass and crystal	935,824	748,658
Glass and crystal plated with quicksilver for mirrors, and crystal for watches and spectacles	8,755	28,016
Clay in ordinary bricks and tiles for building purposes	2,512,795	175,896
Clay in the shape of floor bricks, Dutch ware, glazed tiles, and pipes	95,709	14,357
Stone crockery and fine clay	190,292	275,922
Porcelain	67,473	168,681
Total	4,757,626	1,903,657

Exports from Barcelona.

Articles.	Quantities in kilograms.	Value in pesetas.
Ordinary hollow glass	123,869	43,353
Crystal and glass imitating it, including glass, gold, or silver-plating on the inner surface	5,099	8,414
Plane surface glass and crystal	20	14
Glass and crystal plated with quicksilver for mirrors, crystal for watches and spectacles	1,569	6,276
Clay in the shape of ordinary bricks and tiles for building purposes	1,007,205	153,926
Clay in the shape of floor bricks, Dutch ware, glazed tiles, and pipes	506,948	205,882
Stone crockery and fine clay	22,962	17,221
Porcelain	21,367	17,094
Total	1,689,039	452,180

BARCELONA, *December, 1887.*

FRED'K. H. SCHEUCH,
Consul.

SALT IN INDIA.

[From Moral and Material Progress and Condition of India, 1886-'87.]

The total consumption of salt in British India in 1885-'86 was 32,797,679 maunds,† with an addition of perhaps 371,000 maunds for the salt consumed in Burmah, which is manufactured in the province and pays an excise duty. These figures represent an increase in ten years of 22 per cent. in the consumption. The duty on salt all over India, Burmah excepted, whether taken in the shape of customs or of excise, was, in 1886-'87, 2 rupees per maund. Salt is imported into Bengal, is manufactured by solar evaporation

* The peseta = 19.3 cents. † A maund is about 82 pounds.

in Madras, Bombay, and Rajputana, or extracted as rock salt from the mines of the Punjab. The importation of salt into Bengal commenced in 1819, but was inconsiderable until the year 1835–'36. Government manufacture ceased in 1873–'74, and since that date the whole of Bengal, with the exception of Orissa, has been supplied by imported salt, the main part of which comes from Liverpool, the other sources of supply being France, Ceylon, Jeddah, Muscat, Italy, Hamburg, Bombay, and Karachi.

The stock at the commencement of the year was 982,909 maunds; 10,379,688 maunds were imported during the year, and 66,483 maunds were manufactured, the total coming to 10,446,171 maunds, or 373,102 tons. Duty was paid on 10,363,360 maunds (including 530,403 maunds which paid duty in Bombay). The stock remaining at the close of the year was 1,014,539 maunds.

Compared with 1885–'86, there was an increase of 5.1 per cent. in the net receipts, and of 15.9 per cent. in the quantity imported. The manufactured salt, which is confined to Orissa, was 85 per cent. less than in 1885–'86, the reason of the falling off being the transfer to Madras of the salt administration of a portion of that district. This change put a stop to the illicit practices of the borders, who consequently refused, most of them, to manufacture salt, and resigned their licenses.

Of the imports, 67.5 per cent. came from England, 12.17 from Italy, 8.43 from the Arabian and Persian gulfs, 6.2 from Germany, 5.1 from Bombay, and trifling quantities from Madras, Cape Town, and Akyab. The large increase of imports was due to a great increase in the direct trade with Germany and to low freights. An enterprising Aden firm started the manufacture of salt at that port for the supply of the Indian market. This promises to be successful on account of the proximity of the station to India, and from the fact that Aden is a coaling station, and ships that have brought coal thither accept freights for the rest of the voyage to India at low rates. Of the salt imported 9,085,532 maunds were passed into the interior—4,217,233 by river and 4,868,299 by rail. Imports were confined to Calcutta (96.62 per cent.) and Chittagong (3.38 per cent).

Salt revenue.

Country.	Sales of Government Salt.	Excise on salt manufactured locally.	Duty on salt imported from England.	Duty on other imported salt, Seaborne.	Duty levied by the inland customs department.
	Rx.	*Rx.*	*Rx.*	*Rx.*	*Rx.*
India, general	172,639	9,519	.....	.....	1,371,012
Central provinces	62,231	.....	.....	.....	.....
Lower Burmah	.....	3,249	29,507	.....	.....
Bengal	.....	.....	1,435,476	513,034	.....
Madras	427,635	985,135	241	.....	.....
Bombay	61,191	1,516,552	411	358	1,139
Total, 1886–'87	723,696	2,514,455	1,465,635	513,392	1,372,151
Total, 1885–'86	1,158,653	2,361,047	1,511,582	309,219	954,834

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Country.	Miscellaneous receipts.	Total receipts.	Total charges.	Net revenue.
	Rx.	*Rx.*	*Rx.*	*Rx.*
India, general	42,556	1,595,726	*145,314	1,450,412
Central provinces	.....	62,231	.....	62,231
Lower Burmah	.....	32,756	248	32,508
Bengal	10,212	1,958,722	1,122	1,957,600
Madras	12,011	1,425,022	138,602	1,286,420
Bombay	3,536	1,583,187	200,886	1,382,301
Total, 1886–'87	68,315	6,657,644	486,172	6,171,472
Total, 1885–'86	49,793	6,345,128	401,618	5,943,510

* Including 10*l.* for charges in England and exchange thereon.

NOTE.— The denomination *Rx.* means tens of rupees.

The receipts of the year were 44.5 per cent. higher than those of 1885–'86, and only 2⅓ lacs less than in 1884–'85, which was an exceptionally favorable year. This improvement was in the main due to the revival of manufacture and to larger sales of salt at Sambhar Lake, where, in the previous year, sales had to be suspended in consequence of bad seasons and floods. To prevent the exhaustion of stocks it was found necessary in that year to invite trade from other places by raising the price at Sambhar from 4 to 8 annas per maund. The deficiency from this source was supplied by Baragora salt from Bombay, thanks to the facilities of the railway system. The increased price was not maintained in 1886–'87, and trade returned to its normal condition. The improvement in the receipts was due also in part to the completion of a local railway line, coupled with the lowering of railway rates of freight on rock salt, which greatly increased the demand on the Punjab mines.

The apportionment of the gross receipts among the different sources of supply is given in the following statement:

Gross receipts.

Mines.	1885–'86.	1886–'87.
	Lacs of rupees.	*Lacs of rupees.*
Punjab mines	36.28	38.21
Kohat or Trans-Indus	2.06	2.22
Mandi mines	*.31	*.31
Delhi (or Sultanpore sources)	6.68	7.65
Sambhar Lake	40.68	89.03
Didwana	13.35	10.89
Pachbadra	7.58	7.15
Palodi	.30	.18
Internal branch	1.50	1.49
Total	108.74	157.13

* These figures represent only the Government profits, the greater portion of the receipts being the share of the native state of Mandi.

The charges amounted to 146,269 Rx, and the net result, therefore, was a profit of 1,425,172 Rx.

The consumption of salt manufactured by the department was from 5,772,000 to 7,866,564 maunds, or 36 per cent., full duty being paid on 6,895,321 maunds, and the remainder issued to native states, either duty free, under treaties, or at special rates.

The payments to native states under treaties amounted to 278,550 Rx. Wholesale prices in February, 1887, ranged from 2.8 rupees at Jhelum to 4.18 rupees per maund at Saugor, and were generally lower than in 1886, the price, of course, increasing with the distance from the source of supply. In Behar, the northwest provinces, and Oude prices fell to the normal level. In Punjab and in the central provinces, which draw their supply from Bombay, they were steady.

In Burmah there was a falling off in both the amount imported, which pays customs duty at the rate of 3 annas per maund, and in the local manufacture, which pays excise. A larger proportion was sent to Upper Burmah, and still more would have gone but for the disturbed state of the country and the want of carriage. The demand for salt for curing fish was not great, and in spite of the efforts of the Government to encourge that industry it does not appear to thrive.

Up to 1878 salt had for many years been a Government monopoly on the Madras coast. Salt was made in pans by very poor people and sold to the Government, which sold it to the trade and to consumers at a fixed price of 3 annas per maund, plus the duty for the time being. About 1874 the president of the Cheshire salt board visited India and made strong representations against the Government monopoly, urging that free mauufacture, under a good excise system, would supply better and cheaper salt to consumers. A commission was appointed to consider the matter in Madras, and they recommended that licensed manufacture under an approved excise system should gradually be substituted for the Government monopoly. The Government of India agreed, stipulating, however, that a sufficient number of Government factories should be maintained side by side with the excise factories, for the regulation of the quality, supply, and price of salt. Salt manufacture on the Madras coast is conducted by solar evaporation instead of artificial boiling, as in Burmah and Orissa. The out-turn, therefore, is liable to be much affected by bad seasons, and under the Government monopoly system a year's supply of salt was generally kept in stock to guard against failure.

The excise system was first introduced on the west coast (Malabar and Canara), and the Goa factories were closed; but the private factories produced a bad salt at a high price. They could not, however, make it pay, and they withdrew from the business. Government factories were not reopened, as good and cheap salt came in large quantities from the Portuguese coast, near Goa. The industry was lost to the Malabar coast; but perhaps the loss was not much felt in those three rich, prosperous districts. The excise system was next introduced into the Tuticorin subdivision of the Tinnevelly districts. It answered there very well; superior salt was produced

and sold in quantity at prices not exceeding 3 annas a maund. The excise system was then (1883–'84) extended to other districts. Reports showed that the change wrought more harm than good to the consumer. Still the change to the excise system was extended to the remaining districts, although it was reported that the selling price of ex-duty salt ruled higher than before. The result of these changes was that by 1887 about 87 per cent. of the salt consumed in Madras was manufactured on the excise system. The selling price, ex-duty, averaged over 6 annas a maund, and sometimes reached as high as 14 annas. No stocks were maintained to provide against bad seasons. Steps are now being taken to re-establish Government factories in order to keep down the price of this prime necessity of life, and to secure that adequate stocks of salt are maintained.

The actual figures for the year show that forty factories were worked on the excise system against thirty-one in 1885–'86, and that six continued to be worked on the monopoly system. The quantity of salt manufactured and stored during the year was 502,589 maunds under the monopoly and 4,306,549 under the excise system, the total, 4,809,138 maunds, being 15.92 per cent. less than in 1885–'86 and 36.55 per cent. less than in 1884–'85; 1,095,386 maunds were imported. The falling off in the out-turn of Government salt (68.54 per cent.) was due, of course, to the extension of the excise system. The net decrease is attributable to the unfavorable season, and to the entire cessation of manufacture at some factories at which the stocks were large. The slight increase (4.47 per cent.) in the out-turn of excise salt was much smaller than might have been expected with the increase in the number of factories. Though the season was unfavorable, the prices were not unduly high in the neighborhood of monopoly factories, but in four out of the seven east coast divisions, where there was no such competition, the maximum wholesale price, exclusive of duty, ranged from 12 annas to 1 rupee, and the average throughout was 5 annas 7 pice, compared with the monopoly price of 3 annas ex-duty. Home consumption amounted to 6,573,835 maunds; 1,127,904 maunds were sent inland; 59,426 maunds were supplied to the French Government; stocks were reduced from 5,231,371 to 2,903,856 maunds.

There are five sources of salt supply in the Bombay presidency: (1) Government works in the Runn of Kutch, where baragora, or large crystal salt, is manufactured from brine wells. About one-fourth of the whole supply comes from this source and is exported to North Guzerat, the central provinces, central India, Rajputana, and Malwa, a little going to the north-western provinces. (2) Government works near Bulsur, where sea salt is manufactured under yearly licenses. (3) Seaside works in Thana, Bombay, Alibag, Ratnagiri, and Kanara collectorates, where salt is manufactured by proprietors and licensees. These works number 420, of which 20 are Government property and supply local consumption and export to the Nizam's territory, the central provinces, Berar, Bengal, and the Malabar coast. The out-turn is about 67 per cent. of the total production. (4) Works in Portu-

guese territory, 249, 83 of which are worked on account of the British Government, 47 on account of the Portuguese Government, and 119 by proprietors working on the excise system. The salt thus produced is about 4 per cent. of the total production of the presidency, and the markets for it outside Portuguese territory are the Malabar coast, the surrounding British districts, and the native states of Savantvadi. (5) Importation from abroad, which is, however, trifling in amount.

It would be unfair in reviewing the operations of the year to compare 1886–'87 with 1885–'86, because in the latter year there was quite an exceptional export of Baragora salt to meet the demand in northern and central India caused by the failure of the Sambhar Lake source of supply. The following statement, therefore, gives also the figures of 1884–'85, for the purposes of comparison, and it will be seen that, though the consumption of 1886–'87 was 8.24 per cent. less than that of the year preceding, it was 17.6 per cent. greater than in 1884–'85, the demand for Baragora salt to supply the deficiencies of the Sambhar source having been more or less maintained until, in order to avert the complete exhaustion of stocks which was approaching, issues were at last confined to the presidency proper.

Year.	Duty.	Consumption in thousands of maunds.		
		Full duty.	Reduced duty, or free.	Total.
	Rx.			
1884–'85	1,424,100	6,725	587	7,312
1885–'86	1,841,700	8,642	630	9,272
1886–'87	1,621,100	7,940	661	8,601

At the Government work in the Runn (Kharagoda) the salt is supplied at the uniform ex-duty rate of 1 anna 3 pice per maund, with a royalty added of 9 pice for salt consumed within the province and 3 pice for salt exported. In the Konkan, North Canara, and Goa the average price at the works (ex-duty) was 2 annas 9 pice per maund. In Goa itself the price was three or four times as high, and one effect of the completion of the Southern Mahratta and West of India Portuguese Railway will be to bring better and cheaper salt from the north within reach of places now supplied by Goa.

Omitting Portuguese India, the consumption in the Bombay presidency was 10.54 pounds per head against 10.82 in 1885–'86. In Gujarat, where facilities for smuggling exist, the consumption fell from 10.26 to 9.92 pounds. The wholesale market price in August, which is the dearest month, averaged 3 rupees 2 annas (highest Dharwar, 4 rupees 1 anna 8 pices; lowest Ahmedabad, 2 rupees 5 annas 4 pices).

In Sind the licit consumption is not much more than 8 pounds per head; but this is no evidence of the real consumption, as very great facilities exist for illicit manufacture from earth salt. In the circumstances it is satisfactory to learn that the sales of the locally-manufactured article increase steadily,

and that the net revenue—45,851 Rx—has quadrupled in eight years. The sources of supply are the Moath Salt Works, near Karachi, the Saran, and Dilyar salt deposits, and the Sukkur depot. Rock-salt is imported from the Punjab, and a little comes by sea.

The price of salt was 2 rupees 10 annas at the Sukkur depot, with 6 annas added for Punjab salt, and 2 rupees 1 anna 6 pices at the other bases. The wholesale price was 2 rupees 15 annas, and the retail price 3 rupees 3 annas 1 pice per maund, these figures being lower than in 1885–'86.

At the one existing salting station 2,006 maunds weight of fish were cured, an increase of 23.45 per cent. compared with 1885–'86. The curing yards, however, are not successful financially, the only people who benefit by them being those to whom the fishermen, who receive but a bare subsistence for the entire fruits of their labor, are indebted. The whole of the fish is exported.

EXPORTS FROM NOTTINGHAM TO THE UNITED STATES.

Statement showing the declared value of exports from the consular district of Nottingham to the United States during the four quarters of the year ending September 30, 1888.

Articles.	Quarter ending—				Total for year.
	December 31, 1887.	March 31, 1888.	June 30, 1888.	September 30, 1888.	
Carpets	$1,178.94	.....	$1,363.37	$1,301.87	$3,844.18
Cotton goods, etc	40,259.40	$47,989.75	16,226.89	13,267.64	117,743.68
Drugs, paints, etc	23,794.73	33,142.73	23,523.21	25,332.32	105,792.99
Elastic goods	42,540.10	36,255.34	37,491.68	31,518.79	147,805.91
Hides	152,700.54	141,277.09	111,214.12	86,019.63	491,211.38
Hosiery	202,929.75	334,316.53	227,787.16	551,939.99	1,316,973.43
Lace	736,244.61	968,716.73	611,258.14	629,009.76	2,945,229.24
Leather	35,315.43	21,235.82	31,535.44	24,496.11	112,582.80
Linen	41,172.29	45,607.88	35,632.49	58,710.27	181,122.93
Machinery	32,712.78	18,271.19	10,596.70	4,931.26	66,511.93
Porcelain and stone-ware	4,082.95	4,912.89	4,445.24	7,042.61	20,483.69
Silk goods	9,950.24	22,171.89	11,621.05	21,335.63	65,078.81
Woolens	3,133.37	14,554.94	11,709.95	36,880.63	66,278.89
Miscellaneous	5,114.81	4,003.07	4,538.51	6,491.25	20,147.64
Total for year	1,331,129.94	1,692,455.85	1,138,943.95	1,498,277.76	5,660,807.50
Total for previous year	1,290,673.64	1,683,117.78	1,017,049.92	1,871,209.36	5,862,050.70
Increase	40,456.30	9,338.07	121,894.03	.....	.....
Decrease	.....	.....	.....	372,931.60	201,243.20

G. STEDMAN WILLIAMS,
Consular Agent.

DUTY ON PINE EXPORTED FROM CANADA.

His excellency the governor-general has been pleased to order, and it is hereby ordered, that the export duty on pine logs be increased to $3 per 1,000 feet, board measure.

(Signed) JOHN J. McGEE,
Clerk Privy Council.

NOVEMBER 13, 1888.

IMPORTATION OF PORK INTO THE NETHERLANDS.

Ministers of the Interior and Finances:

Taking into consideration Article 2 of the king's resolution of August 14, 1888 (Staatsblad No. 142), forbidding the import and transit of hogs, fresh and salt pork, lard, legs, manure, and other products of hogs, do hereby notify those whom it may concern that exception from the prohibition of import and transit is allowed:

(1) For hogs (no more than two) and for meat designated in article 1 of the king's resolution of August 14, 1888, (Staatsblad No. 142, no more than 3 kilograms each) on board of vessels and boats for private use for the persons on board, provided those hogs or meat shall not be unloaded.

(2) For meat designated in article 1 of the king's resolution (no more than three kilograms each), which travelers carry for private use.

(3) For salted meat, designated in article 1 of the king's resolution, dried or smoked at later date, provided that on the import there shall be furnished a description of origin of the sausage, so as to be sure it is harmless, and further notify those whom it may concern that cooked or roasted meats designated in the king's resolution of August 14, 1888, (Staatsblad No. 142) are allowed dispensation from the prohibition.—THE HAGUE, *October* $\frac{17}{10}$, *1888.*

MACKAY,
The Minister of the Interior.
GODIN DE BEAUFORT,
The Minister of Finance.

[Circular.]

My circular of August 21 last, No. 2941, division M. P., has given rise to the question to whom strangers have to address themselves to request dispensation of the prohibition of import and transit of foreign fresh and salt pork and of lard, legs, manure, and all further products of hogs.

In case of import, strangers should address themselves to the king's commissioner in the province of destination of the imported articles, and in case of transit, to the commissioner in the province where the custom-house is situated through which the importation takes place.

PERU IN 1887–'88.

The year ending on the 30th of June last has been commercially unfortunate for Peru, and several are the causes which have combined to bring about such a result. From the month of November, last year, until June 1, trade interdiction was declared with Chili owing to the prevalence of cholera in that Republic, and the suspension of a movement amounting to probably 6,000,000 sols per annum was naturally injurious to commercial interests generally, and to those of the custom-house. The collapse of paper money, which occurred in the beginning of this year, and of which a detailed report was made to the Department, withdrew nearly 2,000,000 sols from circulation, and was a severe blow to the numerous class engaged in business and

remaining with that inconvertible currency in their possession. The decline in foreign markets of the price of silver, one of the principal exports of Peru, was productive also of disadvantageous results, and from the general poverty and depression which have existed since the foreign and internal war commerce has been unable to recuperate or regain any condition at all resembling its former standard. Up to the period when, by the fortunes of war, the nation was deprived of its wonderful resources in the form of guano and nitrate of soda, which were appropriated by the victorious enemy, the Government, instead of being supported by the people, was really the disburser of money and assistance. Enormous civil and military lists were established; the number of public employés was extraordinarily out of proportion with the duties to be performed, and the generosity of the State, with ample means at its disposal, was extended to the needy on every necessary and many unnecessary occasions. With the loss of those resources the change was inevitable and violent. The Government discovered that it must derive its support from the people at large, and the intricate problem of establishing taxation in a country where it was practically unknown presented itself for immediate solution. The Department has been from time to time informed as to the progress made in this difficult undertaking, and in my last report the failure to carry out the imposts and taxes ordered by Congress was referred to. This failure has now become even more apparent. The poll tax laid upon all inhabitants, native and foreign, from twenty to sixty years of age, of four silver sols per year on the coast and two in the interior was expected and reported in his estimates by the minister of the treasury to reach 500,000 sols or more per year, and the result so far, after more than a year's effort, is under 100,000. In the interior departments the collectors have found it impossible to successfully perform their duty, and the people so stubbornly resist that force would have to be resorted to were the attempt pushed to an extreme. This would be politically dangerous, and capital would be made out of such action by the enemies of the Government, hence, with the exception of Lima, Callao, and a few of the larger cities near the coast, the tax has been practically abandoned. Other means of financial relief were ordered by Congress in the form of sales for the monopoly of disposing of opium, tobacco, manufactured and in the leaf, playing cards, imported and Peruvian wines and liquors, and other articles considered as luxuries, but the result has also proved unsatisfactory and has given rise to a system of smuggling which at one time threatened to be of serious consequence. While these expected receipts have failed, and the treasury is in a crippled condition, the expenses of the Government have continued to be great, although much economy appears to have been practiced, but the army of employés is always in arrears of pay. They form a considerable portion of the community, and the effect of their poverty is apparent. The decrease of traffic along the coast of the Republic has deprived a large class of the people of their usual resources; the suspension of all public works reduces the field for labor, and the want of capital and paralyzation of commerce add greatly to the burdens under

which the people suffer. Foreign capital and enterprise are indispensable for the advancement of this country materially and in the way of business. The natural resources of Peru as regards mining, agriculture, wine growing, and cattle raising are unlimited, but find here no sufficient elements for their proper development, owing to the inability of the Government to lend assistance, and the general poverty everywhere experienced. And that capital and enterprise, certain to be richly rewarded, is withheld doubtless from the distrust entertained by foreigners as to the guaranties afforded to them in the investment of their means, and the recent proceedings regarding certain railway contracts based upon legal dispositions, and perfected with properly constituted Governments, are certainly not calculated to dispel such distrust. Some adventures of foreign capital have been made in mining enterprises. The famous silver mines of Hualgayoc, in the vicinity of Cajamarca, are now to be worked by an American company, said to be well equipped with the means of successfully developing their undertaking, and the gold washings of Carabaya, near Arequipa, are in the hands of a responsible organization formed in London by the late Admiral Garcia y Garcia.

The Lima Railways Company, an English organization, recently sent to Peru the president of their board of directors, and this gentleman has been engaged in investigating the advantages of continuing the line connecting Lima with Chovilla, to Pisco and Ica, 120 miles down the coast. This railway has been the subject of consideration for many years past, and the general opinion is that from the immensely fertile region it would traverse, from whence the Lima and Callao markets could be cheaply provided with provisions and meat, the undertaking would prove to be most profitable, more particularly as the engineering difficulties to be surmounted are not formidable. No proposition has as yet been made to the Government, the decision of the London board having first to be heard, but it seems probable that the undertaking will be commenced. Owing to the complete service on the coast offered by steamers, the railways constructed or projected in Peru have had a route leading from the ports inland, and this possible departure from the customary plan is regarded with much interest. Another proposed railway has been surveyed, under Government supervision, from the Cerro de Pasco to Port Salvation, on the river Pichis, a stream flowing down to the Pachitea, one of the Peruvian head-waters of the Amazon. The road, if constructed, offers no especial difficulties, and would form a connection between Cerro de Pasco, the ultimate terminus of the Oroya railway, and a point on the Pichis, 204 miles distant, where steamers drawing 3 or 4 feet of water can readily arrive, and then proceeding down to the Pachitea, carry the valuable products of that region, principally India-rubber, dye woods, fruit, etc., to markets on the Amazon and beyond. This road, when completed and connecting with the projected prolongation of the Oroya to the Cerro de Pasco, would open up the rich Amazonian region to enterprise from this portion of the Republic, communication between the two points at present being so difficult of accomplishment and so expensive as to prevent all profitable trade.

During the past year the Government at Lima has formed several military colonies composed of half-pay officers and veteran soldiers, which have proceeded to the country near the Pachitea for the purpose of founding settlements and opening up those districts to commerce. The information received from these expeditions corroborates the general descriptions regarding the natural wealth of those sections, and the Government is aiding the colonists with the limited means at its disposal.

The development and prolongation of the great railways, upon which such large amounts of money have been expended, depend upon the action to be taken by Congress regarding the proposals made by the bondholders of Peru abroad, whose capital has been employed in the undertakings, to the Government at Lima. To the general disappointment, and as the Department was duly informed, this proposal, known as the Grace-Aranibar contract, was not acted upon by Congress at its last session owing to certain animadversions made against several of the clauses by the Government of Chili, and although the President, at the opening of the Congress now in session, did not refer to the contract in his inauguratory message, his silence is explained by the official journals of Lima from the circumstance that as not only the Chilian but the British Government has interested itself in the matter, the communication made by the executive to the Legislature, or to be made, must be of a reserved character. On the successful issue of this contract depends, it is believed, the future progress of Peru. Should it be ratified, the necessary capital for the completion of the railways would be furnished by the bondholders, who thus seek to promote their interests, becoming the holders of the roads for a long period of time, and giving a participation of profits to the Government, and at the same time giving an opportunity for labor and assuring the industriously inclined of lucrative occupation. Before closing this dispatch it may be possible to report some action of Congress regarding the important matter.

Numerously-signed petitions from different portions of the country have been presented to the Government urging the adoption of this contract, but, as has been stated, we are in ignorance at the present moment of its prospects of success. The British minister at Lima received information from his Government a short time since to the effect that Great Britain could not entertain the conditions desired by Chili which, it is thought, were of a nature seeking to introduce some dispositions regarding the territory of Arica and Tacna, held by Chili for a period of ten years, into a contract purely mercantile in its character, and the English cabinet desired Peru to be made acquainted with the favorable views it entertains respecting the proposed contract, by which the interests of British creditors would be assured and those of Peru certainly advanced.

The report of the directors of the Lima mint for the year ending June 30, 1888, has been published by order of the Government. For that period the receipts of the mint for the purpose of coinage were 1,428 bars of silver, weighing 69,057 kilograms, producing 3,073,789.61 sols; of this

2,454,000 sols were placed in circulation by the owners, for the silver coined was private property. Three per cent. was collected for the expenses of the operation, of which 2⅓ per cent. went to the contractor, under whose direction the mint is conducted, and one-half of 1 per cent. is appropriated for the salaries of the Government employés, guards, etc., who are concerned in the official assays, the security and protection of the buildings and their valuable contents. The silver coin exported from Peru during the year was 1,108,415 sols, and the duty imposed amounted to 36,617 sols. Of gold 74 bars were exported weighing 137 kilograms. The present coining capacity of the mint is 400,000 sols per month, and with an inconsiderable expenditure for improvements on the machinery, the director asserts that 1,000,000 of sols monthly could easily be turned out. The mint at Lima was erected thirty years ago, and is a faithful reproduction on a limited scale of that in operation at Philadelphia. During the year the mint also received from Bolivia and Chili 231 bars of silver, which were coined into 622,654 sols. The coinage is so perfectly executed and the charges so comparatively reduced that considerable amounts of silver are constantly being received from the coast for manufacture into money. In view of the important results to be derived from an extension of the coinage facilities, the Government has ordered that the machinery requiring repair be looked after, and, at the request of the Chamber of Commerce at Lima, that the bar silver delivered by native miners and owners be coined in preference to that arriving from abroad. The mint is self-supporting and is directed by experienced and scientific men, and some of its work, not only in coins but in medals, badges, etc., has attracted attention in Europe for its excellence. With the steady increase of mining industry in Peru, and the extinction of paper money as a circulating medium, the labors of the Lima mint are destined to be important in the extreme.

Viniculture, near Ica and Fisco, the centers of the grape-raising districts, has been very successful during the past year. The home consumption is very extensive and considerable exportation is made to Chili, Bolivia, and the northern coast. The staple is a brandy or aguardiente, known as Pisco and Italia, the first being of an ordinary and the second of a highly refined quality. Twenty-five thousand piscos, as the jars containing that spirit are termed, each containing 1 arroba, were produced; 140,000 arrobas in casks and barrels, and 40,000 casks of Italia, containing 6 and 4½ arrobas each. The arroba weighs 25 pounds. Very excellent wine—sherry and claret—is also manufactured and meets with a ready sale in the country. It has also been favorably reported upon from abroad. The taxes placed on the sale of these articles, communicated some time since to the Department, have not lessened the amount of their production, and in this country, where no prohibition laws regarding liquors or temperance societies are known, the Pisco and Italia are looked upon as necessities, and the demand is uninterrupted.

An interesting report was recently made public by the municipality of Lima with regard to the public schools in that city, which are free, open to both sexes, and under intelligent management. One hundred and forty of

these schools are established and are attended by 9,850 scholars, which, estimating the population of the capital at 120,000, would give about 8¼ per cent. on that number. The girls outnumber the boys by one-fifth. The studies pursued are elementary, and the superior schools and University of Lima afford all further facilities needed. On the celebration of the national independence anniversary the municipality gives money premiums to the parents who are most diligent and constant in sending their children to the schools, as well as conferring substantial rewards on the deserving scholars. This plan has been productive of the best results. On Saturday afternoons the boys are exercised in military evolutions, and the girls in gymnastic exercises, also an important point of education in a laxative climate as that of Lima. In Callao the proportion of scholars is not so great.

The Department has already been informed regarding the prolongation of the service of the South American Steamship Company from Callao to Panama. This organization, which is mainly Chilian, is possessed of a fine fleet of Clyde-built steamers, measuring in all 33,000 tons, and for the service of carrying the mails from Valparaiso to the Isthmus receives from the Government of Chili a subsidy of $225,000 per annum. One of the principal objects held in view by this company is to establish regular and prompt communication with the steamers plying between Aspinwall and New York, a matter in which the Pacific Steam Navigation Company, for so long monopolizing the coast, has never interested itself. The advantages to be derived by American residents and merchants in these countries from such an arrangement will be very considerable, and the company will be given the preference in patronage. The officers of the new line are principally Americans and Germans, and their attentions to passengers have made them deservedly popular. Other advantages are naturally to be expected from the competition now established.

Immigration to Peru, in the sense generally accepted, has never been a powerful factor in her history. Other countries in America, notably the United States and the Argentine Confederation, have attracted the stream in their direction. The reverse has occurred here during the past year. Many foreigners, established in the country for some time past, disheartened by the paralyzation of trade, and doubtful of a brighter future, have wound up their business and departed for some more promising neighborhoods. Most of these are Italians, who in Peru are amongst the most thriving and industrious of the inhabitants, and the turn of the exodus is towards the Argentine Republic. Such a departure was universally lamented, it bringing home to the people a further sense of the unfortunate condition of the Republic. A society has been formed at Lima composed of influential men for the purpose of inducing immigration, and the advantages offered to colonists in the Amazonian regions are demonstrated in a book recently published by a corresponding member of the society, the Peruvian consul at Southampton, England. However, until the resources at the disposal of the Government are adequate for furnishing transportation, etc., the tide of immigration will not set this way.

Since writing the foregoing observations respecting the Grace-Aranibar contract, more favorable information has been made public, which explains the reticence of the President regarding the subject. By cable directions from his Government, the British minister at Lima asked the Peruvian minister of foreign affairs if a representative from the English creditors would be received, who would be empowered to withdraw those clauses of the contract which were distasteful to Chili. The answer was to the effect that the Government of Peru would have much satisfaction in receiving such a commissioner, since it was the desire of the nation to arrange the foreign debt, and to do all possible for the creditors under the circumstances. It is authoritatively stated that the opinions of a number of the most prominent members of Congress were consulted before this reply was made, and their unanimous advice was to improve every opportunity for a settlement of the debt, and for furthering the success of the contract which promises such advantages to the country. The commissioner is already on his way to Lima, and at last well-founded hopes are reposed in the perfection of this arrangement, by which Peru will become financially free.

In his recent report to Congress, the minister of finance foreshadows a more satisfactory condition of the exchequer during the fiscal year ending in 1889. He makes no reference to the poll-tax, which has been mentioned in this dispatch, probably from the unfavorable circumstances attending it, but he estimates the following amounts of revenue from taxes and contributions imposed by Congress in 1886: From the sale of internal stamps for tobacco, 350,000 sols per year; from the tax on the sale of wines and liquors, 800,000 sols per year; or rather 890,670 sols per annum, as he calculates that each inhabitant of the Republic, the population being estimated in his report at 2,699,000, pays 33 cents per year on the wine and liquor he consumes. The tax on opium, which is 10 sols per kilogram, is expected to bring into the treasury the sum of 250,000 sols per annum, and from the railways now under State management 75,000 sols per year are counted upon. According to the minister's estimate there will be a surplus of 380,000 sols at the end of this year, but no provision of a competent character is made for the payment of the salaries, pensions, etc., in arrears, which, according to an official statement recently made public, reach nearly 14,000,000 of silver sols, which the creditors would gladly cancel for one-tenth of that sum.

The minister also presented the statement of estimated revenue for the year 1889, and after a lengthy discussion in the chamber of deputies the figures were officially fixed as follows:

	Silver sols.
From custom-houses	4,882,250
Contributions, poll-tax, on wines and liquors, tobacco, opium, etc	1,589,400
Railways	74,750
Post-office	188,197
Telegraphs	17,000
Sundries	123,600
Total	6,875,197

Although no report of the estimated expenditures has yet been officially presented, the minister expressed the opinion that a surplus would also be forthcoming at the end of 1889. Experience has proved, however, that no great confidence may be reposed in these calculations. The item regarding railways does not include the amounts anticipated from the Southern, Northern, and Oroya roads, since by law all net proceeds from these lines must be applied to the work of prolonging them to their originally projected termini.—CALLAO, *June 30, 1888.*

H. M. BRENT,
Consul.

COMMERCE, NAVIGATION, AND EMIGRATION OF BREMEN.

The following are interesting tables of the development of Bremen's commerce since the year 1867, showing the average value of imports and exports, viz:

Imports.

From—	1867–'71.	1872–'76.	1877–'81.	1882–'86.	1887.
	Marks.	*Marks.*	*Marks.*	*Marks.*	*Marks.*
United States	92,982,000	135,350,000	166,887,000	157,324,000	177,395,000
Great Britain	52,866,000	75,685,000	58,568,000	55,439,000	43,810,000
Europe (except Germany)	28,438,000	41,472,000	40,656,000	46,181,000	45,728,000
British North America	254,000	34,000	243,000	39,000	11,000
Central America	1,563,000	4,460,000	2,835,000	3,303,000	2,993,000
South America	25,057,000	30,189,000	30,114,000	39,924,000	42,105,000
West Indies	11,001,000	13,175,000	12,468,000	10,004,000	9,865,000
Africa	2,087,000	5,034,000	4,313,000	3,704,000	6,766,000
Asia	19,785,000	25,137,000	34,634,000	34,158,000	43,934,000
Australia	696,000	1,511,000	446,000	584,000	7,535,000

Exports.

To—	1867–'71.	1872–'76.	1877–'81.	1882–'86.	1887.
	Marks.	*Marks.*	*Marks.*	*Marks.*	*Marks.*
United States	69,925,000	80,672,000	71,291,000	90,017,000	88,666,000
Great Britain	16,566,000	21,652,000	26,288,000	17,586,000	22,934,000
Europe (except Germany)	65,400,000	83,885,000	87,440,000	89,797,000	96,284,000
British North America	304,000	425,000	238,000	260,000	172,000
Central America	668,000	1,420,000	992,000	912,000	533,000
South America	2,665,000	2,931,000	7,470,000	11,052,000	9,004,000
West Indies	2,760,000	2,284,000	1,418,000	1,374,000	1,580,000
Africa	460,000	597,000	689,000	720,000	603,000
Asia	1,622,000	956,000	803,000	1,806,000	12,832,000
Australia	673,000	844,000	1,031,000	1,473,000	5,333,000

COTTON.

The trade this year up to June 30 shows plainly the importance of Bremen as the continental cotton market. There have been great improvements made here in the handling and storing of cotton, and I hear of no complaints this year in that regard. Large warehouses have been built, and the

unloading and storing has been greatly facilitated and improved. A special reduced railroad tariff on cotton has been obtained, thus enabling Bremen to compete with other continental ports whose water routes to the interior always placed Bremen at a disadvantage in this respect, owing to its unfortunate geographical location.

I can say to our cotton merchants that they will do well to direct their attention to Bremen.

PETROLEUM.

The imports of petroleum from July 1, 1887, to June 30, 1888, increased 100,000 barrels over the imports for the same period of 1886–'87.

The total imports for the year ending June 30, 1888, were 817,703 barrels, of which 263,984 barrels were imported in 35 sailing vessels and 553,739 barrels in 27 tank steam-ships.

The days of the petroleum barrel are numbered, and the future mode of transporting petroleum will undoubtedly be in tanks. It is estimated that over 80 per cent. of the petroleum to arrive here next year will be brought in tank steamers.

The reduced railway tariff in favor of Bremen has enabled shippers here to compete with Holland and Belgian ports, and the increase of trade in consequence is very noticeable.

There has been as yet no importation of Russian petroleum into Bremen, but there is one tank steamer loading at Batoum with about 20,000 barrels of refined oil for Bremen. There is no danger to be apprehended here of Russian oil competing seriously with the American.

SHIPPING.

The iron ship-building industry is picking up a little. Nearly all the ship-yards are doing some work. Wooden ships are not in demand. All the Bremen steam-ship companies are doing a good business, are paying fair dividends, and their shares are going up. They continue building and adding new steam-ships to their fleets.

Statement showing the weight and value of the total exports from Bremen during the years 1885, 1886, and 1887.

Kind of goods.	1885.		1886.		1887.	
	Gross weight.	Value.	Gross weight.	Value.	Gross weight.	Value.
	Cwts.		*Cwts.*		*Cwts.*	
Articles of consumption	10,997,495	$37,938,903	9,934,544	$35,323,552	10,165,819	$38,120,553
Unmanufactured goods	13,412,856	51,144,888	13,240,499	48,369,485	14,894,419	59,371,967
Half-manufactured goods	374,484	4,034,557	369,753	4,763,973	469,659	3,896,979
Manufactured goods	186,132	10,906,439	233,763	12,775,551	228,202	11,996,824
Other industrial products	1,138,964	10,206,884	1,194,052	11,793,893	1,040,931	11,811,226
Precious metals	.....	488	117	3,717,608	55	981,781
Total	26,109,931	114,231,759	24,972,728	116,744,062	26,799,085	126,179,330

Statement showing the weight and value of the total imports to Bremen during the years 1885, 1886, and 1887.

Kind of goods.	1885.		1886.		1887.	
	Gross weight.	Value.	Gross weight.	Value.	Gross weight.	Value.
	Cwts.		*Cwts.*		*Cwts.*	
Articles of consumption	12,175,339	$39,698,519	10,881,252	$37,164,939	11,305,888	$39,038,384
Unmanufactured goods	21,072,556	50,552,923	22,342,487	47,784,089	27,321,742	62,700,460
Half-manufactured goods	455,026	4,375,859	507,875	5,188,878	669,729	4,482,919
Manufactured goods	216,164	12,032,945	266,534	13,971,050	265,726	13,270,688
Other industrial products	1,276,218	11,170,463	1,348,999	12,892,095	1,524,951	13,775,816
Precious metals	2	17,832	118	3,720,172	53	978,237
Total	35,195,305	117,848,541	35,347,265	120,721,223	41,087,189	134,246,504

Statement showing the weight and value of the total imports from the United States to Bremen during the years 1885, 1886, and 1887.

Kind of goods.	1885.		1886.		1887.	
	Gross weight.	Value.	Gross weight.	Value.	Gross weight.	Value.
	Cwts.		*Cwts.*		*Cwts.*	
Articles of consumption	1,697,592	$6,862,402	1,950,439	$7,557,480	1,629,436	$6,310,877
Unmanufactured goods	4,806,378	27,194,671	4,668,619	23,444,297	6,276,381	34,313,572
Half-manufactured goods	17,342	283,445	62	2,769	255	7,998
Manufactured goods	1,337	43,988	6,048	177,372	4,401	166,521
Other industrial products	50,397	495,129	42,629	458,647	46,172	478,672
Precious metals		6,188	117	3,715,823	33	942,355
Total	6,573,046	34,835,822	6,667,914	35,356,388	7,956,678	42,219,995

Statement showing the weight and value of the total exports from Bremen to the United States during the years 1885, 1886, and 1887.

Kind of goods.	1885.		1886.		1887.	
	Gross weight.	Value.	Gross weight.	Value.	Gross weight.	Value.
	Cwts.		*Cwts.*		*Cwts.*	
Articles of consumption	568,825	$1,865,787	511,402	$1,681,921	468,405	$1,382,139
Unmanufactured goods	854,047	2,553,202	776,135	3,320,458	815,175	3,418,285
Half-manufactured goods	74,499	589,195	28,120	936,575	91,214	583,270
Manufactured goods	156,074	10,101,247	190,239	11,312,489	178,223	9,837,374
Other industrial products	597,934	6,443,795	522,866	6,709,500	388,231	5,877,029
Precious metals				1,000	2	4,401
Total	2,251,379	21,553,226	2,028,762	23,961,943	1,941,250	21,102,498

Statement showing the value of the principal articles imported from the United States into Bremen during the years 1886 and 1887.

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Articles.	1886.	1887.
Cotton	$19,254,429	$29,610,509
Petroleum	2,944,675	3,433,285
Tobacco	5,442,790	3,226,680
Lard	493,950	1,244,404
Rye	80,295	49,330
Indian corn	892,227	570,557
Wheat	47,935	409,532
Clover seed	121,114	222,180
Furs	145,648	153,898
Lumber	150,606	220,373
Butter	35,804	5,239
Machinery	39,488	49,950
Flour	55,289	155,481
Oil-cakes	96,315	103,816
Drugs (prepared)	201,396	177,661
Cotton goods	152,212	68,952
Woolen and half woolen goods	19,504	69,003
Fancy goods	83,338	41,894
Whale-bones	33,605	110,516
Total	30,290,620	39,923,260

Statement showing the arrivals of vessels at the port of Bremen during the years 1885, 1886, and 1887.

Nationality.	1885.		1886.		1887.	
	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.
Bremen	833	720,766	831	752,705	945	836,039
Other German	1,404	149,795	1,293	166,809	1,254	171,791
Russian	18	5,753	11	4,360	14	6,285
Swedish	81	6,611	39	10,315	49	13,326
Norwegian	100	42,229	97	41,582	93	46,609
Danish	23	7,983	28	9,135	49	15,487
British	385	289,933	299	238,288	350	324,958
Dutch	145	15,922	117	15,984	123	13,207
Belgian	1	1,131	1	550	.....	.....
French	17	17,735	11	9,575	9	6,415
Spanish	10	6,679	7	5,618	7	5,818
Portuguese	1	173	1	419	.....	.....
Italian	17	14,052	6	4,493	1	1,019
Austrian	3	2,489	.....	.....	.....	.....
Grecian	3	2,981	3	3,430	2	2,359
North American	4	5,167	.....	.....	1	1,270
Total	2,979	1,289,399	2,744	1,263,263	2,897	1,434,583

Statement showing the departures of vessels from the port of Bremen during the years 1885, 1886, and 1887.

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Nationality.	1885.		1886.		1887.	
	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.
Bremen	816	709,216	838	765,540	933	821,179
Other German	1,594	154,315	1,465	174,771	1,411	173,679
Russian	11	5,578	11	4,360	14	6,285
Swedish	23	6,852	41	11,777	51	12,997
Norwegian	99	40,447	98	42,569	90	45,550
Danish	26	8,953	31	9,405	54	15,872
British	385	287,023	288	229,254	341	314,197
Dutch	153	16,563	129	18,605	125	12,597
Belgian	1	1,131	1	550	.....	.....
French	15	15,810	11	9,575	8	5,662
Spanish	9	6,050	8	6,244	8	6,182
Portuguese	1	173	1	419	.....	.....
Italian	16	11,992	8	6,161	1	1,019
Austrian	2	2,021	1	468	.....	.....
Grecian	3	2,981	2	2,434	2	2,359
North American	3	4,012	1	1,155	1	1,270
Total	3,157	1,272,517	2,934	1,283,287	3,039	1,428,848

Table showing the total emigration via Bremen during the year 1887, giving the nationality and destination of the emigrants.

Nationality.	Destination.						Total.
	United States.	Brazil.	Argentine Republic.	Africa.	East India.	Australia.	
Prussia	34,666	133	176	5	133	274	35,387
Bavaria	7,959	10	22	1	.....	9	8,001
Würtemburg	3,704	9	7	6	4	18	3,748
Baden	1,278	1	5	.....	3	3	1,290
Alsace	84	.....	1	.....	.....	2	87
Hesse	1,380	1	7	.....	.....	12	1,400
Saxony	1,291	18	16	2	6	30	1,363
Thuringia	857	1	2	.....	1	9	870
Anhalt, Lippe, and Waldeck	241	2	3	.....	.....	.....	246
Brunswick	140	2	2	.....	2	7	153
Oldenburg	920	4	7	.....	.....	12	943
Mecklenburg	504	.....	2	.....	2	4	512
Hamburg and Lübeck	207	.....	15	2	21	57	302
Bremen	856	13	14	3	18	15	919
Austria—Hungary	8,666	1	4	.....	.....	1	8,672
Austria—Bohemia	6,793	7	6	.....	.....	3	6,809
Austria—Other parts of Austria	3,924	47	18	.....	.....	10	3,999
Switzerland	150	3	1	.....	9	8	171
Russia (European)	6,533	.....	274	.....	6	46	6,859
Sweden and Norway	5,965	242	8	.....	1	71	5,387
Denmark	1,935	103	20	.....	3	64	2,125
Holland	20	2	7	.....	62	2	93
United States	9,583	2	13	.....	1	13	9,612
Various countries	188	7	45	1	46	115	402
Total	96,944	608	675	20	318	785	99,350
Or, from—							
Germany	54,087	194	279	19	190	452	55,221
Austria	19,383	55	28	.....	.....	14	19,480
Other countries	23,474	359	368	1	128	319	24,649

Table showing the total emigration via Bremen and destination of emigrants during the years 1885, 1886, and 1887.

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To—	1885.	1886.	1887.
New York	74,869	52,361	59,730
Baltimore	7,620	21,390	37,214
Galveston	583	434	.....
Brazil	216	892	608
La Plata States	685	991	675
Australia	.....	560	785
Asia and Africa	.....	120	338
Total	83,973	76,748	99,350

BREMEN, *October 10, 1888.*

ALBERT LOENING,
Consul.

MINES AND MINERAL RESOURCES OF INDIA.

[From Moral and Material Progress and Condition of India, 1886-'87.]

Out of 105 collieries there were 69 at work during the year. They employed 24,794 hands, as compared with 22,745 in the previous year, and the total output of coal rose from 1,294,221 tons to 1,388,487 tons. The total imports of coal from Europe and Australia during the year were 765,668 tons. The largest proportional increase took place at the Assam and Umeria coal-fields. The Nizam's Railway has now reached the Singareni coal-fields, in the Kistna valley, so that before long that coal will displace imported coal on the Hyderabad Railway and on the Madras railway system. Arrangements are being made for using coal from the Dandot mine on a part of the Punjab railway system, and investigations are being made into the three known coal-bearing areas of Upper Burmah. The Chindwin coal is already used to some extent on river steamers. Coal from the Assam mines is said to have come into the Calcutta market, and to fetch as much as 14 rupees per ton.

The companies for working petroleum on the Arakan coast have failed, and earth oil there is raised only by native workers on a limited scale. The Upper Burmah oil-field, near Yenangyoung, is being prospected, and the old oil-wells are being worked under the same system as under the Burmese rule. The oil is brought down to Rangoon to a refinery. It yields a comparatively small proportion of burning oil, and the industry is not at present flourishing. At the end of the year the Khatun oil-field in Baluchistan was still being investigated, and it is hoped that it may pay to burn this oil in locomotives on the Quetta Railway.

Iron is worked to a limited extent, after native methods, in all provinces and in many districts. The Barrakur Iron Works, which have, within a radius of five miles, excellent coal, iron, and lime, did not pay during the year, the stock of pig-iron rose from 677 tons to 3,683 tons, and there were few buyers. Everywhere English iron is in common use, and generally undersells the local product.

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Though copper ore is found in many parts of India, and was worked in old times, and though some little copper is still worked in Rajputana, nearly all the copper used in India comes now from Europe, China, and Australia.

Lead is found in great quantities; but the company formed to work the rich lead mines of Tenasserim was at a stand-still, and the only lead workings of which report was made during 1886–'87 were the mines in the Shan states, some of which were visited by an officer of the geological survey.

Tin is produced by Chinese miners in the south of the province of Tenasserim, but the Mergui mines are not nearly so productive as tin mines further down the Malay peninsula.

The gold sources of Mysore are being worked, and the industry has been a source of some revenue to the Mysore state; attempts are still being made to work gold in the Wynaad district of Madras. Altogether five mines are returned as having been worked in Mysore and the Madras presidency. Only one mining company is said to be in a flourishing condition, and the Mysore Government report the output of that company to be about 2,000 ounces of gold a month. Though extensive areas have been granted for gold mining in Mysore, "actual mining operations have been carried on only in a very small and insignificant proportion of the areas taken up, and in no case has the work been carried on by the applicants for the grant themselves." The Mysore Government has therefore declined to grant any more gold-mining leases unless the applicants guarantee to begin work, and to secure a minimum output of gold within a limited time. No gold sources, except river sand, yielding a very poor out-turn as compared with gold workings in continental India, have yet been discovered in Upper Burmah. The only silver mining of which report has been made is the extraction of silver from lead works in the Shan hills. Many silver mines are reported to exist in the Shan hills, but as yet only one or two sites on the western edge of the Shan states have been visited.

The Burmah ruby mines, the only source of first-class rubies in the world, are not yet scientifically worked. The mines were examined in 1888 by a mining expert sent out by the secretary of state, and they are reported to be very valuable. Rubies exist, and are worked from the layers of gravel and earth below the surface, and also from clefts in the magnesian limestone, which is the matrix for the gems. As yet very little revenue has been gained from these mines, which belong to the Government. The late king of Burmah used to get in some years as much as 15,000 Rx. from the mines. The working is, however, at present clumsy, unscientific, and wasteful. It is expected that when machinery and experience are brought to bear on the ruby sources a much larger output of rubies will be secured. By recent accounts it appears that about 110,000 Rx. worth of rubies were dispatched and insured by parcel post from Mandalay to Calcutta during the twelve months of 1887–'88. No satisfactory results were gained by prospectors for diamonds who visited a part of the Deccan which is reputed to have yielded diamonds several centuries ago.

CHANGES IN STEAM-SHIP LINES AT MARSEILLES.

Two changes have recently been made in the foreign steam-ship service of this port and a third is in contemplation, which collectively promise to exercise an important influence upon the commercial interests of Marseilles.

It was announced in a recent report of this series that the Compagnie Generale Transatlantique had decided to establish on the first of September a monthly line of steamers from Marseilles to Vera Cruz, touching at Havana and one of the Spanish Atlantic ports. It was further stated that for the equipment of this line the Compagnie Transatlantique had leased for five years, with privilege of purchase, the *Chateau Margaux* and *Chateau Yquem*, the two principal steamers of the Compagnie Bordelaise, which had previously made a regular service between Bordeaux and New York. But immediately after the new line was opened a combined petition from the shippers of Paris, Havre, and Bordeaux secured an important change in its port of departure. The effect of these protests was to persuade the company that Marseilles was too remote from Paris and the intermediate railway transit too expensive for the interests of shippers, and it was accordingly decided to retain the new line on the Atlantic coast. Its present schedule is as follows:

On the first of each month a steamship leaves Havre for Vera Cruz, touching at Bordeaux, Corunna, and Havana on the outward and return voyages. On the 21st of each month a steam-ship leaves from St. Nazaire (mouth of the Loire) for Vera Cruz, touching both ways at Santander and Havana.

This semi-monthly service is expected to further develop a valuable trade which has been already established between France and the West Indies and Mexico. The loss of the new line to Marseilles has caused sharp disappointment here, which the government has been petitioned to assuage by subsidizing a bi-monthly mail line between this port and the west coast of Africa, with special reference to the Congo country, toward which all the commercial nations of Europe are now looking with such eager expectation.

The project was first broached at Paris in the form of a proposition that the minister of the marine and colonies should treat directly for this service with the Compagnie des Chargeurs Reunis at Havre. But this company, if it obtained the contract, would naturally make the port of departure for the line at Havre. Against this Marseilles protests vigorously, urging that this is the nearest and natural port of entry for West African products; that Marseilles already imports by sailing vessel 50,000 tons annually of palm nuts, arachides, and other products of that country. It is, therefore, proposed that the new service shall be divided between Havre and Marseilles, with four departures per annum from each port or eight in all each year, instead of six as originally designed. That the new service will be soon established is almost certain, but how the dispute between Havre and Marseilles will be settled the event only can determine.

As a rule, however, it seems that in respect to governmental favors Marseilles is at a disadvantage compared with Havre, which, being the sea-port

of Paris, enjoys the favor and decisive influence of the capital. Marseilles is much more remote, and having already a steam-ship service which extends to Central and South America, Australia, Eastern Africa, India, China, and Japan, and employs more than 250 steamers, is treated as being powerful enough to take care of herself.

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The third and perhaps the most significant change for this port has been the loss of the tri-monthly service of the Netherlands Steam-ship Company between Holland and the Dutch East Indies. Since 1882 this company has sent three steamers per month from Amsterdam to Batavia, and the same number from Batavia to Amsterdam, all touching on their outward and return voyages at Marseilles. Not only did this give regular and excellent facilities for freight to and from the East Indies, but Marseilles was made the port of arrival and embarkation for an important class of travel. A large proportion of the cabin passengers, outward and homeward bound, embarked and landed here, and by twenty-four hours of railway travel slurred over the seven or eight days' passage by sea between Marseilles and Amsterdam. But Holland is more German than French, and in the politico-commercial mutations that have gone on during recent years, the sympathies of the Dutch have drifted toward Italy. It was announced a few days ago that the Mediterranean stopping place of the Netherlands service would be changed from Marseilles to Genoa.

Two reasons are assigned for this: The first is that the port charges at Marseilles, although identical for French and foreign vessels, are considered excessive. In the case of the Netherlands company they amount to 10 cents per ton on outward bound and 20 cents per ton on homeward bound steamers, and this charge is assessed at each visit upon the entire registered tonnage of the vessel without reference to the quantity of freight landed or taken on board at this port. Italy, on the other hand, assesses port dues in the form of a yearly tax or subscription, which, being paid by a steam-ship company, permits all the ships of that company to enter at will any Italian port without reference to tonnage or the amount of business done.

Moreover, pilotage at French ports is compulsory for all vessels clearing or arriving, whereas at Genoa it is optional. If a vessel employs a pilot there, it pays the established fee for services received, but the master may enter or leave that port without a pilot and at his own risk. The transfer of the Netherlands lines from Marseilles to Genoa was therefore suggested by motives of economy. Secondly, and this is probably the dominant point, the Italian Government offers a yearly subsidy of 300,000 francs for the transport of mails between Genoa and the East Indies. This transfer is regarded as an important point scored by Italy in its endeavor to seek new and remote outlets for its products which have been left without a market by the recent rupture of commercial relations with France and the prohibitory tariffs which now divide the two countries.—MARSEILLES, *October 15, 1888.*

FRANK H. MASON,
Consul.

RISE OF THE NILE FOR THE YEAR 1888.

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Calamity upon calamity befalls Egypt. The Nile flood of 1887 was disastrous, being so excessive as to destroy great quantities of growing crops, while it also laid waste villages, demolished and filled up shadoofs and sakheyebs, and drove many persons, with their animals, to the edges of the deserts, where numbers of the latter died or became so impoverished as to be useless for some time in the acquirements of agriculture. Private property was, in consequence, increased and public debt was augmented.

The Nile floqd of 1888, which has now entirely subsided, has proven another disaster, in a contrary sense to what befell the country in 1887. The highest point recorded by the nilometer at Rhoda, near Cairo, in 1887, was 25 pics 2 kirats, while in 1888 the greatest altitude to which the waters rose was 18 pics 14 kirats, a difference of 6 pics 12 kirats. A flood of 22 pics is regarded as quite advantageous to all sections of the country. Owing to the success of the Barrage, the great water elevator for filling the canals and ditches of the Delta, the state of agriculture in Lower Egypt is good. The well-guarded dykes of the branches of the Nile and of the great canals in the Delta protected Lower Egypt against the high water of 1887, while the Barrage, probably the most worthy monument to the wisdom and capacity of Mohammed Ali and his engineers, has saved the same region from present barrenness and desolation. Water has been and is being supplied to all the good lands of Lower Egypt in quantity sufficient to increase production in growing crops, and the lands have been properly prepared and planted in winter crops, while, because of the Barrage, those now growing, and those to be planted and grown before the season of another flood, may be safely calculated on as remunerative. In limited districts, even in the Delta, there has been and will be some scarcity of water, but on the whole the agriculturists of Lower Egypt are, in an Egyptian sense, blessed. Canalization, supported by the Barrage, has made the Delta quite independent of a low Nile, while good dykes and unceasing vigilance protect it against the dangers of a high Nile. The cultivatable area of Lower Egypt is 2,744,000 feddans, not more than one-seventieth of which are lost to agriculture because of the low Nile of this year. Still, complaint is made, and it will continue to be made, of an insufficient supply of water in many parts of the Delta. The loss to agriculture, therefore, may be placed at more than double the loss in cultivated area—say one-thirtieth or more in production.

There is no mammoth system for water elevation in Upper Egypt like the Barrage, and canalization is quite limited. There, when the great river fails in annual bounty, shadoofs and sakheyebs may be operated unceasingly through the days and nights of a long year, and yet vast areas go unwatered, and hence in this rainless land remain as barren as desert wastes. The cultivatable area of Upper Egypt is 2,220,000 feddans, equal to 2,331,000 acres,

and of this nearly one-seventh is lost to agriculture. Unwatered land is not subject to government taxation, and the direct loss to the State on account of the low Nile of this year will amount to a sum about equal to $1,750,000. The relation of area to population presents the appalling fact, that nearly one-tenth of the entire agricultural population of Egypt have no lands to work for one whole year. In Upper Egypt the unfortunates amount to nearly one-sixth of its entire population. Unless the Government give these poor beings employment on public works, which appears improbable, there must be wide-spread starvation. A portion of the unfortunates may eke out a bare subsistence by repairing to cultivated districts and quartering themselves upon the more fortunate, but relief so obtained will be little better than starvation. The agriculturists who are supplied with water will have little more than is necessary to keep body and soul together. No sort of relief is possible until another flood has watered the lands and thus enabled them to produce crops, which will be in the spring of 1890, provided there be not a low Nile in 1889.

Special information upon the subject of Nile floods may be interesting. The river begins to rise at Asswan about the middle of June, and at Cairo about the middle of July. The highest flood level is reached between the middle and the end of October. A fairly good flood is 22 pics 18 kirats, while 23 pics is really good, watering all the lands outside the river banks. Any increase over 23 pics is unnecessary and over 24 is dangerous. During the last sixty-three years there has been but one lower Nile than that of this year. In 1877 the flood rose to only 17 pics 3 kirats, and in consequence there were lost to agriculture then over 550,000 feddans of land.

A pic, as applied to the rise of the Nile, is a lineal measure of 0.54 meter, about 21¼ inches. The zero of the nilometer is 7 pics below the mean low water mark, and therefore the measure of the rise begins at that point. According to an hereditary usage, the measuring of the Nile waters having been transmitted from father to son in the same family since the eighth century, the Nile pic represents 0.54 meter, from 0 to 16. From 16 to 22 the pic is one-half of its real measure, 0.27 meter. Beyond 22 the pic again represents its absolute measure. To find the rise of the Nile in meters, 7 pics must first be deducted from the stated rise, and the remainder must then be reduced according to the measures above given. From the total result there must finally be deducted 0.18 meter. A kirat is the twenty-fourth part of a pic.

In 1877, as I have already stated, the flood was, by the rule of measurement above explained, 37 kirats (full measure) lower than in 1888. In 1833 the rise reached 18 pics 23 kirats, and tradition establishes the fact that great suffering ensued, but canalization was not then as good as now. In 1835, 1836, and 1837 there were successively low Niles, the highest water levels for those years being respectively 19 pics 15 kirats, 20 pics 17 kirats, and 19 pics 4 kirats. The result was the noted three years' famine, which almost wholly ruined Egypt, and yet at that time the country had no foreign debt and the modern bond curse was unknown.

The low Nile of this year gives rise to much speculation in regard to more complete facilities for irrigation. But little more is necessary for the Delta, and what may be necessary is simply more canalization. In Upper Egypt the case is different. There water elevation is necessary, and with it a perfect system of canals and ditches. What will be adopted it is impossible to predict. Riaz Pasha, Prime Minister, favors a number of very powerful pumping machines, while there are also strong advocates of the Lamotte proposal for damming the Nile at Silsileh. This would, however, be an enormous undertaking, and it would cost a huge sum of money, more by far than Egypt's financial condition could command. Filling the Raian basin, according to the Whitehouse proposition, is of possible accomplishment, and it will have due consideration.—CAIRO, EGYPT, *November 21, 1888.*

JOHN CARDWELL,
Agent and Consul-General.

FISHING PRIVILEGES OFF GREENLAND.

LEGATION OF DENMARK,
WASHINGTON, *November 12, 1888.*

Mr. SECRETARY OF STATE:

Referring to my note of the 22d of June last, I now have the honor to send you several copies of the royal order of March 18, 1776, and also of a decree bearing date of May 8, 1884, which has reference to the same matter, and which is but a new edition of another decree that was issued in 1850. You will see by these two documents that the Government of the King has sought to reserve to itself a monopoly of the Greenland trade, with the view, particularly, of protecting the Esquimaux from being injured by the too free use of intoxicating drinks, and by the diseases that would inevitably result from their unrestrained contact with seamen. This is the way in which Denmark makes use of the privilege which it has reserved to itself (by Articles II and VI of its treaty of April 26, 1826, with the United States, as also by similar stipulations in its treaties with other powers) of maintaining in force exceptional measures in its Arctic colonies, and foreigners have the less reason to complain of this exclusion, since it is enforced even in the case of Danish vessels.

As to fishing, the Government of the King can not admit that foreigners are at liberty to engage in it in Danish waters, that is to say, at the distance of a Danish mile from the coast, but outside of this limit Denmark raises no claim. The grand banks of Davis's Strait, which are visited by American fishermen, are 10 miles and more from the coast, so that there can be no collision of interests there. It would, however, seem proper for American navigators to be informed of the exact nature of the restrictions which I have just had the honor to explain, and I am instructed to request you, Mr. Secretary of State, to have the kindness to co-operate in this matter by caus-

ing to be issued, through the competent channels of your Government, an official notice to fishermen, containing the provisions of the decree of May 8, 1884, together with a specification of the line within which fishing is prohibited off the coast of Greenland. My Government would appreciate such a step on the part of the United States as a practical means for the avoidance of any misunderstanding in future, and I beg you to be pleased to inform me whether you share this view.

Be pleased to accept, Mr. Secretary of State, the assurances of my highest consideration.

W. SPONNECK.

Hon. T. F. BAYARD,
Secretary of State.

NOTICE TO MARINERS IN THE DAVIS STRAITS.

The Board of Directors of the Royal Greenland Trade make known:

(1) It is agreed by treaties between the Royal Danish Government and the United States of America, Great Britain, and other states that the west coast of Greenland, between latitude 60° and 73°, be closed for navigation of foreign ships and Danish ships, except by special permission of the Royal Danish Government by whom the monopoly of trade with Greenland is held.

(2) Pursuant to the laws in force, any ship navigating without permission on the west coast of Greenland may be seized, wherever met with, and the ship and goods be confiscated. Similar punishment may be applied, if any person or persons be found trading with the Greenlanders or Danish colonists from a ship lying in a port of Greenland or off the coast.

(3) Ship-masters compelled by shipwreck or other causes to seek port in Greenland shall not remain in port longer than necessary. Ship-masters shall also be responsible for their crews not remaining on shore without necessity, nor in any way trading with the natives, with whom all intercourse is altogether prohibited.

(4) The object of prohibiting the navigation of the west coast of Greenland and of maintaining the monopoly of trade is to protect the native population of Greenland. This population will be threatened with ruin if contagious diseases be brought into the country, or if spirituous liquors, or other similar articles be imported.

The board will, therefore, be obliged to demand that the order prohibiting the navigation of Greenland be in every way respected, in case the crew of any ship should not strictly abstain from all intercourse with the native population. — COPENHAGEN, *May 8, 1884.*

CUSTOMS DUES AT LEVUKA, FIJI.

By a recent revision of the tariff of customs dues in this colony the duties to be collected on the following articles are fixed as follows, viz: Kerosene, 150° fire test and over, 9*d.* per gallon; kerosene, other tests, 1*s.* 6*d.* per gallon; oils, other kinds except medicinal, 9*d.* per gallon; soap, 1*d.* per pound; drapery, hardware, and iron-mongery, 12½ per cent. ad valorem.— LEVUKA, FIJI, *October 22, 1888.*

ANDREWS A. ST. JOHN,
Commercial Agent.

JEHO MINES.

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In June, 1887, Mr. John A. Church, a distinguished American mining engineer, examined the mines at Ku Shan Tzu and Yen Tung Shan. These mines are situated in the Jêho district, at a distance of about 45 miles and 57 miles, respectively, to the northwestward of Ping Chuan Chow.

In his report then made Mr. Church stated that these mines were worthy of being tested carefully. He recommended the introduction of machinery for that purpose. Hé stated that a yield of 20 taels per ton might be expected. As the result of that report Mr. Church was directed by the Viceroy Hi Hung Chang to proceed with his examination. Machinery was procured, and, in November of 1887, Mr. Church arrived at the Ku Shan Tzu mines and commenced work there. He found that water covered the bottom of the mines and stood about 320 feet from the surface. The openings were narrow and tortuous. He proceeded to make commodious openings and to erect boilers. The old passages were stopped up with stones, and a month's steady work was required to open them.

He finally reached the bottom, which was 200 feet below the level, where the water had stood for twenty years. He had pumped and dug down about 110 feet in all. He found the vein about 5 feet thick, and samples showed that it contained 18 ounces of silver per ton.

These samples were carefully selected from the average ore. At the lowest point a small vein about 2 inches thick yielded 90 ounces per ton. The true value of this ore is, therefore, 120 ounces per ton. Mr. Church, in June, 1888, made an elaborate report to the viceroy. He found that a large quantity of ore had been left on the walls because the metal occurred in such small particles that the natives could not utilize it. At least 2,000 tons of this rock is left, and will yield 15 ounces a ton. At the date of this report the hoisting machinery and mining pumps had not arrived, but were daily expected and have since arrived. It is said that the best ore known in the mine at the time it was flooded lies under the rock which is not yet moved. He has broken down 200 or 300 tons of ore which lies under this mass of rock. A mill has been ordered which will enable him to work up the ore as fast as it is broken, and will keep the mine open.

Chinese methods have proved unsuccessful owing to the immense labor required and the opportunities afforded for theft. Under this system he was not able to get more than one-fourth of the value.

Thieving has much annoyed him, and can be overcome only by the use of machinery. Mr. Church reports favorably on this mine. He thinks that it will pay; that he will be enabled to take out 15 tons of ore a day when the machinery is fairly at work; that their quantity will pay expenses at both mines; that after nine months' working the quantity will be increased to 20 or 25 tons a day; that the mine at Yen Tung Shan can accomplish the same results; and that the treatment of both mines, with smelting works

at Ku Shan Tzu only, will give a net profit of 10,000 taels a month. Water, unfortunately, is not plenteous at these mines. But still, Mr. Church thinks that after a year's work 50, or even 60, tons of ore a day may be procured. He is satisfied that the Ku Shan Tzu vein will yield 20 or 30 tons a day.

His information about Yen Tung Shan is not so complete, but the vein there is more extensive than the other. He recommends that the work be proceeded with on such a scale as to produce at least 30 tons a day at the two places. With energetic action a mill can be in operation in January, 1889. It is understood that the viceroy has supplied the necessary funds, and that the work will be proceeded with.

There is no geological map of the mining district in question in existence. I am enabled to furnish a general description of the locality of the Ku Shan Tzu mines, as follows: They are situated at an elevation of 2,500 feet above the sea-level, on the flanks of a hill, which, with others, bound the sides of an open, gently ascending valley, and rise to the height of 2,900 feet. The formation in which the mines are situated is a hard grayish white limestone, which is bounded on the south and east by granite. The valley which is the approach to the mines contains a stream of water, which is utilized by the miners in the washing of galena from the waste, which was mined and thrown to one side in former years.

In June, 1887, Professor J. A. Church made some assays of samples, of which the following are copies:

Assays made of ore of Ku Shan Tzu and Yen Tung Shan mines.

Number of assay.	Ku Shan Tzu.		Yen Tung Shan.	
	Lead.	Silver.	Lead.	Silver.
	Catties per picul.	*Taels per picul.*	*Catties per picul.*	*Taels per picul.*
1	.....	13.0	.....	5.1
2	1.3	19⅓	.....	5⅓
3	1.3	5.4	.....	4.1
4	10.0	10.0	.....	34.4
5	.5	6.2	28.2	13.2
6	17.9	17.2	14.0	36.4
7	22.4	8.5	18.5	16.0
8	1.5	11.9	9.0	32.3
9	8¼	6.1	11.6	27.5
10	32.4	22.4	48.0	14.9
11	.....	9.3	.....	3.7
12	10.5	10.0	.....	3.5
13	9.8	10.0	.....	4.5
14	5.2	8.9	.....	4.7
15	.....	16.8	.....	1.3
16	.....	12.2	.....	.....
17	.....	11.9	.....	.....
18	.....	8.5	.....	.....
19	.....	19.0	.....	.....
20	.....	13.0	.....	.....

Assays of Ku Shan Tzu ores.

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Number of assay.	Ounces of silver per 2,000 lbs.	Per cent. of lead.	Name of mine.
1	250.5	.....	Ta Tsao Mine.
2	365.25	1.3	Do.
3	102.0	1.3	Do.
4	189.0	10.0	Shang Ma Chin Mine.
5	117.0	.55	Ta Tsao Mine.
6	322.5	17.9	Hsia Tu Tsao Mine.
7	158.25	22.9	Ta Tsao Mine.
8	224.0	1.45	Do.
9	115.5	8.25	Do.
10	420.0	32.4	Hsia Tu Tsao Mine.
11	175.5	.....	Ta Tsao Mine.
12	176.25	10.45	Do.
13	189.0	9.8	Do.
14	168.0	5.18	Do.
15	*328.5 †304.5	.....	Shang Ma Chin Mine.
16	229.5	.....	Leadings from gulch.
17	*165.0 †283.5	.....	Ta Tsao Mine.
18	*158.25 †163.5	.....	Te Ho Pa Mine.
19	360.0	.....	Washings from gulch.
20	*205.0 †385.0	.....	Do.

*Coarse. †Fine.

Assays of Yen Tung Shan ores.

Number of assay.	Ounces of silver per 2,000 lbs.	Per cent. of lead.	Name of mine.
1	*96.0	.....	Shang Hsirn Tzu Mine.
2	*99.75	.....	Do.
3	*77.25	.....	Do.
4	645.75	.....	Do.
5	249.0	28.2	Tung Ta hiang Mine.
6	693.0	14.06	Hsirn hirn Kang Mine.
7	300.0	18.50	Hin Tzu Chang Mine.
8	606.75	9.05	Hsia Hsirn Tzu Mine.
9	516.0	11.6	Do.
10	285.0	47.9	Hsia Yang Po Mine.
11	†70.5	.....	Hsia Yin Po Mine.
12	†66.75	.....	
13	†84.0	.....	
14	†88.5	.....	
15	†24.75	.....	

*Poor ore. †Odd samples of poor ore.

PEKING, *October 16, 1888.* CHARLES DENBY.

PEKING CUSTOMS DUTIES.

As statistical matter that may be of interest, I abstract herein the annual report of the superintendent of customs at the Ch'unghua gate, Peking.

The amount collected during the past year has fallen short of the total amount required. Trade was injuriously affected by the fluctuations in the exchange between copper cash and silver, which enhanced prices.

The bulk of the produce reaching Peking comes from the south, and since the Yellow River disaster this traffic has been seriously diminished. The roads have also been bad. To these causes must be added the fact that the law does not permit any additional levy to be made on foreign goods.

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The total receipts of the office this year were 173,171 taels, or 141,793 taels less than the total fixed and supplementary assessments. He reports, also, the amount of duty collected on native opium. In former years, he states, the duty on native and foreign opium was levied on the same scale, and a special return of the receipts was made to the board of revenue. In February, 1887, however, a communication was received from the board transmitting a copy of the new regulations under which duty and lekin on foreign opium was to be levied simultaneously. In that document it was stated that foreign opium, whether in whole chests or balls, was, after the payment of the two-fold levy of lekin and duty, to be subjected to no further charge provided it bore the customs marks and seals. Thus native opium only is to be accounted for and the quantity thereof is inconsiderable. At present there is a brisk consumption of the foreign article, with a corresponding decrease in the use of the native drug. But it seems to me probable that the decrease is due to smuggling. During the past year only 530 taels were received as duty on the native drug. — PEKING, *October 20, 1888.*

CHARLES DENBY.

COMMERCIAL AND POLITICAL CONDITION OF THE MARSHALL ISLANDS.

The commercial interests of the Marshall Islands are in the hands of the Jaluit Gesellschaft, a German firm organized in Hamburg; Messrs. A. Crawford & Co., an American firm, of San Francisco, Cal.; and Messrs. Henderson & McFarlane, of Auckland, New Zealand.

The first two named companies have their head-quarters at Jaluit, the port of entry, while the latter named are located at an island named Mejuro, some 130 miles to the eastward of Jaluit. All of the aforesaid firms extend their operations to the neighboring groups of islands, viz: Kingsmills, Caroline, Ellice, and Pleasant Islands.

The product of the islands consists chiefly of copra. Shells, red and pink coral, and sponge are found in limited quantities. The natives make a great number of mats, hats, and fans from the fiber of the cocoa-nut and other native trees. The yearly yield of copra is about 3,000,000 pounds, the greatest portion of which is shipped to Europe. The price paid therefor to natives is 1 cent per pound; to traders, 1¾ cents; and about 3 to 3¾ cents per pound is procured for it in Europe.

A good demand exists for American goods, especially provisions, cutlery, hardware, thread, denim, and clothing, and a good price is obtainable therefor. Fire-arms and ammunition of all kinds are prohibited from sale, hence none are dealt in. Beer is the only beverage permitted to be sold to the na-

tives, and but a very little of that is used by them, as they are very temperate. Tobacco is in great demand, the kind being known as "Niggerhead."

The currency of the islands, until recently, consisted of Chilian and Peruvian coin, but under a late regulation of the German authorities German coin has been declared the legal-tender, and the German firm who imported the Chilian and Peruvian coin here in large quantities and passed it for the same value as American coin, now refuse to accept it except at a discount of 37½ per cent. No offer was made by them to redeem it, but without notice of even one week, they declared it depreciated to that extent. The natives are naturally very much dissatisfied, and indeed it is a matter that they feel ought to be corrected by the Government, which has agreed to protect them, and for which they pay a yearly tax. The natives have a decided preference for American coin and will part with their produce when paid in such currency, when otherwise it could not be purchased at all.

The imports from the United States (San Francisco) to these islands during 1888 amounted to $38,000. The export of copra by the firm of A. Crawford & Co. alone, during the same period amounted to 1,555,616 pounds valued at $35,000.

Since the 15th day of October, 1885, these islands have been under the protectorate of the German Government, and later, on the 14th day of April, 1888, Pleasant Island was declared to be under the same protectorate. They are governed by a high commissioner, who at divers intervals publishes laws or regulations for their government. These laws, up to the present time, consist of harbor regulations, the prohibiting of selling or giving to natives arms, ammunition, spirituous liquors, credit in any form, the prohibiting of purchase or rental of lands, the levying of a tax or license of $250 per trip upon trading vessels not belonging to a firm located within the islands, who may enter for trading purposes, and the levying of taxes and licenses.

Taxes are in the nature of poll-tax—$5 per year for each foreigner. Licenses are imposed upon each trader amounting to $10 per annum. Commercial firms doing a business of $125,000 or more per year have to pay a yearly license of $1,500. Those doing a business less than the foregoing amount have to pay a yearly sum of $750. The natives have to pay a yearly tax of $2,000; this is payable in copra to the Jaluit Gesellschaft at the rate of 1 cent per pound, a total of 200,000 pounds. The natives would much prefer paying in money, but they are not accorded that privilege, and the Gesellschaft reaps the benefit of the copra.

The regulation prohibiting the leasing of lands, if inforced, will interfere with the firms of A. Crawford & Co. and Henderson & McFarlane to such an extent as to almost, if not quite, ruin their business in the group, for the reason that in the gathering of copra it is absolutely necessary to place traders upon all the cocoa-nut bearing islands, to trade with and gather copra from the natives. A tract of land sufficiently large for the necessary use of such traders has been rented from year to year, and, according to the present regulations, these leases can not be renewed, and the inevitable result will be the enforced retirement of all firms other than Germans.

The local representative of Messrs. A. Crawford & Co. filed with the high commissioner a protest against its enforcement and calling attention to the injury its enforcement would cause. The high commissioner assured him that he would at once bring it to the attention of his Government, and also that he felt convinced that it would be modified, as he would certainly recommend its modification.

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The judiciary court here is composed of the high commissioner and two assessors.

A petition was lately circulated to obtain signatures petitioning the German Government to declare a protectorate over the Kingsmill group. In the Kingsmill group it was circulated by one of the captains in the employ of the Jaluit Gesellschaft, and was pretty extensively signed by the patrons of that firm. The Kingsmills are much more productive than the Marshalls, and a much larger volume of business is done there, especially by American vessels.—JALUIT, MARSHALL ISLANDS, *July 18, 1888.*

E. M. MORGAN,
Consular Agent.

AGRICULTURE AND MINERAL RESOURCES OF INDIA.

[From Moral and Material Progress and Condition of India, 1886-'87.]

In Ajmere the rain-fall of 1886 was below the average, water in some of the tanks failed, and the out-turn of the crops was deficient. There was in Coorg a considerable increase in the area under food grains, and also in the area under coffee; the unusually heavy rain-fall of May caused a reduction in the yield of coffee. The cultivation of cinchona has not been further extended; 49,744 pounds of bark were sent to market, yielding, on the average, 6*d.* per ton.

The rain-fall in Berar was heavy and unevenly distributed; millets and oil seeds suffered; the breadth under these crops was considerably reduced; the area under cotton and wheat was larger than ever. Cotton, in the year 1886–'87, occupied 32 per cent. of the cultivated area of Berar. The working of the two Government farms yielded no important results. Six Berar scholars are studying veterinary surgery in Bombay, in order that they may be employed in combating cattle disease. The number of stallions kept for covering Berar ponies was increased, and an attempt was made to introduce mule breeding.

The year 1886–'87 was a season of good harvests and of comparative agricultural prosperity over nearly the whole of Bengal. The out-turn of both autumn and spring crops was, on the whole, above the average, though in some places the winter harvests suffered from inundations. The prices of rice and pulse ruled lower than had been known for the past ten years. The price of wheat, which is grown mainly in Behar, remained steady by reason of the demand for exportation. The permanent establishment of an agricultural department in Bengal was sanctioned during the year. Much of

the directors' attention was devoted to the settlements, and to the record of rights now being prosecuted under the tenancy act and on Government estates in different parts of Bengal. A careful inquiry by two Bengali officers was instituted into the agricultural economy of the Dacca and Mymensing districts, and it is intended to extend the investigation gradually over all the districts of Bengal. Under the direction of a Bengali officer, trained at the Cirencester Agricultural College, systematic effort was made to eradicate silk-worm disease by examining and selecting all seed (eggs) used for rearing worms. Some success was achieved; the silk-worm rearers, mostly ignorant folk, accepted Mr. Mukerji's teaching and guidance more readily than they had done the instructions given by European experts. Mr. Mukerji is now in Europe studying the science of silk rearing and silk producing on the methods most approved in the silk districts of France and Italy. The importance of this undertaking to the silk districts of Lower Bengal may be judged from the fact that the export of raw silk from Calcutta has, in great part, owing to disease among silk-worms, fallen from 1,082,198 pounds in 1848 to 24,093 pounds in 1886.

Some few bulls of improved breed were introduced into herds on Government estates or on the lands of large zamindars. Some tons of bone manure were bought by ryots, who had previously tried small quantities that had been distributed gratis. Useful agricultural experiments were made on the Dumraon estate, in Behar, where the Maharaja holds a yearly agricultural show.

The Calcutta botanical gardens completed the hundredth year of its establishment. Considerable additions were made to the herbarium, and 46,104 plants, as well as 2,532 packets of seed, were distributed from the gardens.

Few agricultural statistics are yet available for Bengal. Of the chief staple exports by sea from Bengal, jute increased by 3 per cent., rice fell by 6 per cent., tea rose by 15 per cent., wheat rose by 67 per cent., as compared with the previous year. Most of the tea, cotton, and wheat was produced beyond the limits of the province of Bengal.

The rain-fall of 1886 was full and reasonable in the Brahmaputra valley, but was excessive in the Surma valley, especially in the Sylhet district, where the rice crop was the shortest known for many years, and prices ruled high for a short time. The potato crop of the hill districts was short, and the price of potatoes, owing to the extension of this crop, was about one-third of the price ruling in 1883–'84. The result of 708 crop-testing experiments showed the average yield of autumn (or early) rice to be 1,207 pounds of paddy per acre, and the average of 341 experiments gave the yield of winter (late) rice at 1,512 pounds of paddy per acre. Attempts to extend the cultivation of *eri* silk have not succeeded; the tea planters who took up the experiment have not carried it through; further attempts are being made by Assamese land-holders. Specimens of *muga* silk sent to England have been found useless for ordinary manufacturing purposes.

The year was marked in the northwest provinces and Oude by an unusually heavy rain-fall. Damage was done to the autumn crops, and the spring harvests suffered from unseasonable showers in March. But there was no general or severe failure of crops, and the year was one of fair prosperity. The business of revising and inspecting the yearly village papers and record of right is progressing well; there is a school for training village accountants (patwaris) in every district but two; the average daily attendance of patwaris was 1,328; during the year 2,000 patwaris passed in all subjects, and 7,460 patwaris have still to pass the tests out of a total strength of 30,878. The experimental farms at Cawnpore and Meerut were not financially successful; but to the latter agriculturists resorted freely at all seasons, and a native land-holder organized a farm on the same lines in the neighborhood. Something was done in the matter of distributing white wheat seed and of supplying bulls of selected breeds to land-holders who applied and were ready to pay. Eighteen sets of apparatus for boring wells are now in use. Where trained workmen were employed and carefully supervised, these appliances have been found valuable aids to economical and successful well sinking.

In the central provinces the rain-fall of the year was scanty and irregular. Rice and linseed crops gave less than half the ordinary yield; the wheat and millet crops were fair, and the cotton crop was better than the average. Prices of food ruled high. There was some distress, but land-owners undertook many works of improvement, and there was little need for the Government to open relief works. The year was marked by a great falling off in the area under linseed and a large increase in the breadth sown with cotton. Exports of produce from the central provinces varied with the character of the season, rice and linseed exports decreased 50 per cent., wheat exports increased 8 per cent., and cotton exports increased 70 per cent. over the figures of the preceding year. The results of the Nagpore experimental farm were not satisfactory, but the adjoining sewage farm was successfully worked by native cultivators. Careful experiments were made on 594 holdings to test the average yield of staple crops. The result tended to show that the yield per acre of wheat, millet, and some other crops might be in excess of the estimates previously made, but further experiments must be prosecuted over a series of years before such a conclusion can be fully accepted. There was little cattle disease during the year. No steps were taken to improve the breed of cattle.

The rain-fall in Lower Burmah was full and seasonable, and the rice harvest was good. The rice exports amounted to 1,078,841 tons, within 1,000 tons of the export of 1882, the largest ever known. One-eighth of the total exports went to Upper Burmah, where the crops had been short. The exports of rice from Burmah to Europe were 709,957 tons, and to the Straits or China 243,707. The rice exports from Saigaon and Bangkok to Europe were 9,000 and 39,000 tons, respectively. By reason of the fall in the gold value of

silver, exporters were able to pay for rice a price which was very remunerative to the producers. Eighty-five per cent. of the cultivated area in Lower Burmah was under rice, and as yet no other staple crop has been cultivated on a large scale. Oil seeds, maize, other millets, cotton, tobacco, and sugar-cane are gradually extending, and the area under fruit orchards is large. Attempts to introduce jute, indigo, and wheat have so far failed. The comparatively dry belt of country in Upper Burmah grows grain, cotton, millets, and some little wheat, and the area under these crops will increase largely as the country settles down and means of communication are improved. The Government experimental farm has been given up. The American expert, who had been working to improve the tobacco culture of Burmah, has not been re-engaged. In some of the chief tobacco tracts the ryots have been convinced that by selecting the seed and by curing the leaf in the shade instead of in the sun a product is secured which fetches two or three times as high a price as Burmese tobacco cured after the old methods. The attempt by Messrs. Thompson and Mylne, of Shahabad, to form a settlement of agricultural immigrants from Behar, on the rice lands of Pegu, has not yet succeeded. Cattle disease was severe in three districts. Twenty-six Burmans, trained as veterinary assistants, were employed in coping with cattle disease; some of them did good service. The small Arab stallions kept for covering pony mares continue to be appreciated by the people.

The rain-fall of the year was full and favorable to agricultural operations in Madras. Some harm was done by floods in the north, and by insufficient rain in the south. Prices of food grains ruled low; fodder and pasture were abundant, and the condition of cattle was good. The director of agriculture and his staff are continuing the examination of agricultural circumstances in each district; this year the Karnool district was completed. The connection of the Government with the Saidapet farm ceased during the year. An assortment of selected agricultural implements were carried through five districts and exhibited at work in all the important towns and villages. These exhibitions were attended everywhere by large numbers of people, and 384 improved plows as well as 310 sugar-mills were bought by ryots. Experiments were made with English barley and wheat in the Nilgiri district; the former succeeded, the latter failed. Something was done towards improving the breed of cattle and ponies. Out of the agricultural grant of the year 54 per cent. was spent in combating cattle disease.

The rain-fall in Bombay was full. In Sind the inundations of the Indus were timely, and the season was favorable to agriculture over the whole presidency, except a part of Gujerat. The autumn crop area was larger and the spring crop area smaller than usual. Prices of food were lower than usual in the Deccan and higher in Gujerat. There was a considerable increase in the breadth under cotton, the chief export staple of the Bombay presidency. The business of regularly inspecting the village agricultural papers was carefully done. The Government farms in Khandesh and Sind worked satisfactorily; the area of the Bhadgaon farm not devoted to ex-

periments yielded a substantial profit after paying all expenses. The agricultural pamphlet issued by a native association, who manage an experimental farm in the Kaira district, has an increasing circulation, and the association held a successful agricultural show on their farm. Distribution was made of foreign wheat and cotton seed with successful results. The veterinary college, recently established at Bombay, is educating scholars who are sent thither by district boards to study the treatment of cattle disease. The returns of agricultural stock show an increase in all districts except Sattara, where cattle disease was specially severe. The number of horse stallions kept in the district was increased from 89 to 122, and the number of donkey stallions from 23 to 32. Mule breeding is confined mainly to Sind and Cutch. The entries of horses, mares, and foals increased at six cattle shows and decreased only at one show. All these shows are reported to be successful, and considerable improvement was observed in the animals competing, especially in the brood mares and the young stock.

The agricultural departments of the several provinces now publish forecasts, month by month, of the areas under and the prospects of harvest of the more important staples, namely, wheat, oil seeds, Burmah rice, cotton, and jute.

These forecasts are believed to be of use to the mercantile community. They give the area under these important crops far earlier than they could be ascertained by any private agency.

The area under tea during the last three years has been:

Provinces.	Acres.		
	1885.	1886.	1887.
Assam	189,852	197,510	203,903
Bengal	55,698	63,430	69,745
Other provinces	22,260	22,985	22,766
Total	267,810	283,925	296,414

The cultivation continues to extend in the two chief tea-growing provinces. The yield per acre in good tea districts is between 300 and 400 pounds of average tea. The season was favorable to the tea crop in Assam and Bengal. The total tea yield of 1886–'87 was estimated at about 82,000,000 pounds, while the export of tea from Calcutta in 1886 was 80,500,000 pounds. According to British returns the importations of Indian tea into the United Kingdom during 1887 were 97,750,000 pounds, as compared with 15,000,000 pounds in the year 1871. The importations of China tea into Great Britain during 1887 were 118,750,000 pounds. Reports from China attribute the decline of the China tea trade with England to the fact that China tea is not so carefully cultivated or picked, that China tea is not so well packed as Indian tea. The China article, moreover, is burdened with an export duty of about 35 per cent. ad valorem, whereas Indian tea pays no export duty.

The area under coffee was, approximately:

	Acres.
Coorg	80,570
Madras	53,094
Mysore	137,657
Travancore, Cochin, etc	4,505
Total	275,826

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The decrease in the coffee area, which has been apparent for some years, continued during 1886–'87, except in Coorg, where certain upland plantations were last year measured and assessed for the first time. The average yield of coffee was about 150 pounds per acre, giving a total yield of about 416,000 hundred-weight; the coffee imports of the year were 21,000 hundred-weight; and the exports were 370,000 hundred-weight. The yield of the crop of 1886–'87 was below the average.

The area under cinchona consists of 3,052 acres of Government plantation in Sikkim and the Nilgiri hills and 11,417 acres of private plantations. The yield of the Sikkim plantation was 225,631 pounds of dry bark. This was worked up into 6,790 pounds of febrifuge or quinine, of which 5,885 were consumed by Government hospitals and dispensaries, or by the public. The Nilgiri harvest of 124,334 pounds dry bark was mostly sold in open market. The yield of private plantations is returned at 626,146 pounds; the price of bark and of quinine was very low by reason of the large export of bark from Ceylon. The Sikkim plantations more than covered their expenses by the yield of febrifuge and quinine, and the benefit to the people of India from the cheapness of the drug was great. The Sikkim plantations are being replanted with the more valuable species of cinchona, and no more of the succirubra variety is being planted.

The last year showed a decrease in the cotton area, but the figures for 1885–'86 show some recovery, thus:

Provinces.	Acres under cotton cultivation.		
	1883–'84.	1884–'85.	1885–'86.
Berar	2,086,923	1,959,402	1,846,470
Bombay and Sind	2,968,306	2,375,000	2,225,000
Madras	1,770,290	1,567,148	1,605,206
Bombay native states	2,163,538	2,475,000	2,700,000
Northwest provinces	1,635,497	1,573,695	1,587,346
Oude	74,947	94,115	72,030
Punjab	802,534	792,996	1,035,614
Central provinces	680,390	579,604	595,962
Nizam's dominions	1,149,730	910,610	953,170
Mysore	31,928	21,324	29,128
Lower Burmah	10,454	9,346	9,142
Assam	38,699	38,815	42,131
Rajpootana	.....	.....	536,444
Central India	.....	.....	295,382
Total	13,352,536	12,397,055	13,533,025

The breadth under cotton in Bombay and Berar continues to decrease, but there is a large increase in the area returned under native states. The cotton yield was, on the whole, fairly good for the year, to which the foregoing figures pertain. The export of raw cotton from India was:

Years.	Cwts.
1884–'85	13,286,367
1885–'86	10,777,204
1886–'87	13,468,429

The ascertained and estimated area under wheat and the estimated outturn up to April, 1888, is given at:

Provinces.	Supposed average area under wheat.	Supposed normal out-turn.	Area cultivated with wheat in 1887–'88.	Estimated out-turn in 1888.
	Acres.	*Tons.*	*Acres.*	*Tons.*
Punjab	6,765,000	2,014,671	6,179,800	1,668,396
Northwest provinces and Oude	5,081,500	1,893,150	4,952,354	1,907,000
Central provinces	3,967,000	845,870	4,601,683	1,138,800
Bombay	2,871,000	733,961	3,010,954	862,475
Berar	855,000	128,230	1,052,918	154,727
Bengal (estimated)	1,267,516	357,613	1,085,212	306,000
Rajpootana (estimated)	1,984,554	417,208	1,514,505	365,799
Central India (estimated)	3,500,000	500,000	2,884,765	508,408
Nizam's territory (estimated)	1,016,743	65,328	1,067,022	102,828
Mysore (estimated)	17,000	2,019	5,669	752
Cashmere (estimated)	500,000	133,333	500,000	133,333
Total	27,825,313	7,091,383	26,854,882	7,148,628

Thus, though the area under wheat has shrunk somewhat, a larger outturn was estimated than in the previous year. The wheat exports from India during the past six years have been:

Year.	Tons.	Year.	Tons.
1882–'83	707,220	1885–'86	1,055,025
1883–'84	1,047,824	1886–'87	1,113,167
1884–'85	792,714	1887–'88	676,908

The decrease in the past year was due mainly to the short crop in the Punjab and central provinces, to the need for replenishing stocks, to the lowness of prices in Europe, and to the large imports into western Europe from other sources. Owing to the bad wheat crops of 1888 in western and central Europe it is expected that Indian wheat exports will recover. In London contracts have already been made for the delivery of Indian wheat of the 1889 crop, which is as yet unsown, at prices reaching 35*s.* a quarter, an advance of more than 10 per cent. on prices ruling last year.

The Congress of Peru has passed a law by which persons, not citizens of the Republic, are permitted to become owners of merchant vessels within the jurisdiction of Peru, and to hoist the national flag over them. — CALLAO, *October 27, 1888.*

H. M. BRENT,
Consul.

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REPORT OF FRENCH EXHIBITION FOR DECORTICATING AND CLEANING RAMIE.

The French Government announced that a prize of 30,000 francs would be given to the exhibitor of the machine which was best adapted to the decortication of ramie. The latter part of August was named as the date of the exhibition and trial of these machines. The cool and damp weather which prevailed throughout the season so retarded the growth of the ramie that the meeting was postponed for a month, in order to obtain stalks suitable for testing these machines. Whether it was owing to this postponement, or some other cause, this exhibition, which at one time gave promise of solving the problem of economical decortication and extraction of resinous matter from the fiber, gave but little aid in obtaining these results.

There were nineteen entries of machines for decortication and ten different processes for treatment of the fiber on the list of exhibits. Three decorticating machines only took part in the competition. The principle upon which the two French machines worked was similar to that of the two Berthet machines (formerly described in my reports), the reversion of the stalks in the former being accomplished by hand, while in the latter it is automatically done.

The machine termed "Landsheer," which took the first prize of 600 francs, and the "Armand," to which was awarded 400 francs, both claimed to do their work in stalks both green and dry. The former machine costs from 1,500 to 2,000 francs, the latter about 1,500 francs.

The third machine, to which was awarded a recognition in the way of a nominal prize of 200 francs, was presented by the American Fiber Company, of New York. It is simply just to say that a machine had been hastily prepared to exhibit the system adopted by the company in decorticating the ramie, while insufficient time prevented the completion of details which would render it capable of successfully competing in the quality and quantity of its work with machines which had been studied and improved upon for a long time. The principle exemplified by this machine is that of splitting the stalk in two pieces, and as the ribbon is stripped from each piece the stalk is broken into short lengths and dropped. The ribbon is continuous, and the waste much less than by any other process. With some alterations and adjustments, which apparently are easily attainable, this machine would become very popular. The machine can be simplified and bids fair to carry off the prize at the French International Exhibition next year. The machine did its work better on the green than the dry stalks.

It was impossible to determine the amount of work which either of these machines could accomplish, as the stock of ramie was badly assorted and in poor condition. Enough could be gathered from this exhibition to confirm the belief that the difficulties are great, if not insuperable, in decorti-

cating the ramie in the dry state. The character of the decortication is made evident in the subsequent processes of spinning and combing by the quantity of waste.

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The effort required to separate the ribbon from the wood in the dry state is far greater than in the green state when the bark peels readily, assisted by the gummy substance surrounding the stalk, which in the dry state acts like a cement.

When the attempt to separate the fiber from the woody pith is attempted in the dry state, even if none of the fiber should adhere to the wood, the force required to separate is necessarily so great that the continuity of the fiber is less perfect and the waste more considerable when subjected to the subsequent processes necessary to utilize it.

The only chemical process exhibited did not cleanse the fiber as well as the Berthet process, formerly described in my report, and which is both chemical and mechanical, and does its work well and cheaply. The fabrics of ramie on exhibition proved its adaptability to various uses, great strength, and brilliant luster, as well as great facility for taking any colors. — ROUEN, FRANCE, *November 5, 1888.*

CHAS. P. WILLIAMS,
Consul.

PREEMPTION OF PUBLIC LANDS IN GUATEMALA.

[Transmitted by Minister Hall.]

ARTICLE 1. In granting a public instrument of ownership of public lands or of commons on any of the frontiers of the Republic, it is indispensable that the applicant shall be in the enjoyment of his rights as a Guatemalan citizen, which shall be shown in the respective *expediente*, with the certificate of the depository of the civil register. The lands which the Government shall concede on the frontiers for the establishment of colonies are excepted from the effects of this article.

ART. 2. The transfer of dominion, by whatever title, of immovable property, mentioned in the foregoing article, shall not be made without its appearing in respective public instrument that the new owner is a Guatemalan.

ART. 3. Every concession of public lands, whether for breeding cattle or for any other object, gratuitous or by purchase, shall not exceed 30 caballerias to one person, whether such concession shall be made at once, or in others simultaneously or successively.

ART. 4. Those persons who by former titles hold surpluses of lands which by the fiscal laws were preemptive, must, within the term of six months, verify their preemptions, otherwise they shall lose the right of preference accorded to them by the respective code.

ART. 5. Without prejudice to the right of individuals to preempt the surpluses of public land in their possession, by whatever title, the Government

may, of itself, authorize an engineer to remeasure the conceded lands, where it is presumed such excesses exist, whether of public lands or others, in accordance with article 636 of the fiscal code.

ART. 6. Every person holding public lands or commons, whose title may not be in conformity with the laws in force in regard to the possession and prescription of national lands, is bound to take steps and to obtain in due form the title thereto; should this not be done within the period of six months following the promulgation of this law he shall lose all right relative to his possession.

ART. 7. Decree No. 224, of the 26th October, 1878, is hereby revoked. In future those who solicit lands for breeding cattle will be restricted to the ordinary prescriptions of the fiscal code.

ART. 8. The present decree shall have effect from the date of its publication.

THE TEA TRADE OF AMOY.

I can report much more activity in the tea market at this port than prevailed in the trade one year ago. Prices in New York are much more satisfactory.

Up to the 24th ultimo 1,314,286 pounds more of Formosa oolongs had been exported from Amoy to the United States than at the same date last year, and 162,294 pounds less of Amoy oolongs. Of new teas of the present season 8,120,821 pounds have been exported to the United States to date of September 24.

It is estimated that the season's crop of Amoy oolongs will be 40,000 half-chests less than that of last year, and it is currently anticipated that the present year's supply of Formosa oolongs will be from 15,000 to 20,000 half-chests short of the previous year's crop.

The quality of the Formosa crop is claimed to be a full average, while the grade of Amoy oolongs this year is said to be rather more vile than that of previous years, when it was quite bad enough.

Nothing can be said in commendation of Amoy oolong at any time. But little of it is exported elsewhere than to the United States, where, I surmise, it is largely mixed with teas of better quality, thereby toning the one down and the other up in quality, and so a tea that is too miserably bad to venture into the markets of the world is pushed into the United States and imposed upon consumers there in order to satisfy the greed of exporters here and of importers in the United States.

The statute against the importation of bad and adulterated teas into the United States is quite sufficient, and if carefully enforced at the ports of entry at home would justify the exclusion of a very considerable percentage of the Amoy oolongs which are annually imported into the United States and imposed upon American consumers.—AMOY, *October 1, 1888.*

WM. S. CROWELL,
Consul.

THE PIONEER RAILWAY OF CHINA.

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The Tien-Tsin and Tongshan Railway, the first to receive the sanction of the Government, has been opened to traffic, and mixed trains for passengers and freight are running daily between the terminal points. The road was officially inspected on the 9th instant by the viceroy, Li Hung Chang, accompanied by his staff and a number of prominent Chinese officials, who were received along the line with distinguished military and civic honors. The road has been constructed by the China Tien-Tsin Railway Company, composed entirely of Chinese officials, who employed as chief engineer Mr. C. W. Kinder, the English engineer of the Kaiping Engineering and Mining Company. It is 81 miles in length, and the track, for the most part, is laid on embankments 8 feet high, for protection against inundations. The bridges are of iron and steel and of the latest designs, one of the most elegant of which was built in America. In the selection of designs for locomotives, passenger and freight cars the American patents have been extensively adopted. A locomotive of great power and elegance of finish was procured from the factory of Messrs. Grant & Co., and some of the car wheels from Messrs. Lobdell & Co., of Wilmington, Del. Much larger orders undoubtedly would have been given to American manufacturers but for the increased cost of workmanship and materials.

The cost of the railway is officially stated by the directors to be 8,000 taels per mile, or less than $9,000, which is regarded as the cheapest road in the world, considering the number of bridges and the length of the embankments. Since the opening of the road the receipts from passengers and freight traffic have constantly increased, and it is believed that the enterprise will be remunerative to the stockholders, notwithstanding the low tariff of charges for freight and passengers. The fare for first-class passengers has been fixed at less than 1½ cents per mile, and that for second class less than one-half cent per mile. These exceedingly low fares are making the road very popular with all classes of the Chinese people.

It is reported that the viceroy, upon returning from inspecting the road, expressed himself as being much pleased with its construction and all its appointments. As His Excellency has made the construction of railways a study for many years past, and has been a warm advocate for their adoption in China, his report to the Throne, should it be made public upon this the first experiment, will be read with much interest.

I am credibly informed that notwithstanding the great opposition at Peking to the extension of the road to Tungchow, 15 miles from the capital, the viceroy confidently expects to obtain the imperial sanction in time to commence work early next year.—TIEN-TSIN, *October 20, 1888.*

E. J. SMITHERS,
Consul.

CIDER-MAKING IN ENGLAND.

The principal apples from which our cider is made are, as far as can be ascertained, as follows: Pocket, Kingston bitter, Beckington gray, Brown's apple, butter-box, bitter-sweet, late blown, bell founder, Teignharvey, red streak, sweet Hereford, sour Hereford, and many unnamed naturals produced from shoots from the pips not grafted and of a mild sour flavor. The fruit as it falls from the trees is collected in heaps in the orchards and allowed to remain some time until the end of November, when it is taken to the press, which is an ordinary screw press, and usually laid out upon reed. The juice is collected in casks and allowed to ferment with the bungs out. When it is desired to make sweet cider for bottling the cider is frequently racked into casks in which a sulphur match has been burnt as in wine-making. Different makers have different methods of checking the fermentation so as to retain the sweetness and all are rather mysterious as regards their treatment. The cider is usually ready for bottling in the May following and may be retained in the wood for a year or more without getting hard. Champagne bottles are generally used for bottling cider, and it becomes sparkling in the course of a few weeks.

Statistics of production and consumption I can not obtain. The rougher sorts are consumed principally in this district. The finer are forwarded to different parts of this and to other countries.— PLYMOUTH, *October 29, 1888.*

THOS. W. FOX,
Consul.

PRESENT CONDITION OF THE WOOLEN TRADE.

The cool weather of the last fifteen days has had a salutary influence upon the retail woolen trade, and brought the buyers in nearer contact with the manufacturers. Orders for summer goods are brisk at Elbeuf, Louviers, and Reims. At Roubaix cloths are in demand, but the price is too low, considering the cost of the raw material. In tissues of combed wool it is the same thing—the transactions are limited, although the demand is great; neither buyer nor seller wish to concede. For the last fifteen days but few transactions in combed wool have taken place, as holders daily advance their prices. The waste is in demand. Fashionable combed woolen goods hold their own. Yarn has been advanced in price from 10 to 15 centimes, yet still is not in harmony with the price of wool.

In the month of August last Belgium imported 68,490 kilograms of yarn; of cloths, cassimeres, and similar fabrics to the amount of 282,700 francs; of coatings and other heavy goods to the amount of 178,420 francs; and of light woolen goods to the amount of 1,622,810 francs. The exports from Belgium during the same month consisted of 979,760 kilograms of yarn; 147,750 kilograms of cloth, cassimere, etc.; 25,470 kilograms of heavy cloth; and 58,200 kilograms of light dress goods.

The two chambers of Cape Town adopted a resolution in July last to encourage the woolen trade, by offering an annual prize of £5,000, granted

for three years, to the first colonial manufactory which shall produce goods manufactured from native wool to the amount at least of 375,000 francs. An important factory is about to be established to take advantage of the liberal offer. — ROUEN, FRANCE, *November 8, 1888.*

CHAS. P. WILLIAMS,
Consul.

EXPORTS FROM BRISTOL TO THE UNITED STATES.

Following is a statement showing the declared exports from the consular district of Bristol to the United States during the four quarters of the year ending September 30, 1888:

Articles.	Quarter ending —				Total.
	December 31, 1887.	March 31, 1888.	June 30, 1888.	September 30, 1888.	
Bath bricks	2,370	2,014	1,348	1,299	$7,031
Books	2,423	5,840	2,185	3,000	13,448
Chemicals	6,239	8,477	5,555	11,003	31,274
Cocoa and chocolate	22,035	19,204	14,782	14,920	70,941
Fuller's earth	1,947	.....	.....	1,591	3,538
Glue	5,509	3,869	3,893	2,384	15,655
Iron and steel (old)	4,301	.....	.....	9,747	14,048
Lead fumes	13,018	5,353	.....	1,578	19,943
Machinery and iron work	10,960	19,618	.....	5,101	35,679
Matting	.....	.....	.....	1,559	1,559
Paintings	241,573	.....	.....	.....	241,573
Paper stock	1,290	874	.....	3,951	6,115
Pickles	2,998	2,290	8,395	.....	13,683
Sausage casings	2,413	2,214	.....	3,761	8,388
Tin plates	19,120	9,554	1,772	24,782	55,228
Twines, netting, cordage, etc	1,406	719	.....	820	2,945
Type-metal	35,261	14,779	12,510	10,187	72,737
Wines	.....	.....	.....	766	766
Wool	.....	.....	.....	12,570	12,570
Woolen cloths	16,837	44,537	29,454	41,213	132,041
Yarns (hemp carpet)	7,177	9,767	10,464	.....	27,408
Sundries	1,863	5,312	7,373	2,543	17,091
Total	398,740	154,421	97,731	152,769	803,661
Total preceding year	123,065	130,860	123,423	155,925	533,273
Increase	.....	.....	.....	.....	270,388

BRISTOL, *November 15, 1888.*

LORIN A. LATHROP,
Consul.

REDUCTION OF IMPORT DUTY ON WHEAT AND WHEAT FLOUR.

By decree issued on the 3d instant, a still further reduction of duty on wheat flour to 18 reis a kilogram has been made. The same decree fixes the duty on all foreign wheat at 10 reis a kilogram, a diminution of 5 reis a kilogram from the duty fixed by decree dated July 19, 1888. — LISBON, *November 5, 1888.*

E. P. C. LEWIS,
Consul-General.

HAMBURG'S ANNEXATION TO THE GERMAN CUSTOMS UNION.

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On the 15th instant Hamburg's and Bremen's annexation to the German Customs Union took place by direction of the chancellor and the respective senates. Through this important event Article XXXIII of the Imperial constitution has become a reality. Germany constitutes one customs and commercial union, surrounded by a common customs boundary. This is the realization of a demand which has long been before the people with the purpose in view of creating a closer alliance between the Hanseatic towns and the rest of Germany.

Hamburg was convinced that the establishing of the Empire would require of her all the great sacrifices which she has since been compelled to make; that she would have to renounce her special rights for the benefit of the Empire at large, reserving for herself only such few of them as were absolutely necessary for her future development, and it was in this spirit of resignation that the step was made.

The cost of all the necessary changes, additions, innovations, etc., was, of course, enormous, and the amount voted by the Government as an aid (40,000,000 marks) comparatively small. Nevertheless the Hamburgers hardly grumbled, and have made up the deficiency out of their own pockets. To-day, hardly a week after the annexation, nearly everything connected therewith is operating smoothly, and were it not for an army of customs officers, who have been stationed here since the 11th instant and whom one constantly meets on the streets, it would hardly be noticeable that so important a change had taken place in the city.

The inclosed map of Hamburg clearly shows the boundaries of the free port (*freihafen*), which was reserved for the convenient handling of transit goods and for storing dutiable merchandise prior to shipment. On condition that this concession be made, did Hamburg declare its willingness to be annexed.* The arrangements with regard to the free port in Bremen are similar.

However, so much has already been written on this subject in general that I shall confine myself to submitting, inclosed, a translation of the senate's decree respecting the payment of arrears of duties, the official tariff,† and a declaration blank used for declaring the dutiable articles on hand on the day of annexation. Every head of a household was compelled to fill out one of these blanks and to certify to its correctness, and on the 14th instant, the day before the annexation, five thousand men were employed in collecting them. This work was accomplished in the remarkably short space of time of two hours. The following two days the customs officers visited most of the warehouses, shops, etc., but very few private dwellings, for the purpose of ascertaining whether the declarations had been properly made. In very few instances was any irregularity detected and on the 17th instant, at 12 a. m., free traffic was permitted.

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* Map filed in United States Hydrographic Office. † Not reprinted.

It was universally remarked that the revision was a very lenient one and obvious that the customs officers had received instructions to be indulgent and polite. This latter circumstance particularly tended to allay the indignation of the classes, who generally leaned to the opinion that a great wrong was being done to them through the annexation. There is no doubt that at first the increased cost of living will be keenly felt, but as the population of Hamburg soon becomes accustomed to innovations, it is to be expected that within three or four months they will have almost forgotten their old privileges and feel quite contented.

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On the 29th of this month the emperor is expected here for the purpose of inspecting the new quays, warehouses, sheds, docks, harbors, canals, etc. He will on this occasion also lay the stone, which is to be considered the last one in the work of annexation.—HAMBURG, *October 20, 1888.*

CHARLES H. BURKE,
Vice and Acting Consul.

DECREE OF THE SENATE RESPECTING THE PAYMENT OF ARREARS OF DUTIES ON HAMBURG'S ANNEXATION TO THE CUSTOMS UNION.

General instructions.

1. With the day of annexation, all goods in the annexed territory will be subjected to duties according to the annexed tariff, marked A.

2. Arrears of duties will not be collected on:

First. Goods which on application of the owner have been transfe.red before the day of annexation to a bonded warehouse, or for which a running account has been opened with the customs authorities.

Second. Dutiable goods, provided they have been used and been in possession of the owner, with the exception of empty mineral oil barrels.

Third. Goods manufactured or produced in bond, or within the territory to be annexed of Prussia, Oldenburg, or Bremen; only such treatment of goods is considered manufacture as would class them in a different position in the tariff.

The following artices are not included in the above: Barley, malt, timber as per No. 13, chapters 2 and 3 of the tariff, planed goods and veneered goods, beer, brandy of all kinds, and all liquors containing alcohol; margarine, roasted coffee, cocoa, sweets, biscuits, starch, flour of wheat and rye, rice flour, salt, tobacco, sugar, oil preparations, and mineral lubricating oil.

Fourth. Private stock, provided the whole quantity of one owner does not exceed the following quantities:

(*a*) Beer, brandy, vinegar, each 15 liters.

(*b*) Other wines than champagne, 50 liters, equal to 70 bottles.

(*c*) Tobacco and manufactures of tobacco, 3 kilograms.

(*d*) Manufactured goods of all kinds, in all 15 kilograms.

(*e*) Other goods of one class, with the exception of those to be taxed per piece and excepting champagne, 15 kilograms.

Goods which belong to the same number of the tariff are regarded as goods of one class. Subdivisions A to X of No. 25 of the tariff are, however, recorded each as a separate class.

Owners of larger quantities than the above have no claim for deductions of the above amount, and must pay duty on the whole.

3. All goods subject to duties according to paragraphs 1 and 2 must be declared by the owner. Only such goods under the supervision of the customs authorities on the day of annexation are exempt from declaration.

4. If anybody holds goods on commission or for account of a third person, he is allowed to present instead of his own declaration a declaration from the real owner, provided the latter resides in the Hamburg or adjacent Prussian territory. For such declarations the real owner is in every case responsible, and the commissioner also, inasmuch as he might have known the incorrectness or imperfection of the statement. In case of not being able to obtain a declaration the goods will be taken charge of by the customs authorities.

5. For the declarations of goods forms as per annexed copy will be used and will be issued by the authorities. [Here follow minute instructions as to the filling out of these declarations.]

6. [Contains instructions for conveniently arranging into groups differents kinds of goods.]

7. The declarations must be filled out, signed, and ready to be called for from 12 o'clock at noon on the day before the annexation. Those persons not having received declaration forms must apply for the same at the offices for the collection of arrears of duties, and deliver same at the time named at the respective office of their district.

8. A commission for the collection of arrears of duties will be placed for the supervision of the various district collecting offices. Revisions will be made under the supervision of this commission by special officers appointed for this purpose. If considered necessary, the latter will be accompanied by commercial and industrial experts.

9. All stocks of goods must be shown to the parties making the revision, and, if required, all rooms, if used or not for depositing goods, must be opened. The owner is obliged to give the necessary assistance, and to have implements for weighing, measuring, and so forth, in readiness. Everybody using or authorized to use a locality for depositing goods must see that somebody is present therein, no matter what kind of goods this locality may contain, from the day of annexation until the establishment of free traffic, from 8 a. m. to 10 p. m. This party must be able to give the examining officer all necessary information.

10. If the owner of the goods does not reveal his obligations, the officer in charge of the revision may temporarily seal all the rooms used for depositing goods. The same measure will be adopted in all cases where the exactness and completeness of the declaration appears doubtful.

11. The person in possession of the goods is obliged to pay the amount of arrears in case of his having produced a declaration of the owner as per paragraph 4, both are responsible for payments. If delay of payment is allowed to the owner, the responsibility of the commissioner ceases. On application, the person subject to payment of arrears on goods declared in due form may be allowed a delay in order to transfer his goods into the bonded or free port or to a bonded warehouse, or until he can open a running account with the customs authorities.

12. The amount of arrears will be calculated and fixed by the commission. These amounts must be paid within eight days to the office designated in the notice of such payments of arrears. The collection of overdue amounts will be carried on in the same manner as is observed at present in the collection of overdue taxes. On application, delays may be granted for amounts not exceeding 100 marks; however, if necessary, for larger amounts a guaranty will be required.

13. Complaints against the decisions of the commissioners must be handed in within a fortnight after the decision.

14. The time of the commencement of free traffic with the interior will be made public in due course. Meanwhile no change of revenue duties on the former boundary will take place until this date. Traffic in the annexed territory will suffer a restriction, inasmuch as goods subject to arrears of duties can not be by penalty of confiscation transferred from depositories named in the declaration without special permission of the commissioners. The revising officers are also permitted to seal stocks, and thus prevent owners from disposing of them until revision is finished.

15. The following are exempt from the restrictions mentioned in the foregoing paragraph:

(*a*) Retail business, on condition that each quantity of an article subject to duty sold is entered into a separate register, to be shown to the revising officer if requested.

(*b*) The consumption in the household of the owner of dutiable goods.

PENALTIES.

16. Whoever endeavors to defraud the "nachsteur" is guilty of a misdemeanor according to paragraph 135 of the law, and will be punished accordingly.

17. The following will be considered fraud:

First. If a person does not declare at the proper time or the proper quality and quantity of goods, the declaration of which is called for by this decree, thus causing a diminution in the arrears of duties.

Second. If a commissioner presents a declaration of the owner, the incorrectness or incompleteness of which was known to him or could not have escaped his attention.

Third. If an owner permits a declaration filled out by him to be presented by a commissioner, in which dutiable goods are declared in a quality or quantity which would cause a diminution in the arrears of duties.

Fourth. If a person, without permission, disposes of goods placed under seal of the authorities.

[Paragraphs 18 to 21 contain further minor and less important penalties.]

Given in the meeting of the Senate, Hamburg, September 17, 1888.

[Editorial in London Times, October 13, 1888.]

Next Monday will bring with it a change of no small importance to the trading interests of Hamburg. On that day the city will make a final surrender of its old historical privilege as a free port, and will thenceforth be included, by its own consent, in the general German Zollverein. The full result of the change it is impossible at present to determine, but it seems certain that it will be far from inconsiderable to Hamburg, to Germany, and to the outside world. Hamburg is now, and has been for some time past, one of the most important commercial centers of Europe. With the exception of London, Liverpool, and Glasgow, it ranks second to none, and there can be no question that its prosperity has been very largely due to the exceptional position which it has enjoyed as a free port, and which it will soon cease to enjoy. The interesting letter from a correspondent which we publish to-day on "The Last of the German Free Ports" gives a complete account of the reasons which have led to the change, and of the main consequences looked for from it. It is one which our own merchants and manufacturers will not regard with unconcern, for it is in some part a blow aimed at the commercial supremacy of Great Britain. That it will take effect in the manner intended is not equally certain. The hope is that it will henceforth be German goods to the exclusion of British which will form the staple exports from Hamburg in its new character as a constituent member of the Zollverein. That the trade of the city will suffer in value or in volume is a contingency which does not seem to have been taken into account. The assumption is that there will be no such alteration as this, and that all that will happen will be that Hamburg will seek its supplies for export in the German market, which will be open to it, rather than in any foreign market whose goods will be subject to the new and untried disadvantage of customs dues. Germany is thus to benefit at the loss of the outside world, and, not least, at the loss of England.

The process thus to be hurried on has been in progress of late years. The trade of Great Britain with Hamburg has increased considerably on the whole, but it has been falling off in some departments, and it has not kept pace with the general commercial growth of the old free port. The total value of the cotton goods imported into Hamburg, for use or for distribution, is about half as much again as it was fifteen years ago, but not more than one-twentieth part of the increase has been sent out from this country. In woolen goods during the same period the value of the imports into Hamburg from Great Britain has fallen to about one-half of its old amount. Generally speaking, the imports by sea have not grown at anything like the same rate as those by land. In other words, Hamburg has been looking more and more to Germany and less by comparison to any other country. From Monday next the more complete transformation may be thought likely to date. Instead of a free port, open for the re-

ception of goods from the cheapest and most convenient markets, Hamburg will offer to the foreign trader nothing more than the bonded warehouses common to all ports. Germany will be in a privileged position and will have the sole enjoyment of it. On German goods there will be no customs duties imposed. They and they only will come in free, and it is reasonable to assume that they will be in larger demand than ever for distribution abroad, as well as for home use. But the foreign consumer, who looks to Hamburg for his supplies, will pay no regard whatever to the politico-commercial reasons which have drawn Hamburg into the Zollverein. He will care for quality and price, and he will care for nothing else. If Germany can give him what he needs on better terms than Great Britain can, it is from Germany that he will prefer to purchase, and Hamburg will be undisturbed in its old place as a go-between. But if the contrary is the case, and as far as the contrary is the case, the course of commerce will, in all probability, shift, and Hamburg will become less and less a distributing center of its superior and more high-priced goods. In the fight for neutral markets that country which offers the best bargains is certain in the end to win. Trade may continue for awhile to move in its accustomed channels — for awhile, but not for long. The main point, therefore, is not whether Hamburg is to be a free port or a member of the German Zollverein, but whether the German or the English manufacturer is to win his way to a command of the neutral markets by the only course open to either of them — by sending goods better and cheaper than those of his trade rival. If the English manufacturer fails on these points, he must expect to be beaten, of course. If he succeeds in them, he may look with comparative unconcern to any changes in the relation between the Zollverein and the old free port.

To Hamburg the change which Monday is to bring can, in no event, be a matter of indifference. For its result to the export trade of Hamburg we must wait some time. Its result to the citizens as consumers will be immediately seen and felt. Hamburg as a free port has supplied its own wants at the lowest possible rate. Its half million or so of inhabitants have been clothed and fed very much more cheaply than they will be. Their vile sherry and their viler cigars they have probably not retained for home consumption. Foreign countries, civilized and uncivilized, have had the benefit of these, while the Hamburg citizens have been revelling on the untaxed products of lands more bountiful than their own. Monday's step they will take with their eyes open. In the Hamburg Senate the inclusion of the free port in the Zollverein was resolved upon under a belief that it would increase the prosperity of the city. In the House of Burgesses there was no such illusion. The members of it were asked to sacrifice their feelings and their personal interests for the good of the Fatherland, and this they agreed to do by 106 votes to 46. The arrangement was made in 1881, but 1888 was fixed as the year at which it was to begin to take effect. We trust that the Hamburgers will not have cause presently to repent of their patriotic resolve. The gain to Germany is certain. It will acquire one new market at least. The gain to Hamburg is something less than problematical.

[London Times, October 13, 1888.]

An event of some moment, not only in the history of German unity but in the commerce of the world, will take place at Hamburg on Monday next. After some nine years preparation, that city together with the two free ports on the Weser, known as Geestemunde and Brake, will be included in the general customs union of Germany (Zollverein), twenty-two years after Lübeck took a similar step, and a few days before Bremen follows its example. Henceforth these three great Hanse towns and free cities will have little to distinguish them from the rest of Germany. They have all three a great and glorious history, and still retain in their constitutions some remnants of their independence of former days. The event which is about to take place, and which is to be celebrated shortly after by a visit from the Emperor, is one that carries us back to those early days of European commerce, when the league of trading cities known as Hansa was so powerful that it could make war with kings; when it had its branches in many centers from London to Novgorod, and from Bergen to Cologne; when Lübeck was one of the greatest cities in Europe, whose merchants lived in palaces and whose traders and ships visited the remotest corners of the then known world. All three cities have

had a checkered history. They have had to fight hard to retain their wealth and their power against princes on the one hand, and against the proletariat on the other; for in their own way they have always been essentially oligarchical and exclusive, and even at the present day their constitutions can hardly be regarded as liberal. Hamburg especially has had many a struggle against conquerors eager to grasp its wealth; but in spite of all its vicissitudes it has been able to hold its own, and has ended by being not only the greatest of the three Hanse towns, but next to London, Liverpool, and Glasgow, the greatest commercial city in Europe. It is no wonder, then, that Hamburg should be jealous of the curtailment of any of these privileges which distinguished her and Bremen from all other cities of the Empire. In 1868 their claim to remain free ports was conceded, and was ratified in the Imperial constitution of April 14, 1871, though the privilege was, in the case of Hamburg, restricted to the city and port, and withdrawn from the rest of the State, which extends to the mouth of the Elbe and embraces about 160 square miles. The area of the free-port territory of Hamburg is only 28 square miles, with a population of about 475,000. It was arranged that the two Hanse towns should remain outside the common customs boundary until they themselves should demand admission.

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When, in the spring of 1880, the proposal to include Hamburg in the customs union was first publicly discussed, it naturally met with much opposition in the city itself. And no wonder. Not only would an old and honorable distinction be abolished, but the merchants naturally dreaded that their business would be seriously affected, while the citizens realized that living would become considerably more expensive. It was feared that it would cease to be the great international distributing center which it had been for so long. As a free port Hamburg could receive into its warehouses, and reship, free of duty, goods imported from England and other countries at a cheaper rate than could be done with similar goods produced in Germany. Its own large population could afford to supply their wants from foreign markets free of all protective duties. The 7,000 ships that entered the port annually with the needs of themselves and their crews represented an enormous sum. These and many other aspects of the proposed change were discussed in the press, in the Senate, in the House of Burgesses, in public meetings, and among the citizens in their every-day intercourse. There was necessarily much intercourse between Hamburg and the Imperial Chancellerie at Berlin, both in the way of correspondence and deputations. It must be said that, notwithstanding the pressure which seems to have been employed, the Imperial Chancellor treated the free city with great tenderness and consideration, carrying out the desire of the Kaiser (William I.) that the wishes and interests of Hamburg should be considered, in so far as these did not conflict with the interests of the Empire.

At last, on May 25, 1881, a draft of union was agreed upon in which the whole of the city and port of Hamburg should be included in the Zollverein, except the north Elbe alongside the city, with its quays, and a limited area in their immediate neighborhood, as well as the islands in the Elbe opposite. This area was subsequently somewhat extended; but in effect it includes only so much as will afford room for shipping to moor in the river, and give space for the erection of bonded warehouses, such as exist at every great port, in which goods can be stored and reshipped free of duty. On June 3, 1881, the Senate passed a resolution that the treaty should be agreed to, stating its conviction that the inclusion of the free ports in the Zollverein would not only be beneficial for the Empire, most of whose foreign commerce passed through them, but also would increase the prosperity of the cities themselves. On the 15th of June the resolution of the Senate was discussed in the House of Burgesses; and the seven hours' sitting (from 7 p. m. to 2 a. m.) is one that will be remembered by all who were present, and was a noteworthy event in the history of the city. The speech made by Dr. Petersen, the Commissioner for the Senate, was impressive and even touching. He reminded the Assembly that their one thousand years' history testified to the fact that the Hamburgers were ever an active, practical, patriotic people, who took life earnestly, caring not only for business and family, but for the common weal. Every good Hamburger has

always been ready to sacrifice his feelings and his personal interests for the good of the Fatherland. Let all of them, he urged, even those who could not do it heartily, vote for the measure in the sure and certain conviction that the "Father City" would flourish and prosper and increase through the skill, the energy, and, above all, the public spirit of its citizens. Hamburg would still remain the emporium, for the wide world, of the German Fatherland, to which she would be more closely united than ever. After much other speaking the proposal of the Senate was agreed to, and Hamburg was included in the Zollverein by 106 votes against 46.

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After this it only remained to arrange the details necessary for the carrying out of the conclusion which had been come to, and which it was decided should take effect in October, 1888. Vast preparations had to be made. Whole blocks of houses had to be cleared away, in order to make room for the buildings required as stores and warehouses under the new régime. Canals had to be widened, new quays made, and many other changes effected. The result is that during the last six years Hamburg has been undergoing transformation; and in place of the mean and often miserable buildings, which formerly existed near the harbor, magnificent blocks have been raised, which, of their kind, are not surpassed in any port of the world. But all this has cost money, and before the alterations are all completed something like £6,000,000 will have been spent, of which the Imperial treasury contributes £2,000,000.

Thus, after Monday next, Hamburg and Bremen will be like any other great mercantile ports. They will have all accommodation for transit trade, and for storage. The difference, however, between the old state of things and the new will not be so very great. Shipping and other dues have, of course, been necessarily levied all along, for the maintenance of the Elbe navigation involves a great outlay. As an emporium, and for transit purposes, Hamburg will afford the same facilities as ever, while merchandise intended for the interior will have to pay duty at the port itself, instead of at the boundaries of the city, as before. The new arrangement will do away with the necessity of a customs cordon all round the city, while the many foreign, especially English, merchants, who have for generations made Hamburg their head-quarters, may find some means of continuing their business with as much success as before, especially as far as that business is connected with the trade.

Hamburg has long been half an English city, and Napoleon in his wrath treated all the Hanse towns as if they had been English colonies. Moreover the direct trade between Hamburg and England attains a very high figure. Of the total imports by sea into Hamburg, 40 per cent. comes from the United Kingdom, and nearly one-half of the tonnage of the shipping which enters its port is under the English flag. Thus in 1886 the total imports into Hamburg amounted to 2,130,000,000 marks, of which 990,000,000 marks was by sea, and of this 395,000,000 marks came from Great Britain. In the same year the total number of vessels which entered the port was 6,913 of 3,791,992 tons; of those 2,365 vessels of 16,661,180 tons bore the British flag. It is feared, and in some quarters hoped, that the new arrangement may diminish the importance of England in the trade of Hamburg, or at least that the import of English industrial products may decrease in favor of the employment of corresponding products of German origin. Indeed, there are not wanting signs that this change has already been in progress for some time, and that goods of German origin are driving those of England from the Hamburg market. One of the principal organs of German foreign commerce seeks to show this by figures. Take, for example, England's great staple, cotton. The import of English cotton goods into Hamburg has in recent years markedly decreased, while corresponding German goods have taken their place. Thus in 1872 the value of the total import of cotton goods into Hamburg was 43,232,630 marks, of which 18,132,440 marks came from England. In 1887 the total was 62,959,440 marks, of which only 19,025,580 marks came from England. The decrease has been even more marked in the woolen and mixed goods. The import of these in 1872 was valued at 101,102,790 marks, and of this England's share amounted to 39,550,000 marks; whereas in 1887 the proportion was 101,802,260 marks to 18,084,590 marks. The decrease is equally marked in the case of linen and linen goods, and in the case of stone-ware is very striking. In 1872 the total im-

port of stone-ware was valued at 3,335,120 marks, of which 839,200 marks was English; in 1887 the proportion was 16,383,060 to 584,530 marks. In other respects the change is quite as striking, showing that in recent years Hamburg has become more and more an outlet for products of German origin, and in time the friends of German trade expect some of England's staples may be driven from the market of the world and their place taken by others sent out from Hamburg as a German emporium. This seems to receive some support from another comparison of figures. The imports by sea into Hamburg have risen from an average value in 1871–'75 of 981,457,000 marks to 1,108,607,000 marks in 1887, or a total increase of 13 per cent.; whereas the imports into Hamburg by land or by river navigation rose in the same period from 688,981,380 marks to 1,177,148,810 marks, or an increase of 70.85 per cent. We need have no hesitation in admitting that this result is largely due to the development of German industry and commerce, though it should be remembered that Hamburg has increasingly become a transit port for much of ex-German Europe, including Austria and Russia. The figures do not seem to us to forebode very deadly results to English commerce and manufacturers, if only English merchants and English manufacturers know what are their true interests. Meantime we rejoice to see the steady prosperity of our neighbors, and especially of a city that has all along been much indebted to English enterprise. The increase of imports from the land side into Hamburg has been accompanied by a corresponding increase in the exports from that city by sea—that is, in its maritime trade. Thus in 1873 the value of the seaward trade was 525,000,000 marks, or 41 per cent. of the total trade, while that of the landward trade was 754,000,000 marks, or 59 per cent. of the whole. In 1887 the former was 968,561,000 marks, or 52½ per cent. of the whole, and the latter 875,978,000 marks, or 47½ per cent. of the whole. This shows an increase during this period of 14 years of 84.47 in the export by sea and of only 16.15 in the export by land—a very marked difference. The total increase in the export trade during the period has been 44.20 per cent.

It is expected that when the cordon which has hitherto separated Hamburg and Bremen from the rest of Germany has been removed, the relations between the two will be closer than ever. The citizens of Hamburg and Bremen themselves will be driven to make use of articles of German origin much more freely than before, as many of them will be obtainable at a cheaper rate than corresponding foreign articles, which are weighted with a customs duty. Moreover, there is a trade of very great importance done in supplying ships with necessaries of various kinds, a much larger proportion of which, it is hoped, will now be drawn from Germany; for it is expected that the high rent charged at the bonded warehouses will prevent them from being largely used as stores for foreign goods. In other ways it is expected on the part of those who are desirous of seeing German industry and commerce fostered that Hamburg houses will find it to their interest to deal much more largely with German importers than they have hitherto done, and that not only with respect to manufactured articles, but to an even greater extent in the case of raw materials and natural products. For these especially it is maintained that the commission business of Hamburg will greatly increase, and the great centers of production are urged in their own interests to afford every facility to Hamburg houses for enabling them to save foreign customers trouble. Moreover, it is argued that the new conditions will favor the development of manufactures in Hamburg itself, in spite of the great increase in the value of ground-rent that must follow on the inclusion of the city in the Zollverein and the consequent demand for space for the erection of warehouses and other buildings. It is also hoped that Hamburg may attain a dominating position in the markets of the world, and that she may become the great outlet for German industries, for which her position so admirably adapts her, to facilitate which, carriage both by river and rail should be reduced to the lowest possible limits, and freights should be such as to tempt foreign customers to place their orders on the Elbe.

Such are some of the directions in which the new position of Germany's great mercantile port is expected to influence the development of the industry and commerce of the Empire. It simply comes to this—that if, by the inclusion of the whole of Germany, including two of its leading ports, in the general customs union, German producers and merchants are

able to place their goods in the market at a cheaper rate than England or any other country, then in time the Empire will take that dominating position in the world of commerce for which her shrewd chancellor has so long been striving. If Germany succeeds in ousting England from the place she has held for generations, it will simply be because English manufacturers and English merchants do not know how to profit by experience, and have lost that faculty of holding their own which they inherited from their forefathers. True, Germany has the advantage over England, that her foreign policy is practically independent of party politics, and that the fear of losing office never comes into Prince Bismarck's calculations when he is making up his mind where to strike in the interests of his country's commerce. It is this political uncertainty more than anything else, perhaps, that has been at the bottom of the feeble policy of England, of which commercial men have had recently to complain so frequently. While England and Germany look sharply after their own interests there is no reason why their commercial rivalry should not be of the most friendly character. In Africa, for example, there are enterprises which they could accomplish much more efficiently, and much more to the benefit of all concerned, together than separately, as recent disastrous events have proved. And it should be borne in mind that Hamburg is really the great starting point of German commercial and colonial enterprise in Africa as well as in the Pacific. Not only has it a geographical society, which does excellent work for science as well as for commercial geography, but Hamburg firms, Hamburg capital, and Hamburg ships have played a part of the greatest importance in recent German colonial enterprise. England, therefore, is deeply interested in the change about to be made. If she is true to herself, and if her manufacturers and merchants take a broad and liberal view of their own interests, any increased prosperity that may come to Hamburg need not involve a diminution of England's supremacy.

Certainly the rate of Hamburg's own prosperity has been of the most marked and satisfactory character. Fifty years ago the total tonnage of sea-going vessels which entered the port was only 250,000 tons; it is now fifteen times as much. Both the railway and the river traffic (the latter of far more importance in Germany than in England) have grown at an equal rate. The tonnage of vessels belonging to the port has increased ten times during the same period. The total tonnage of British vessels which entered the port of Hamburg fifty years ago was only 55,000 tons; it is now 1,600,000 tons. The value of the total trade of the port has increased in corresponding proportion, while the population of the city has more than trebled within the half century. The budget of the expenditure of the city reaches a sum of £2,000,000 annually, while the local debt is about £10,000,000, most of it expended on public works. There is no reason to fear that the change will bring any check to Hamburg's prosperity; it is bound, as long as Germany retains its present limits, to maintain its place as the greatest commercial port on the continent of Europe, and to become an increasingly powerful rival to the great ports of our own country.

Meantime a considerable amount of irritation exists among the citizens of Hamburg, owing to the proceedings which have been deemed necessary with a view to its inclusion. The whole city has been divided into a large number of small districts. Every citizen paying above a certain moderate rent must make an inventory of all articles liable to customs duties — wines, spirits, sugar, coffee, tobacco, and many other articles — and on all above a certain limited quantity duties will be levied on and after Monday. Thousands of customs officers, a correspondent informs me, will make house-to-house visitations to test the correctness of the inventories furnished. Thus, all above seventy bottles of wine, twenty bottles of spirits, 6 pounds of tobacco, 30 pounds of coffee, and so on, will be liable to duty. The city would have lost but little had the Hamburgers been spared this foretaste of their new privileges. Living, it is estimated, will henceforth be at least 15 per cent. higher than before, and ground-rents will be so high and building so expensive that, as the Times correspondent says, manufacturing industry will be rendered impossible. The wages of masons and carpenters, for example, have increased to 7 and 10 marks a day, while in inland towns they are only 3½ to 5 marks.

But, apart from all such considerations, it was surely time that this further stage in the consolidation of the German Empire should be taken, and that an anomaly which probably exists in no other country should be abolished. It is natural for the Imperial authorities to desire their two great commercial ports to be as one with the Empire in all respects; that, as far as their trade is concerned, they should not be in the position of foreign countries, jealously watched by Imperial officers lest they might seek to injure the financial interests of the country of which they form part. How anomalous and awkward and irritating it would be, for example, if the ports of London or Liverpool, the two great gate-ways of our foreign commerce, were outside the customs regulations of the rest of the Kingdom. That would be intolerable. It is perfectly natural, then, that two of the most important ports of the German Empire, commercially, should be constrained to contribute their share to its common interests. While they sacrifice but little to the accomplishment of complete German unity, Hamburg and Bremen, with their old and once more powerful partner, Lübeck, will still retain the prestige of their Hanseatic association, will still retain the rare dignity of free cities, entitled, like the greatest State in the Empire, to send their representatives to the Bundesrath and to the Reichstag.

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EXPORTS FROM MANCHESTER TO THE UNITED STATES.

The following statement shows the value of declared exports from the consular district of Manchester to the United States for the four quarters ending September 30, 1888:

Articles.	Quarter ending—				Total.
	December 31, 1887.	March 31, 1888.	June 30, 1888.	September 30, 1888.	
Carpets	$20,501.70	$49,764.76	$22,470.03	$46,651.98	$139,388.47
Chemicals	119,810.65	116,728.33	124,365.35	122,357.76	453,262.09
Cottons	939,146.41	1,212,015.67	900,784.85	860,797.77	3,912,744.70
Granite	1,442.65	1,537,08	2,197.93	4,140.96	9,318.62
Hats	.....	.....	.....	23,581.43	23,581.43
Hosiery	30,178.92	68,423.66	56,664.60	58,447.45	213,714.63
Iron	9,505.22	7,828.09	8,018.77	61,382.11	86,734.19
Leather and hides	142,721.35	21,702.68	28,169.45	41,625.44	234,218.92
Linens	319,261.62	339,457.23	295,361.88	370,966.82	1,325,047.60
Machinery	301,375.87	220,990.99	220,961.88	244,363.83	987,692.57
Mixed goods	126,501.30	169,243.77	76,753.84	167,569.73	540,068.64
Musical instruments	2,762.69	1,209.44	2,884.30	2,754.29	9,610.72
Paper	39,339.90	43,243.81	33,192.37	26,235.25	142,011.33
Rags and junk	122,717.09	98,690.02	142,779.74	147,661.95	511,848.80
Seals and furs	5,961.97	5,100.17	4,684.73	5,935.36	21,682.23
Silk	256,156.48	245,534.04	220,392.52	291,942.73	1,014,025.77
Steel	26,492.21	35,361.24	59,181.52	52,129.94	173,164.91
Wine, beer, etc	242.40	.....	149.65	342.21	734.26
Wool	137,265.38	145,739.52	141,849.25	223,972.09	648,826.24
Worsted stuffs	47,547.26	73,838.52	149,077.92	68,433.10	338,896.80
Sundries	80,568.89	65,129.66	44,248.27	68,929.17	258,875.99
Totals, 1888	2,729,500.01	2,921,538.68	2,534,188.85	2,890,221.37	11,075,448.91
Totals, 1887	2,616,256.53	2,947,432.08	2,316,149.20	2,901,867.78	10,781,705.59
Increase	113,243.48	.....	218,039.65	.....	293,743.32
Decrease	.....	25,893.40	.....	11,646.41	.....

E. J. HALE,
Consul.

ADULTERATION OF WINES IN SPAIN.

[Transmitted by Consul Ingraham.]

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There are two kinds of wine merchants which ought not to be confounded; these are the wine-growers and speculators in wine on the spot, who are in reality those who form the market prices; the others are the "extractores," and those are the shippers to foreign markets; they make their purchases from the former and prepare and blend their wines in a great variety of styles for the particular demand of the market each kind is intended for. For instance, there are markets which require a very pale sherry, and a gold or brown sherry would not sell at any price, whilst at others it happens the contrary and a very pale wine would not find buyers. There are many other specialties, such as more or less dry, more or less body, sweetness, taste, etc., in fact, each adapted for a different market, but these wines can not be considered to form the market value of this place, and for said reason it is necessary to take the prices from the first-stated merchants. That is what the shippers do or pretend to do when they present their invoices, which represent the original cost of the wine and the corresponding expenses of preparation from the date of the purchase, which appears reasonable.

This is observed in the majority of shipments for New York, where the largest quantity consumed is of very low grades. It has been considered generally that low sherries can not be fit for shipment until the third year, and so it would be if left entirely to nature, but such wines in the hands of intelligent persons in the matter, by repeated finings and racks off, reinforcing well with alcohol, and other operations adopted by wine merchants have, in fact, of late been shipped within the second year. A great part of the wine shipped is not above twelve months, and this is the sweet or checked wine of which a good portion enters in the combination of low sherries.

The sweet wine is made thus: During the vintage, and after the grape is pressed, they put 25 gallons of alcohol or spirits of about 66 per cent. over proof to a butt and the rest completely filled with the must or juice of the grape, and the bung made fast. The spirits stop the fermentation of the wine, which then becomes perfectly sweet. This wine can be got ready for shipment within the twelve months or less, but, as I have already stated, it is only used as an auxiliary for the preparation of wines.

In general the low-priced sherries are blended or composed of four or more different sorts, viz: Alcohol or spirits, sweet wine, which I have described above, colored wine, cheap new wines of different kinds, and sometimes of a few gallons of older wines to help the whole to an older appearance. Fine sherries, on the contrary, are kept in their natural state of very pale and dry for six or seven years and sometimes longer, and these wines, which, from their first growth, are costly and become still much more so by the length of time required, are very frequently disapproved by such as find more to their taste other sorts of wine prepared and worth, perhaps, the tenth part of the above stated.

Another way, and the best way, to forward wines is by the use of "soleras," or, as I should say, mother wines. The said soleras are a number of butts of old wines, more or less good, but always old; these butts of wine to be made use of are generally half full, the other half being filled with a new wine, which, in the course of a very short time, gets so forwarded that it becomes an old wine under that treatment. A quantity is then taken from each butt to be made use of in the preparation of wines, and that quantity taken off is again replaced with new wine to let it grow again in the same manner. The same way of carrying on the business is hardly to be found in any other country, nor even in any other part of Spain.

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ANT. J. BENSUSAN,
Acting Vice-Consul at Cadiz.

COMMERCE AND NAVIGATION OF THE NETHERLANDS IN 1887.

The following statement shows the share of the United States in the general commercial movement of the Netherlands in 1886 and 1887:

General imports in 1887 amounted to 12,558,934,837 kilograms, against 11,579,166,228 kilograms in 1886, an increase for 1887 of 979,768,609 kilograms. The share of the United States in these imports amounted, in 1887, to 436,170,584 kilograms, against 409,360,678 kilograms in 1886, an increase in 1887 of 26,809,906 kilograms.

The value of the total imports for consumption in 1887 amounted to 1,136,997,176 florins ($457,072,864), and 1,102,693,328 florins ($443,281,717) in 1886, an increase in 1887 of 34,303,848 florins ($13,790,146). The value of imports for consumption from the United States in 1887 was 79,132,479 florins ($31,810,854), against 66,973,497 florins ($27,923,345) in 1886, an increase in 1887 of 12,157,982 florins ($4,887,508).

General exports in 1887 amounted to 6,869,800,494 kilograms, against 6,046,068,794 kilograms in 1886, an increase for 1887 of 823,731,700 kilograms. Exports from the United States in 1887 amounted to 149,475,106 kilograms, against 132,324,290 kilograms in 1886, an increase in 1887 of 17,150,816 kilograms.

*Uitvoer nit het vrye verkeer.**—In the year 1887, 991,618,008 florins ($398,630,439); in 1886, 949,488,578 florins ($381,694,408); increase in 1887, 42,129,430 florins ($16,936,030). The share of the United States in 1887 was 49,062,139 florins ($19,722,979); in 1886, 45,755,659 florins ($18,393,774); increase in 1887, 3,306,480 florins ($1,329,204).

Transit in 1887, 2,374,632,270 kilograms; in 1886, 2,170,043,097 kilograms; increase in 1887, 204,589,173 kilograms. The share of the United States in 1887 was 21,958,008 kilograms; in 1886, 18,477,016 kilograms; increase in 1887, 3,480,992 kilograms.

* By "Uitvoer nit het vrye verkeer" is meant the exports of such parts of the "general exports" as consist of articles of domestic origin, and, if having been imported, of such articles as are not subjected to any customs control or fiscal formalities.

NAVIGATION.

The following is a summary statement of the sea navigation of the ports of the Netherlands in 1887:

Vessels entered.—The total number of vessels entered, steam and sail, under all flags, with cargoes, in 1887, was 8,089, measuring 13,021,576 cubic meters, being an increase of 775 vessels and 1,664,353 cubic meters more capacity as compared with 1886. The number of vessels entered in ballast in 1887 was 553, and their measurement amounted to 445,041 cubic meters, being an increase of 172 vessels and 175,056 cubic meters more capacity than in 1886.

Vessels cleared.—The total number of vessels cleared with cargoes in 1887 was 5,713, and their measurement was 8,086,681 cubic meters, being an increase of 484 vessels and 937,711 cubic meters more capacity as compared with 1886. The number of vessels cleared in ballast in 1887 was 2,910, and their measurement amounted to 5,198,809 cubic meters, being an increase of 464 vessels and 851,725 cubic meters more capacity than in 1886.

The following statement shows the number of vessels which entered and cleared from Dutch ports from and for the United States in 1887, specifying their nationality, and whether with cargoes or in ballast, as follows:

Nationality.	Entered.		Cleared.	
	With cargo.	In ballast.	With cargo.	In ballast.
Dutch	56	.....	60	4
Danish	1	.....	.....	.....
English	135	.....	73	.....
Italian	6	.....	.....	.....
North American	7	.....	6	.....
North German	20	.....	12	.....
Norwegian	61	.....	17	8
Austrian	3	.....	.....	.....
Russian	4	.....	.....	1
Spanish	1	.....	.....	.....
Swedish	1	.....	1	.....
French	.....	.....	1	.....
Total	295	.....	170	13

Of the 295 arrivals 114 were steamers, 53 being under the Dutch flag, 58 under the British, 2 under the North German, and 1 under the Spanish; and of the 183 departures 66 were steamers, of which 55 were under the Dutch flag, 10 under the British, and 1 under the North American.—AMSTERDAM, *November 17, 1888.*

D. ECKSTEIN,
Consul.

TRADE OF PERSIAN GULF PORTS.

In compliance with my request for statistical information concerning the import and export trade of the Persian Gulf ports of Bushire and Bender-Abbas, our consular agent in the former place has just furnished me with a tabulated statement, which, after having reduced the contained estimates of values into federal currency, I submit herewith.

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It will be observed that cotton fabrics occupy the place of first importance in the list of imports, representing in the aggregate $2,937,037.02. This fact is one of special significance to us, and strongly instances my previous arguments in favor of the direct extension of our commerce to those regions, which, so far, American enterprise has almost entirely neglected to explore.

Table showing the principal articles of import into Bushire.

Articles.	Quantity.	Value.	
		Krans.	
Animals (donkeys)	400	40,000	$5,925.92
Arms and ammunition, cases	300	375,000	55,555.55
Candles, boxes	4,500	65,000	12,592.59
Coffee, bags	600	75,000	11,111.11
Cotton goods (dress, bleached, and printed), packages	18,000	15,000,000	2,222,222.22
Thread and yarns, do	100	180,000	26,666.66
Drugs and medicines, do	2,000	250,000	37,037.03
Dyeing materials, do	500	15,000	2,222.22
Dates, baskets	11,000	100,000	14,814.81
Fuel	.....	200,000	28,629.62
Glass and glassware, packages	2,000	250,000	37,037.03
Gold-embroidered cloth, cases	50	60,000	8,888.88
Gold thread and lace	.....	350,000	51,851.85
Grain, pulse, and flour, bags	6,000	75,000	11,111.11
Hardware and cutlery, packages	250	40,000	5,925.92
Hides, skins, and leather, do	600	75,000	11,111.11
Indigo, do	3,500	1,350,000	200,000.00
Jute, canvas, and gunny-bags, do	900	162,000	24,000.00
Liquors, wines, and spirits, do	1,600	80,000	11,851.85
Metals, do	25,000	2,200,000	325,925.92
Manufactures, do	500	50,000	7,407.40
Petroleum, cases	12,000	120,000	17,777.77
Porcelain and chinaware, packages	800	120,000	17,777.77
Provisions and oil-man's stores, do	8,000	200,000	29,629.62
Silk goods, cases	40	120,000	17,777.77
Spices—Pepper	.....	150,000	22,222.22
Ginger	.....	50,000	7,407.40
Turmeric	.....	100,000	14,814.81
Cinnamon	.....	25,000	3,703.70
Cardamoms	.....	45,000	6,666.66
Cloves	.....	5,000	740.74
Sundry other goods	.....	50,000	7,407.40
Stationery, packages	150	35,000	5,185.18
Sugar (loaf), cwt	34,000	1,420,000	210,370.37
Sugar (soft), do	65,000	1,950,000	288,888.88
Tea, do	5,000	700,000	103,703.70
Timber and wood	.....	120,000	17,777.77
Woolen goods, packages	500	1,200,000	177,777.77
Other articles	.....	500,000	74,074.07
Total	.....	27,922,000	4,136,592.40
Specie	.....	500,000	74,074.07
Grand total	.....	28,422,000	4,210,666.47

Table showing the principal articles of export from Bushire.

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Articles.	Quantity.	Value.	
		Krans.	
Animals (horses)	600	300,000	$44,444.44
Cattle	5,000	40,000	5,925.92
Cotton (raw)	700,000	2,500,000	370,370.37
Dates ..... baskets	15,000	150,000	22,222.22
Drugs ..... packages	1,000	100,000	14,814.81
Dyeing and coloring materials ..... do	4,000	150,000	22,222.22
Dried fruits ..... do	10,000	400,000	59,259.24
Grain (wheat and barley) ..... bags	150,000	1,800,000	266,666.66
Gum ..... packages	3,000	150,000	22,222.22
Opium ..... cases	5,000	12,000,000	1,777,777.77
Provisions and stores ..... packages	3,500	200,000	29,629.62
Seeds—Cummin ..... maunds	50,000	100,000	14,814.81
Poppy ..... do	30,000	25,000	3,703.70
Black ..... do	3,090	10,000	1,481.48
Silk (raw) ..... packages	200	2,200,000	325,925.92
Tobacco (tumbacei) ..... bags	35,000	1,750,000	259,259.25
Wool ..... maunds	45,000	200,006	29,629.72
Woolen goods, carpets, and rugs ..... bales	600	1,000,000	148,148.14
Rose-water ..... packages	16,000	300,000	44,444.44
Other articles	.....	300,000	44,444.44
Total	.....	21,845,000	3,236,296.29
Specie	.....	850,000	125,925.92
Grand total	.....	22,695,000	3,362,222.21

Table showing principal articles of import into Bender-Abbas.

Articles.	Quantity.	Value.	
		Krans.	
Confectionery and preserves ..... cases	1,090	30,000	$4,444.44
Cotton goods ..... bales	2,500	3,125,000	462,462.96
Thread and twist	.....	1,250,000	185,185.18
Drugs and medicines ..... cases	15	30,000	4,444.44
Gold-embroidered cloth ..... do	16	40,000	5,925.92
Grain and pulse ..... bags	5,000	60,000	8,888.88
Indigo ..... packages	2,500	750,000	111,111.11
Jute, manufactures of ..... bales	400	65,000	9,629.62
Liquors, wines, and spirits ..... cases	800	55,000	8,148.14
Mats ..... packages	1,200	100,000	14,814.81
Metals	.....	400,000	59,259.25
Oil (petroleum) ..... cases	1,000	12,000	1,777.77
Provisions and oil-man's stores ..... packages	1,500	25,000	3,703.70
Spices ..... do	1,400	250,000	37,037.03
Sugar—Candy ..... do	600	70,000	10,370.37
Loaf ..... cwt	25,000	1,087,500	161,111.11
Soft ..... do	10,000	300,000	44,444.44
Tea ..... packages	7,000	900,000	133,333.32
Timber and wood	.....	20,000	2,862.96
Woolen goods	.....	250,000	37,037.03
Other articles	.....	250,000	37,037.03
Total	.....	9,069,500	1,343,629.61
Specie	.....	300,000	44,444.44
Grand total	.....	9,369,500	1,388,074.05

Table showing principal articles of export from Bender-Abbas.

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Articles.	Quantity.	Value.	
		Krans.	
Cotton (raw) ..... cwt...	14,000	600,000	$88,888.88
Dates ..... baskets...	10,000	80,000	11,811.84
Drugs and medicines ..... packages...	2,000	150,000	22,222.22
Dyeing and coloring materials ..... do.....	14,000	750,000	111,111.11
Dry fruits ..... do.....	20,000	1,250,000	185,185.18
Grain and pulse	5,000	100,000	14,814.81
Gums	.....	100,000	14,814.81
Opium ..... cases...	2,500	6,000,000	888,888.88
Provisions and oil-man's stores	.....	50,000	7,407.40
Salt ..... tons...	5,000	50,000	7,407.40
Seeds ..... packages...	2,000	120,000	17,777.77
Silk (raw) ..... do.....	50	60,000	8,888.88
Silk, manufactures of	.....	110,000	16,296.29
Tobacco ..... bags...	5,000	250,000	37,037.03
Wool (raw) ..... bales...	1,500	300,000	44,444.44
Woolen goods	.....	300,000	44,444.44
Other articles	.....	200,000	29,629.62
Total	.....	10,470,000	1,551,071.08
Specie	.....	1,500,000	222,222.22
Grand total	.....	11,970,000	1,773,293.22

NOTE.—The krans used in this report is probably the silver coin sahibkiran, or sabkran, which varies in weight and value under different rulers.

TEHERAN, *October 1, 1888.* E. SPENCER PRATT.

DECREE AUGMENTING DUTIES ON CEREALS IN PORTUGAL.

[Transmitted by Minister Lewis.]

The causes which gave occasion to reduce the duties on importations of wheat and flour, determined by the decree of November 2 of the current year, having ceased in part by the decline of the prices of wheat and flour in the great markets of exportation; and having consulted the superior councils of commerce and agriculture; and conforming myself with what was represented to me by the ministers and secretaries of state of the different divisions, and using the authority granted to the Government by the law of July 19 of the current year, I see fit to order the following:

ART. 1. The duties on foreign wheat and flour shall be, counting from the 17th of the current month, 16 reis per kilo for wheat and 23 reis per kilo for flour.

ART. 2. Excepted from the provisions of the previous article are wheat and flour which at the same date may be in Portuguese ports or in direct voyage from the producing countries, which will continue to pay the duties fixed in the decree of the 2d of November past. — *December 15, 1888.*

THE KING.

PRICE OF FLOUR IN HAVANA.

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The difficult and abnormal situation traversed for several years past by the guild of bakers, owing jointly to the substitution of free for the slave labor formerly used in this branch of business and to the depreciation of the paper currency in comparison with gold, whose premium has now risen to more than 100 per cent. above the rate fixed for the price of bread, necessitated the adoption of a measure for the harmonization of the interests of the public with those of the baker, as well as for the attainment of a result in accord with the universally recognized economic principle—that the price of every manufactured article must cover the cost of the raw material and expenses of labor employed in its production. But the desire not to raise the price of an article of such prime necessity as bread in a country so notoriously impoverished delayed, with manifest injury to the interest of the bakers, the establishment of such a measure till now, when bread is selling cheaper in Havana, as every one knows, than in the wheat-producing countries themselves, not only of America, but also of Europe.

This mercantile phenomenon, as could not be otherwise, has wrought the ruin of many trades, and would necessarily bring about the general ruin of this guild were it to continue; for it is not possible, with flour at $13 gold per barrel, and with a depreciation of 240 per cent. in the money we receive, to sell for 10 cents paper the quantity of bread we now give without ruin following in a short time from such want of foresight on our part, and which no just public can desire.

Therefore, in complying, as chairman of the guild, with the duty of calling the attention of the public to the official advertisement published in its corresponding place, and in which are fixed the prices that bread will be sold for from to-morrow, I entertain the conviction that the sensible public will find this resolution sufficiently justified, since its necessity is demonstrated by the eloquence of facts.—BENITO ALONSO, *Chairman*, HAVANA, *October 31, 1888.*

TAXATION IN HAVANA.

To the tax-payers: In times of disembarrassment and when the people and their popular corporations have accomplished the establishment of municipal adminstration upon a solid and enduring basis, it rarely happens that their representatives fall into disagreement with public opinion, because they then always subordinate their own judgment to that of the public, satisfying in this manner the desires of the contributor; but when municipalities are burdened down by sacred obligations, commencing with the unavoidable maintenance of the public service, and ending in the no less high duty of complying honorably with debts contracted in the name of the people; and when within the bounds of equity, reason, and justice neither ideas nor plans are adduced for strengthening the credit or supplying the means of municipal administration and the fulfillment of obligations, then the appeal to legal measures is justifiable for the mending of a condition of things no longer sustainable.

The government of the city of Havana, without the adequate means to defray the expenses of so important a corporation, is indebted, also, for large amounts that are to be gradually paid in accordance with arrangements to be proposed to its creditors. Therefore, as

much for the purpose of satisfying the natural demands of the inhabitants of this city in the paving of streets, in the execution of works required for their welfare, as well as for the improvement of every public service, and to comply with present and future obligations, it becomes, by all means, necessary to increase the budget to a measure adequate to these needs, and in a manner that each contributor may, within the limits of a regular and prosperous management, be able to support his share. Otherwise all effort to better the credit of the municipality must fail, and the good intentions of the representatives of this, a city of first order, can only end in negative results.

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Under these convictions, and in fulfillment of article 9 of the present law in relation to budgets, this corporation has resolved to establish, from the 1st of January next, an impost upon the articles of food, drink, and fuel in accordance with the regulation and tariff approved by the Government of His Majesty; but the municipal government, actuated by the desire to proceed in the collection of this tax in the manner most convenient to the general interests, not only admits now, but will at all times admit the views of the guilds as to the manner of procedure, so long as they accord with prudence and equity.

The desire of the municipal government to prevent the least molestation to the inhabitants is so great that, instead of offering the sale of this impost at public auction and thus collect the greatest possible sum through the highest bidder, it will establish the collection through its own officers, in the hope that the guilds will be ready to agree upon an equitable assessment, obtaining thereby a conciliatory solution, and one in harmony with the interests of the taxpayer and the necessity originating this tribute.

The representatives of the corporation over which I have the honor to preside could not worthily represent this populous city, if in their efforts to procure the means for carrying on its government they did not count upon the co-operation of the inhabitants, who, doubtless, convinced of the unavoidable necessity will, under the influence of a sentiment inspired by the general welfare, help in the establishment of a tax that can not be avoided within the legal prescriptions and economic necessities of the municipality.—FRANCISCO F. IBAÑEZ, *Mayor*, HAVANA, *November 17, 1888.*

COTTON CULTIVATION IN EGYPT IN 1888.

[From the Bulletin Ministère de L'Agriculture, Paris, October, 1888.—Translation.]

The following table presents a summary, by provinces, of each village of Egypt cultivating cotton. It gives as a total 1,021,250 feddans (1,051,887 acres). Comparison with the two years preceding shows a noteworthy increase in the cultivation this year in all the districts, with the exception of the province of Menoufieh, where it has remained practically stationary.

The general comparative condition of cotton culture shows the proportion of its extent superficially with relation to the area cultivable for each province. As a whole, Lower Egypt, which in 1887 had 29 per cent. of its area sowed in cotton, has in 1888 33 per cent., being 4 per cent. more than in the year preceding.

In Upper Egypt, where the cultivation of cotton is not general in all the districts, the same calculation shows an increase in 1888 of 1½ per cent. of the total area.

	Feddans.
In 1888 the cultivation is of	1,021,250
In 1887 it was of	865,530
Increase in 1888	155,720

Area of cotton cultivation in 1886, 1887, and 1888.

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Administrative divisions.	General areas under cultivation.	Area in cotton.			Percentage of cotton in total area cultivated.		
		1888.	1887.	1886.	1888.	1887.	1886.
Lower Egypt:	*Feddans.*	*Feddans.*	*Feddans.*	*Feddans.*			
Béhérah	467,662	134,604	105,405	110,763	23.79	22.63	28.70
Charkieh	434,982	152,785	131,042	133,820	30.81	30.15	35.00
Dakahlieh	462,367	173,352	153,912	157,727	34.10	33.28	37.40
Gharbieh	840,089	310,248	263,564	275,125	32,80	31.41	36.90
Kalioubieh	187,180	45,388	37,013	37,226	19.88	19.77	24.50
Menoufieh	351,710	105,251	106,401	111,453	31.69	30.28	29.93
Total	2,743,990	921,568	797,337	826,114	30.15	29.10	33.50
Upper Egypt:							
Assiout	419,100	1,053	144	5	.....	0.03	0.25
Beni-Souef	231,610	18,738	16,586	5,962	4.50	7.16	8.09
Fayoum	231,045	70,960	47,629	35,088	15.25	20.69	30.70
Guizeh	181,176	1,767	1,713	1,317	0.73	0.94	0.98
Minia	397,240	6,422	1,800	2,134	0.54	0.45	1.62
Esna	150,459	4	.....	.....	.....	.....	.....
Guerga	325,915	623	320	25	.....	0.09	0.19
Kena	280,927	115	1	.....	.....	.....	0.04
Total	2,217,472	99,682	68,193	44,531	2.24	3.08	4.50
Egypt entire: Total	4,961,462 or 5,110,305 acres.	1,021,250 or 1,051,887 acres.	865,530 or 891,491 acres.	870,645 or 896,764 acres.	17.64	17.46	20.50

The following table easily allows an appreciation of the real importance of the development of cotton cultivation in 1888:

Administrative districts.	Increase of 1888.	Percentage of increase.
Lower Egypt:	*Feddans.*	*Feddans.*
Béhérah	29,199	27.70
Charkieh	21,683	16.50
Dakahlieh	19,440	12.60
Gharbieh	46,684	17.60
Kalioubieh	8,375	22.60
Menoufieh	(1,150)	(1.00)
Total	126,531	15.50
Upper Egypt:		
Assiout	909	.....
Beni-Souef	2,152	.....
Fayoum	23,325	.....
Guizeh	54	.....
Minia	4,622	.....
Esna	4	.....
Guerga	303	.....
Kena	114	.....
Total	31,493	46.00
Egypt entire	*158,024	18.00

*162,765 acres.

The cotton cultivation also comprises this year an extent of upwards of 155,000 feddans (159,650 acres) over that of the year before; that is to say, 18 per cent. more than in 1887. The proportion is 15 per cent. for Lower Egypt and 46 per cent. for Upper Egypt. This fact is, moreover, the more remarkable, as it has not produced, according to the report of 1887, any diminution in the surface given up to the different products of the winter season.

In Upper Egypt itself the apprehensions entertained last year upon the subject of cultivation of sugar-cane have, happily, not been realized, for the statistics of the products of Lefi show a cultivation of canes at least equal to that of the past year. The statistics of the last year were, perhaps, somewhat less than the reality, but even allowing for the deductions that should have been made in the statements of the cultivators in 1887, there does not the less remain a notable increase of cultivation in 1888. It is, then, at least fair to attribute this extension of cultivation to better care of the ground favored by progress in irrigation. In fact, if one examines in their details the preceding tables, the principal point which attracts the attention is the inequality of proportional increase between the different provinces.

In lower Egypt Béhérah has cultivated a quarter more of cotton than in the last year, while the increase is at least 13 per cent. for the other Moudiriehs. In Upper Egypt Fayoum has almost doubled its cultivation.

The important work of cleaning, of making canals, of distributing water, executed in these provinces, has had certainly the largest influence upon the progress of cotton cultivation in the two aforenamed regions.

The plantations have generally a satisfactory aspect, although in certain districts of the Delta the temperature of the three last months, and also the abundant rains of the month of May, have not been favorable to the growth of the plant, which is retarded in some localities.

Here are the climatic averages of Lower Egypt, about the period of the cotton harvests:

Average of temperature (Centigrade) in the Delta.

Month.	Highest.	Lowest.	Average.	Prevailing wind.
March	33°.8	12°.3	19°.3	N.NE.
April	27°.7	17°.3	20°	N.NW.
May	30°.6	19°	22°	Do.
June	32°.1	20°	25°.2	Do.
July	35°	25°	28°.5	N.

If the rise in temperature, indispensable to the development of the cotton plant, is delayed till the end of June, the plantations will not suffer the same damage which afflicted them this time last year from the cotton worms. This insect has not, nevertheless, disappeared; its ravages have generally not been as extensive as in previous years, but the farmer dreads its appearance, habitually in the last days of August.

The healthy and vigorous plants resist the attacks of the insects better. From this point of view the sowing of good seed is certainly the surest means of fighting the pest, and this year the Government has continued sending a certain quantity of selected grains for the disposition of the cultivators. The good effects of this system will not fail to become apparent in a general improvement in the quantity and quality of the product.

M. A. BOINET, *Bey*,
Financial Agent of the Egyptian Government.

REPORT ON TRADE OF SOUTHERN PERSIA.

Formerly the trade in gum was very limited and insignificant, but in recent years, and especially since the war in the Soudan, it has assumed important dimensions, to the material improvement of the nomad tribes who are engaged in the collection of it. I calculate the value of the various sorts of gums exported from the northwestern and this port of Persia to be about $444,444.44 (3,000,000 krans) annually, and I am of opinion that the trade is capable of immense development. It would appear that Persia is now supplying a portion of the gum which used to be imported from the Soudan. The bulk of the Persian gum finds its way to Bagdad, whence it is sent to Syria by land and to Europe by steamers.

RAW WOOL.

The actual export from Bushire is shown in my report of the export trade of Bushire. On careful inquiry I find that the entire quantity of wool obtainable annually from Bushire and the various ports under its jurisdiction amounts to about 450,000 fleece; Bender-Abbas, 200,000; Mahommereh (Shustar and the interior), 600,000; a total of 1,250,000 fleece of 2½ pounds, making 3,125,000 pounds. Of this about 300,000 fleece are annually exported to Bombay from Bushire and Bender-Abbas, and the rest to Bussorah, where the wool is washed, assorted, baled, and shipped to Marseilles, London, Liverpool, and America. The fleece of Persian (Turkey) sheep weighs 3 pounds and that of an Arab sheep, which has superior wool, weighs 2 pounds each. All the Persian wools are mixed up at Bussorah with Bagdad sorts, which are cleaner and superior in quality. Persian wool used to find its way to the United States from Liverpool and Marseilles, but for the two past years some direct shipments have also been made from Bussorah, that is to say with through bills of lading transshipped in England and Marseilles, and this year I observe such shipments have considerably increased; so far about 5,000 bales having been consigned to America, of which, I believe, the steamer Iberia carried some direct. I may add that the wool which is now being sent to America has been previously sold at Marseilles and London for delivery in America with through bills of lading.

IMPORT OF COTTON FABRICS FROM GREAT BRITAIN.

Under the item of cotton goods, in my report of imports of Bushire and Bender-Abbas, the value of the annual imports is given, but as to Bagdad I

am afraid I shall have to give a guess, though, approximately, the value may be taken as something like 110,0000 krans, of which a good portion is re-exported to Persia via Kemaushah. The annual import of cotton goods at Lingah is computed at $518,518.51. Of this a good deal is sent over to the Arab coast and Baheim. Baheim, too, receives independently cotton goods to the value of about $148,148.04, and in its turn supplies the Arab littoral and the interior.

PETROLEUM.

The quantity of petroleum imported into the gulf and Bagdad does not exceed 3,000 cases annually. Only a very small quantity, and that, too, since last year, is derived from Russian sources. The bulk, if not the entire quantity, is American. I do not think the trade will increase materially as far as Persia is concerned. Russia has already pushed on its petroleum so far south as Ispahan, the expensive mode of carriage not permitting her operations further south. American oil reaches Shiraz, and the cost of transit too equally interfering with the development of the trade in American sorts. I am, however, of opinion that if American merchants could arrange to sell petroleum in these parts at the same price they are selling at Kunuchee and Bombay, the trade would double in a short time and perhaps be able to compete with Russian at Ispahan. At all events it will definitively check the approach of Russian oil to Shiraz, if not to Bushire.—BUSHIRE, *September 30, 1888.*

T. J. MALCOLM,
Consular Agent.

PRODUCTION AND CONSUMPTION OF RICE IN JAPAN.

The staple food of Japan is rice, and it is grown throughout the Empire, not only wherever irrigation is possible, but the species known as upland rice is grown on high, dry ground, needing no irrigation, just as wheat is grown in America. In this consular district the lowland variety of rice and the best rice in Japan is grown, and in such quantities that it is becoming a leading article of export. The fields in which it is grown in this district are small—the largest seldom being over one-fourth of an acre in area—and lie almost entirely under water from the time the seedling is planted in May or June until the ripened grain is harvested in October or November. The water so necessary is conducted to the fields, which have raised borders, by means of conduits from numerous streams, or, in times of drought, from basins, which have been constructed to retain the contents of these streams flooded during the rainy season. The sides of the numerous hills surrounding this city are laid out in terraces and into the levels which are intended for rice, the water collected on the higher grounds is led by conduits, the quantity being regulated by means of dams provided with flood-gates, so as to be let on or shut off at pleasure. On the level plains in the interior of the Island of Keirshin irrigation, however, is not so easy, the farmers being compelled to pump the water to the higher level of their fields from the

streams or reservoirs. The pump in universal use resembles a water-wheel, or a steamer's paddle-wheel, and is made to revolve by a man ascending the float-boards.

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In the spring, about the month of March, the fields, which have been left without cultivation during the winter season, are dug up and begin to be prepared for rice sowing. In digging the ground the farmer uses for the purpose a mattock-shaped agricultural implement universally used in Japan. This implement is used as our laborers use the mattock, or the blade may be fastened to a wooden beam, thus forming a plow, which is drawn by a horse or an ox. The broken ground is then thoroughly saturated with a liquid manure, consisting of all sorts of refuse, such as night-soil mixed with bathing water, rotten grass, bamboo leaves, and when dried by the sun the ground is again dug up and flooded with water to the depth of 3 inches. Through the slush is drawn an agricultural implement somewhat resembling a harrow, for the purpose of disintegrating the soil and thoroughly mixing the manure with it. The soil is now ready to receive the seedlings, which have been grown from the seed rice. The seed rice being soaked until ready to sprout is sown in very heavily manured patches of ground, covered with water during the night, and drained off during the day; and when the sprouts are 6 inches high, which is in the month of May, they are transplanted into the prepared fields as shallowly as possible (the number depending on the quality of the ground), in tufts of several plants, about 6 inches apart, and arranged in such a way that all the roots are of the same length. The work is done by all the members who are able to wade about in the water. The rice sprouts thus planted require a great deal of manuring and cultivating before they put forth the ripened ear. It is estimated that from the planting time until the harvest, in November, the fields are hoed once every two weeks, in order that they may be kept free from weeds, water plants, etc. When the ear is about to burst forth the earth must be drawn up to the roots, and at the same time the plants must be heavily manured, which is done by the farmer pouring on the roots of each tuft liquid manure, consisting of a mixture of everything which is supposed to possess fertilizing qualities, but of which night-soil is the principal ingredient.

In September the fields are permitted to become dry, and in October and November, when the ears present a yellow color, the grain is cut by an agricultural implement resembling a sickle, dried on the fields as our farmers cure the newly-cut grain, made into bundles, and taken to the farm-yards. The heads are then pulled from the straw by drawing the bundles through a comb-like arrangement of wooden or iron teeth, hulled or thrashed by spreading them on a mat and beating them with a flail, and separated from the chaff by running the thrashed grain through a machine made of two bamboo baskets, placed one upon the other and full of cut bamboos placed on end, which form the cleaner. The food rice is also further cleaned by pounding it with a pestle, in a mortar-shaped vessel, and where a number of pestles are used in as many mortars they are set in motion by water or steam power.

The amount of rice grown in Nagasaki Ken for the year 1887 was 356,618 koku* (1,829,450 bushels). The yield per tan † of land in an average year is 1.85 koku (9.49 bushels). The cost of cultivation per tan of land in an average year is $7.50. The average annual consumption in a Japanese family is estimated at 3.34 koku (17.13 bushels).

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During the past year rice has been at a lower price than at any time during the past twenty-five years, and an immense quantity has been shipped from this port to Germany, England, Holland, France, and the United States. A considerable quantity of polished rice has also been shipped to Australia, Europe, British Columbia, and the United States. A quantity of cleaned rice has also been shipped to Wladiwostock, the neighboring Russian military post, in Siberia. Rice has been selling during the past year at $3.10 to $3.15 per koku, the price varying according to quality and place of production. Freights to Europe, 35*s.* to 50*s.* per ton; to British Columbia, $7; to San Francisco, $9 to $12; to Wladiwostock, $2 to $4.25.

Owing to Nagasaki being the principal coal depot of the East, it is a port of call for almost all the steamers plying in these waters, and therefore shipping facilities are excellent. —NAGASAKI, JAPAN, *October 28, 1889.*

JOHN M. BIRCH,
Consul.

MANUFACTURES IN INDIA.

[From Moral and Material Progress and Condition of India, 1886–'87.]

The tile factory owned by Mr. East, at Mercara, in Coorg, was in active work. The tiles are of a special mold introduced by the Basel Mission industrial workshop, at Mangalore, and are in demand by all classes. The factory, which turns out other products of the potter's art, is associated with a carpenter's and blacksmith's workshop.

Strictly speaking, there are no skilled manufacturers in Berar, but the most important of the foreign industries are the steam cotton presses, 18 of which were at work during the year, and turned out 297,905 bales of cotton, against 212,773 in 1885–'86. There is also an oil press at Amraoti which manufactured 218 tons of linseed-oil and 561 tons of oil-cake, and a flour mill which turned out 850 candies of flour. The spinning-mill at Badnera produced 1,635,864 pounds of twist and yarn, as compared with 1,321,048 pounds in the previous year. The number of persons employed by the last mill was 650, against 504 in 1885–'86.

The principal manufactures in the Bengal province are jute, indigo, cotton, silk, sugar, salt, and saltpeter.

Forty-five mills and factories (two less than in 1885–'86) worked in the 24-pergunnahs district during the year, and gave employment to over 40,000 hands. The depression in the jute and cotton industries in the presidency division continued to be felt, but less severely than in the previous year.

*A koku is a grain measure equal to 5.13 bushels.

†A tan is a plot of ground equal to about one-fourth of an acre.

There was some improvement in the gunny market, and the number of working days in the jute mills were increased from four a week to nine in a fortnight. About 76,800 tons of jute were worked up during the year, against 46,662 in the preceding year. In the cotton industry the main features of the year are stated to have been a steady fall in prices all round, a fair demand at the decline in prices for yarn, and an increased production, with a gradual transference of spindles to manufacture of lower counts of yarn, on account of the competition of Bombay in production of the finer yarns; 8,330 tons of cotton were worked up in the mills during the year, against 5,933 tons in the preceding year.

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At Monghyr, in the Bhaugalpore division, the manufacture of muzzle-loading guns increased.

One of the two steam oil mills which had been established in the Backergunge district was closed, while the other was successfully worked.

In the Chittagong district the weaving industry continued to hold its own against imported goods, though the thread used was generally imported.

The value of the out-turn of the cotton presses in the northwest provinces and Oude was 1,179,299 Rx., against 396,823 Rx. in 1885–'86; that of the indigo factories 758,677 Rx., against 572,698 Rx.

Every year careful inquiry is made into the circumstances of one of the chief native industries of the Punjab. Last year it was into the woolen manufacture, which was found to be holding its own against imported fabrics. This year the work in brass goods was investigated and it was found that this industry was decaying.

The three cotton mills in the central provinces employ upwards of 3,200 hands. The operations of the Nagpur Empress and the Hinganghat mills were extended during 1886–'87, while the Jubbulpore mills, which were only about two years old, worked up a fair quantity of cotton.

The scheme for the encouragement of art industries in Burmah advanced in the direction of self-support. At the close of the year five of the leading artists in Rangoon associated themselves together and formed an informal company. They have obtained the services of a trustworthy clerk, who will see to advertising in the Indian papers, to the proper registration of orders, to their execution in due rotation, and to their dispatch. When this company has worked a short time it is hoped it will receive as partners members from other towns, and finally embrace the best workers in all the handicrafts. The object of the Government is slowly to withdraw its support from the artists, and to keep a keen lookout that the handicrafts of Burmah are not debased into manufactures, where hundreds of articles of exactly similar design are produced in a slovenly and inartistic manner. There was a steady demand for the silver work of Thayetmyo and Rangoon during the year. The wood-carving institute did well, and more than paid its way, notwithstanding a heavy charge for establishment. Government connection with this institution ceased with the close of the year.

The number of cotton mills in the city of Bombay was fifty, and in the rest of the presidency twenty. The year 1886 was a good one for local cotton manufacturers. China and Japan proved better customers than in previous years, and there was a brisk local demand for home-made goods. Steamer freights to China were cheaper, owing to competition among the steam-ship companies, and port trust charges were reduced. An agency was established at Aden to develop the Somáli coast and Red Sea ports trade. Some impetus was given to the silk, *kinkháb*, and embroidery manufactures of Surat, and those of glassware and coarse cotton fabrics of Kira by European exhibitions. A Parsee firm of Surat established an agency in London for the sale of toys, for the manufacture of which the former city has long been famous. The cotton presses and ginning factories in Khándesh continued to increase. The abolition of transit duties by the Baroda Government, and some of the Mahi Kanta political agency states, was of great benefit to the mill industry of the Gujarát collectorates. Fairs in the agricultural districts were largely attended.

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In the Madras presidency there are six mills for spinning and weaving cotton, one of which, at Tinnevelly, is driven by water-power. There are three large sugar factories. No new factories of importance were opened during the year.

The number of cotton mills, 89 in all, and of looms and spindles was about the same as in the preceding year. But there was an increase of 14 per cent. in the quantity of cotton worked up, and the exports of manufactured cotton goods from Bombay (yarns and cloths) to China and Japan rose from 173,157 bales of 400 pounds each in 1885, to 219,959 bales in 1886. The number of hands employed in cotton mills was 71,000. Out of 89 cotton mills 57 belong to the Bombay presidency. The number of jute mills is 24, the same as for the previous year, of which 22 are in lower Bengal. There was some increase in the number of looms and spindles, but a decrease in the output of manufactured jute. The number of hands employed in jute mills exceeds 49,000.

Among other "large industries," which are shown in the Indian returns for 1886–'87, may be mentioned:

Woolen mills	3	Coffee works	23
Paper mills	7	Cotton and jute presses	172
Breweries	19	Cutch and lac factories	62
Rice mills	43	Oil mills	30
Silk mills	9	Flour mills	22
Timber mills	41	Ice factories	14
Soap factories	2	Pottery and tile factories	11
Tanneries	37	Cement factories	1
Iron foundries	43	Bone manure factories	2

These do not include indigo factories or tea factories, which are worked on indigo and tea estates. Returns of village and domestic industries are made at the census once every ten years, and do not find place in the annual reports.

TRADE IN CHINESE CRUDE AND PREPARED OPIUM.

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Following is an abstract of the report of the commissioners of the Chinese imperial maritime customs on crude and prepared opium:

Relative value and weight.

Description.	Value per 100 catties.	Boiling out-turn of 100 catties.	Value of boiling out-turn.
	Haikwan taels.	*Catties.*	*Haikwan taels.*
Patna	408	52	465
Benares	397	54	452
Malwa	470	72	540
Persian	415	74	480
Turkey	423	76	524

Net weight of chests.—Weight: The contents of chests vary from 112.50 catties (old) to 127.50 catties (new).

Tare allowances, etc.—At Ning-po and Swatow 12½ catties per chest are allowed; at Foo-Chow, 1¼ catties. No rule is reported at other ports.

Trade, taxation, etc.—Except at Newchwang, Chinkiang, Tamsui, Takow, and Amoy, there is no trade in prepared opium. There is a tax on boiled opium in Kwantung, Tien-Tsin, and Chefoo. At Shanghai the customs levy a tax on boiled opium of 60 Haikwan taels per picul, imported and exported. At Newchwang, Tien-Tsin, Hankow, Ning-po, Swatow, and Canton, 5 per cent. ad valorem.

Generally speaking, the legitimate wholesale trade, whether inland, coastwise, or abroad, in prepared opium is insignificant. The boiling is done by retail shops.—PEKING, *November 16, 1888.*

CHARLES DENBY.

ROYAL TRANS-AFRICAN RAILWAY.

On the 31st of October the first section, consisting of 45 kilometers, of the Royal Trans-African Railway, from Loando to Ambaca, was opened to the public. The inauguration ceremony was gone through in the presence of the whole commercial community and great numbers of the native population, the religious portion—blessing the engine, etc.—being undertaken by the vicar-general in the absence of the bishop. After the religious part of the ceremony was concluded the directing engineer and representative of the company, Major Folque, of the engineers, spoke on the previous attempts made to establish a railway system in the same direction; of the many difficulties they had to encounter (and which they had succeeded in surmounting) in their endeavors to carry the project to a practical commencement; eulogizing the enterprise and energy of the Portuguese nation in the develop-

ment of her colonies, especially in Africa, and claiming for this undertaking the marking of a new era in the prosperity of this large province of Angola and in the civilization of the African race generally.

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The line passes through districts alternating between large tracts of prairie, wooded hills, and fertile valleys watered by rivers and streams. The country about the margins of these rivers is already cultivated, both by natives and Europeans, and produces fruit in abundance, vegetables, sweet potatoes, and large quantities of sugar-cane. With the facilities now offered by the railway for the carriage of machinery and materials for building purposes there is every prospect in the near future of the large tracts of uncultivated land being made to yield their quota of agricultural produce.

There are proofs at hand of the utility of this enterprise to the commercial community generally and to the agriculturist in the interior.

Large quantities of coffee are stored in the district of Cazengo owing to the want of carriers. Thus the produce is tied up to the serious loss of both agriculturists and merchants here. The coffee market in Europe is much better now than it has been for several months, but the merchants here are simply debarred from taking advantage of it, as they can not get the coffee off the plantations, and in the meantime they not only lose a good market but interest is running on the capital so locked up. If the railway was completed to this district all such risks would be completely done away with. If, now that they have commenced, they will go ahead and carry the line to completion as quickly as possible, the prosperity of the province would be assured. They have, however, a rather difficult country to go through before they reach Ambaca, and there is not much prospect of the line being completed within three years.

A train runs from Loanda daily over the open section, and the natives are already beginning to make use of it.—St. Paul de Loando, *November 15, 1888.*

ROBT. S. NEWTON,
Vice-Consul.

COLOMBIA—ITS PAST, PRESENT, AND FUTURE.

SPANISH SOUTH AMERICAN REPUBLICS.

Spanish South America, although settled long before English North America, was nearly forty years behind in its efforts for independence, and there can be little doubt that the example of the North American colonies contributed greatly to exciting Spanish South America to action. The first South American colonies to take the initiatory steps towards independence were Venezuela, Colombia, Ecuador, and Peru, Bolivia being the southern portion of the last. These republics are frequently called the "Daughters of Bolivar," as this great patriot was the brain power which inspired and led the people up to such desire for liberty that they rose against their tyrants,

and, after varying contests for over ten years, were declared free from the Spanish yoke. It is a marked fact, however, that Colombia was never recognized by Spain as being free from the dominion of the mother country until 1882, when a treaty was negotiated and diplomatic relations established. Chili, the Argentine Republic, and the other republics of South America were children of a later growth, and were doubtless inspired to action by the success of their elder sisters.

More or less, all Spanish South American republics are copies one of the other, save where differences in latitude make such radical changes in climate that different characteristics of the people are the natural result.

There is something worthy of note in the different results which marked the colonization of the Latin and Anglo-Saxon races. Wherever the former set foot they affiliated with the natives in social relations, crossing their blood and forming an amalgamated race. The natives continued to remain with their conquerors, and became a part of their communities. Not so with the Anglo-Saxon. Wherever he placed his standard of conquest the native retired to the bush. There was no affiliation between the one and the other; no intermarriage nor intermingling of blood. The more recently colonized cities of Australia and New Zealand are comparatively free from the "bushmen." They have been forced back before the peculiar character of the settlers. To corroborate these statements, one needs but cross the frontier line between the States and Mexico. As he crosses the Rio Grande he steps from a pure race to a mixed Spanish-Indian one. All Spanish America is a type of this, and Brazil, settled by the Portuguese, falls into line. It is not hard, when comparing the characters of the two races as colonists, to discover the cause of this result.

The Spanish-American republics made no formal declaration of independence, but city after city put forth pronunciamentos, or pronounced against Spanish rule. The three notable pronunciamentos in Colombia were Mompos, August 6, 1811; Carthagena, November 11; and Bogota, July 20, of the same year. Inspired by this, other villages joined, and soon the country became united in a common cause.

The motives which led to an open rupture with the mother country were many and grievous. For less than a tenth of the oppression the North American rose in his might, while his South American brother bore, not without murmurs, indignities which were most degrading. No native was eligible to the most menial office. The word "grandee" was law. There were no remedies for the gravest insults. The colonists were compelled to draw from Spain, and at ruinous prices, articles which were growing at their very doors. The colonist, in short, seemed to have no rights which a Spaniard was bound to respect. They can hardly be said to have been inspired to strike for their freedom, for they were actually necessitated to do so as a matter of self-preservation. Forbearance ceased to be a virtue, and with such men as Bolivar, Sucre, Santander, and others, the die was cast, and after a ten years' war the Spaniards were finally driven from the country.

Trouble, however, did not end here. It may, indeed, be said to have only begun. The newly enfranchised states from the outset were jealous of each other, and the union of the three, Venezuela, New Granada, and Ecuador, under the name of Colombia, expired in dissensions in 1830. The chronic internal turmoils and revolutions which followed, from time to time, in every Spanish-American republic are too well known to require further discussion. Some of the finest territory that the sun ever shown on is in a great measure kept a barren waste by these unfortunate intestine troubles. For foreign capitalists do not choose to invest their capital where the public peace is so often disturbed. Whether the tendency is toward improvement or not it is difficult to say, and, indeed, the pessimist avers to the contrary not entirely without reason.

On the dissolution of the old "Republica de Colombia," in 1830, that portion of which I write assumed the name of Confederation Granadina. Its area is about one-half that of the old confederation. But the people, ever restless in their independence, again and again rose in revolution, and the same territory became New Granada, and in 1863 its name was once more changed to the United States of Colombia. The latter name it retained until the revolution of 1885, when it was formally changed to the Republic of Colombia, which name it still bears.

GEOGRAPHICAL POSITION AND PHYSICAL ASPECT.

The boundaries of Colombia are from latitude 12° N. to 5° S., longitude 70° to 80° W. It is geographically the first in importance of the Spanish-American republics, as it embraces in its limits the Isthmus of Darien (now generally known as the Isthmus of Panama), the key to the commerce of the Atlantic and Pacific oceans, and washed by both. The Isthmus, fifty years ago the rendezvous of the famous "derenni," or land pirates, the terror of travelers, has now an important sea-port on each coast, and is traversed by the locomotive, the result of American enterprise, capital, and skill.

The surface of Colombia is diversified. Huge mountains raise their heads heavenward, their peaks covered with perpetual snow, in strange contrast with the plains below, not a day's journey distant, always covered with tropical verdure. It is traversed by mighty rivers, the waters of some unruffled save by the canoe of the Indian. Thousands and thousands of acres of fertile soil yet in their virgin purity have never come under the cultivation of the hand of man. Spontaneously its fruits, the staple food of its primitive inhabitants, grow in wondrous plenteousness. Its forests, livened with birds and various beasts of prey, and its rivers teeming with fish, add to the bountiful supply for the wants of man. Here one unbroken summer reigns untouched by the chilling blasts of winter. It is a great hot-house, always producing, unasked, abundance for the sustenance of man and beast.

Arteries in countries are as necessary as in the human system. What the Mississippi is to the United States, the Danube to Germany, the Volga to

Russia, the Amazon to Brazil, the La Plata to the Argentine Republic, the Magdalena is to Colombia. This river, second only to the Mackenzie in British North America, is the largest on this hemisphere, flowing in a due northerly direction. In many places it is wider than the Mississippi, and its current runs an average of 3 miles an hour. It is a majestic stream, the great artery of the Republic, opening the avenue of commerce and inviting trade which otherwise would always have remained hedged in by impenetrable forests and rugged mountains. It is navigable from Barranquilla to Honda, a distance of about 600 miles, by steamers of sufficient size to accommodate the necessary traffic. The principal tributaries of the Magdalena are the Cauca, Nare, Cæsar, Opon, Rio Negro, and Sogomoso. Some of these rivers flow from an unexplored country, inhabited only by Indians of a fierce and hostile disposition. The first steam-boat ascended the Magdalena in the year 1832. It is a hazardous river to navigate, no less than eighteen steamers having been totally lost within the last twenty-five years.

Bogota, the capital of Colombia, is situated in the "heart of the Andes," something over 8,000 feet above the sea level, and ranks as the third highest city on the Western Hemisphere, Potosi and Quito only taking precedence. There is a peculiar tradition as to the event of its founding, in 1542. It is related that three Spaniards set out with the purpose of selecting a capital for the new vice-royalty of New Grenada. One entered the territory through Venezuela, a second ascended the Magdalena, while the third's gate-way was by the Pacific coast. All meeting on the spot where the city is now located on the same day, with true Spanish superstition they hailed it as an "omen," and with great formality founded the present city under the name of "Santa Fé de Bogota." Later the "Santa Fé" was dropped, and it remains simply Bogota. Its population is estimated at about 60,000. It is situated in latitude 4° 36′ 6′ N., longitude 74° 13′ 59′ W. The temperature is from 15° to 18° C. Its climate is delightful, its plains fertile, its people intelligent, and it abounds in an infinite variety of fruits and flowers at all seasons of the year. Its market teems daily with the products of the temperate and the torrid zones.

The area of Colombia is about 400,000 square miles, and its population is estimated at between 3,000,000 and 4,000,000.

THE PEOPLE AND THEIR HABITS.

The Colombian people, generally speaking, hold the same relation toward their Spanish colonizers as do the people of the United States toward the English. There is, however, a marked difference in the "make-up" of the two populations. It has been remarked that the native or aboriginal did not retire, as did his North American brother, before the invader, but remained and became a large part of the population. The North American Indian is isolated to a great extent, rarely being seen among the whites, save in the far west, while in Colombia it may be safely said that a majority of the population in every city and town, from the coast to the furthest boundary line of the interior, are Indians, rating all the way from a pure to a more or

less mixed blood. But, in speaking of these Indians, it must not be supposed that they are to be taken in the general acceptation of the term as understood in the United States, fierce and warlike. On the contrary, they are a most peaceful and submissive people. They are short and stout (especially those in the far interior), and have a yellowish complexion, varying from a darker to a lighter shade as they are correspondingly mixed with the negro or white race. There are, however, some tribes still in their original state, equally if not more ferocious than our western tribes. The worst of these are the "Opons." They inhabit a tract of territory in the department of Santander, have no intercourse with the surrounding people, and are murderers by instinct. Another tribe is the "Guajiros," inhabiting a district to the eastward of Rio Hacha. They are less fierce, and make occasional trading trips to Rio Hacha, disposing of horses and cattle. The Guajiro horses are of particular value.

The civilized Indian population, which may be counted as about three-quarters of the whole, live in all the simplicity of nature. They are inoffensive in their disposition, and murders and robberies are hardly known among them, many of their little villages having neither alcalde nor priest. And yet they maintain order, and seem to respect for themselves those ideas of justice which many more civilized people follow through fear of the law. They are strong physically, but never energetic, such is the enervating influence of the perpetual heat of the country. Marriage among them is almost entirely unknown. They consider living together of man and woman as a kind of mutual agreement of fidelity, and a majority of the Indian women are undoubtedly faithful to the sharer of the cottage and canoe.

POLITICAL ASPECT.

After the dissolution of the first Republic a new government was organized under the style of "Confederation Granadina," being subdivided into provinces. Later, under the name of "The United States of New Granada," the provincial lines were somewhat changed and the subdivisions denominated departments. In 1863, however, President Mosquera changed the name of the Republic to "The United States of Colombia," and the several departments thereupon assumed the name of states. These states were "sovereign" in the fullest sense of the word. They were nominally independent, and had ample power to govern themselves; but all joined in maintaining foreign relations and in furthering material progress. In fact, it was a part of the unwritten law that "the Government of the union did not exceed the functions delegated to it by the states." Under that constitution the General Government had no power to interfere in a revolution so long as it was confined to the limits of a single state. The executives of states were elected, as had been previously the executives of the provinces and departments.

But after the revolution of 1885 the sovereignty of these states was suspended, the executive elective franchise abolished, and the name of the subdivisions changed again to departments. Their executives are now named

by the President. The new constitution was promulgated on the 7th of October, 1886, and it is the exact opposite of the one it superseded. If the old one was too radical, the new one is as much too conservative. The whole system of government is changed. Its object is to deprive the people of power and to centralize it in the Government at Bogota. It is the natural outcome of instability. The President, in his allocution, made the astounding statement, "we have had seven constitutions since 1821." Under this state of affairs it is not surprising that extremes are reached. The present nine departments retain the several names given to the states, and are: Antioquia, Bolivar, Byaca, Cauca, Cundanamarca, Magdalena, Santander, Panama, and Tolima.

Under the present constitution the elective franchise is circumscribed. An elector must be a male, twenty-one years of age, and must be either able to read and write, or to have an income of $500, or be the owner of real estate to the value of $1,500. This act disfranchises three-fourths of the males of age throughout the country. The president and senators must be qualified as follows: Colombians by birth, thirty years of age, with property valued at $1,200. Representatives must be twenty-five years of age, and no property qualification is required. The term of the president, by this constitution, is changed from two to six years. The present constitution recognizes the Catholic religion, but others are tolerated. Under decrees allowed by the new constitution the liberty of the press is nominally suspended. A press law is now under discussion in Congress.

COMMERCIAL RELATIONS.

The commerce of Colombia is with England, France, Germany, and the United States.

Exports.—The principal exports of Colombia are coffee, cotton, hides, bark, balsam, tobacco, ivory, nuts, and cotton seed. For statement of exports, by classes, see table 1. Table 2 exhibits the destination of such exports.

Imports.—The imports into Colombia are generally those required in a country nearly destitute of manufactures, and embrace those articles needed by the mixed population. Table 3 exhibits a statement of imports, by classes; table 4, from whence proceeding.

MARITIME FACILITIES.

The port, officially known in this report as Savanilla, is a bay of sufficient size to easily facilitate the commercial relations of the whole country. The seat of business, however, is at Barranquilla, a city of 25,000 inhabitants, and 15 miles inland from the port. This city was connected with the port in December, 1870, by the Bolivar Railroad. Previous to that time Savanilla was only visited by sailing vessels, bringing and taking only heavy freights, such as were not practicable by steamers by way of Santa Marta, then the great depot of import and export cargo. This cargo was conducted to and from Barranquilla through natural canals, called "caños," which connect the two places. These caños were navigated by small steam-boats, but the

principal part of the cargo was carried in large-decked lighters. On the opening of the railroad between Barranquilla and the port of Savanilla, Santa Marta fell into decay. Barranquilla, the capital of the province by the same name (a subdivision of the department of Bolivar), is on the left bank of the Magdalena, is the first commercial city of importance in the country, and the residence of merchants doing business through the port. It is the lower terminus for steam navigation on the Magdalena and is constantly increasing in population and importance. The question is now being agitated as to the possibility of the opening of the "Bocas de Ceniza," or the mouth of the Magdalena, to navigation. This would at once do away with railway communication, and place Barranquilla, as regards Colombia, in the same position as New Orleans is to the United States. But on account of the six months heavy trade-winds, the variation and strength of ocean currents, and the direction of the mouth of the river, it is a question whether the delta of the Magdalena can ever be permanently opened to navigation.

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MARITIME COMMUNICATION.

The commerce of the port is carried on with the outer world by the medium of the following lines of steam-ships:

Hamburg-American Packet Company (*German flag*). — First entered the port May 12, 1871; semi-monthly. A steamer of this line leaves Hamburg on the 12th of each month, touching at Havre, St. Thomas, La Guayra, Puerto Cabello, and Curaçao, arriving in Savanilla the 11th of the following month. Leaves Savanilla on the 13th of the same month for Hamburg, touching at Curaçao, Puerto Cabello, La Guayra, Ponce, Mayaguez, Aguadilla, San Juan de Puerto Rico, St. Thomas, and Havre. A second steamer leaves Hamburg the 26th of each month, touching at Havre, St. Thomas, St. Domingo City, La Guayra, Puerto Cabello, Curaçao, arriving in Savanilla the 27th of the following month. Leaves Savanilla the 29th for Hamburg, touching Carthagena, Puerto Cabello, La Guayra, Mayaguez, Ponce, St. Thomas, and Havre. Time employed on homeward trip, about thirty days. Rates of freight per ton: Coffee, 50 shillings; hides, 80 shillings; ivory nuts, 35 shillings; tobacco, 60 shillings, with 5 per cent. This line carries no passengers.

West India and Pacific Company (*English flag*). First entered the port June 14, 1871; tri-monthly. A steamer of this line leaves Liverpool on two successive Saturdays of each month, touching at Barbadoes, Trinidad, La Guayra, Puerto Cabello, and Curaçao, arriving in Savanilla on Tuesday, twenty-four days after departure from Liverpool. Leaves same day for Carthagena, Colon, and New Orleans, occasionally touching Mobile and Galveston, especially in the cotton season. From New Orleans the steamers return direct to England. Rates of freight from Savanilla to Liverpool: Fustic, 25 shillings; cotton, 35 shillings, cotton seed 30 shillings, and 5 per cent. Passage to England, £25; New Orleans, $60 (American gold). The alternate steamer of this line leaves on the fourth Saturday of each month, making four steamers on the same route per month.

Royal Mail Steam-Packet Company (*English flag*). — First entered the port September 27, 1871; semi-monthly. A steamer leaves Southampton for Savanilla every alternate Thursday, reaching Savanilla every fourth Sunday, touching at Barbadoes, Jacmel, Jamaica, and Colon. Leaves for Southampton the succeeding Tuesday via same ports. A second steamer leaves Southampton every fourth Saturday for Savanilla, touching at Trinidad, Carupano, La Guayra, Puerto Cabello, and Curaçao, and proceeding thence to Carthagena, Colon, Port Limon, and Greytown, returning again to Savanilla and proceeding home via same ports as outward voyage. Time employed on homeward trip, about twenty-three days. Rates of freight: Coffee, 50 shillings; hides, 80 shillings; ivory nuts, 35 shillings; tobacco, 60 shillings per ton, and 5 per cent. Passage to Southampton, £30 and upwards.

General Transatlantic Company (*French flag*). — First entered the port June 27, 1872; semi-monthly. A steamer of this line leaves Havre the 21st of each month, touching at Bordeaux, Santander, Point a Pitre, Basse Terre, St. Pierre, Fort de France, Carupano, and La Guayra, arriving in Savanilla on the 18th of the month following. Leaves same day for Colon, and returns to Savanilla the 23d, and sails for Havre same day, touching La Guayra, Carupano, Fort de France, St. Pierre, Basse Terre, Point a Pitre, Santander, Bordeaux. A second steamer leaves St. Nazaire the 6th of each month, touching at Point a Pitre, Basse Terre, Fort de France, and La Guayra, arriving in Savanilla the 28th of same month. Leaves same day for Colon. Returns to Savanilla on the 4th, and leaves the same day for St. Nazaire via same ports as outward voyage. Time employed on homeward trip, about twenty days. Rates of freight: Coffee, 62.50 francs; hides, 100 francs; ivory nuts, 43.75 francs; tobacco, 75 francs, and 5 per cent. Passage to St. Nazaire, 750 to 1,000 francs.

Atlas Line (*English flag*). — First entered the port September 10, 1872; semi-monthly. A steamer of this line leaves New York every fortnight, on uncertain dates, touching at Jeremie and Carthagena, arriving in Savanilla after a voyage of twelve days. Remains in port five days and returns to New York via Carthagena, Colon, and Port Limon. Time employed on homeward voyage, about eighteen days. Rates of freight: Coffee, 65 cents per sack; hides, 15 cents each; bark, $1 per bale; skins, rubber, balsam, and cacao, three-quarters of a cent per pound, with 5 per cent. Passage to New York, $75.

Harrison Line (*English flag*). — First entered the port June, 1875; monthly. A steamer leaves Liverpool every third Saturday, touching Barbadoes, Trinidad, La Guayra, Puerto Cabello, and Curaçao, arriving in Savanilla every third Monday. Leaves Savanilla same day, touching Carthagena, Colon, and New Orleans. Time homeward uncertain. Passages to New Orleans, $75. This line takes no freight from this port.

Transatlantic Line (*Spanish flag*). — First entered the port January 21, 1882; monthly. A steamer from Liverpool, via Colon and Carthagena, arrives in Savanilla the 5th of each month, and sails the 6th for Liverpool,

touching Santa Marta, Puerto Cabello, La Guayra, Ponce, Mayaguez, Porto Rico, Vigo, Corunna, Santander, and Havre, arriving on the 7th of the following month. Freights to Liverpool: Coffee, 50 shillings; hides, 80 shillings; tobacco, 60 shillings per ton, and 5 per cent. Passage to Liverpool, £30.

The above freights and passages are all payable in gold coin.

INLAND NAVIGATION.

The Magdalena is navigated a distance of about 600 miles to the city of Honda. At this point rapids, or, as they are here called, "chorros," impede navigation, though small steam-boats have been placed on the river above this point; but the navigation above is neither safe nor remunerative.

Steamers carrying the national mails leave Barranquilla on the 5th, 11th, 17th, 23d, and 29th of every month. Intermediate boats are dispatched when the accumulation of cargo requires. Additional boats also do service on what is called the Lower Magdalena, or up to a point embracing the coffee region of the department of Santander.

The river is navigated by the Compañia Colombiana de Transportes, running nine steam-boats, and the United Magdalena Steam Navigation Company, with five boats. Three other steamers, owned by private parties, also ply on this stream. A small steam-boat is at present navigating the Lebrija, a small tributary of the Magdalena. Freights from Barranquilla to Honda are reckoned by the carga, or 140 kilograms, and $5 per carga is charged, reductions being made on very heavy materials, as machinery, etc. Passages up, $62.50; down, $40. Time employed to Honda (good river), about six days; down, about three. Freight and passage payable in paper currency.

CUSTOMS DUTIES, REGULATIONS.

Customs duties are entirely specific and on gross weight. Duties are divided into fifteen classes, paying as follows: First class, free; second, 1 cent per kilogram; third, 2½ cents; fourth, 5 cents; fifth, 10 cents; sixth, 20 cents; seventh, 30 cents; eighth, 40 cents; ninth, 50 cents; tenth, 60 cents; eleventh, 70 cents; twelfth, 80 cents; thirteenth, 90 cents; fourteenth, $1; fifteenth, $1.20. An extra charge of what is termed "adicional," of 25 per cent., is collected on the original duties. Table 5, herewith, shows the customs receipts in Savanilla for 1887.

Manifests and invoices must be certified by a Colombian consul. If there is none in the port, then by a consul of a friendly nation, with statement of the fact. If there are no consuls in the port, then by two merchants, with statement. If a consular invoice is wanting at the time of the receipt of the goods, bonds may be given for its production within ninety days, and the goods will be delivered. A manifest wanting is fatal, and the vessel becomes embargoed.

Registers of vessels are to be deposited with the respective consuls of the nation to which the vessel belongs. Steamers anchored in Salgar will only exhibit their registers to the captain of the port.

Tonnage dues are $1 on every 1,000 kilograms of cargo landed. Ice, brick, and tiles are exempt. Vessels in ballast pay no tonnage dues. Regular lines of steamers carrying the Colombian mails free from port to port pay no tonnage dues. Light dues are 5 cents per ton on the first 100 tons, and 3½ cents on each additional ton.

Packing.—If convenient, goods of each class should be packed separately. If one or more classes are packed in the case, then the name, quantity, and class of material must be expressed, giving exact net weight of each class contained in the package, and the net weight of the box or bale. Otherwise the goods entire will pay the duty of the highest class contained therein. In making consular invoice the nature of the goods should be expressed in such a manner as to enable them to be classified and liquidated unattended by the opening of the packages. See model of manifest, herewith appended, and model 2 for form of consular invoice.

Weight.—The weight which will serve as a basis for every liquidation will be that which results from the custom-house examination, when the difference between it and the manifest is not less than 15 per cent., for should it prove less only a deduction of 15 per cent. will be allowed; that is to say, if a package manifested as weighing 100 kilograms result with 50 kilograms, it will be liquidated at 85 kilograms. Should the weight result more by 10 per cent. than that manifested, the excess will be fined with an extra charge of 20 per cent. on the duties.

Specifications.—Goods can not be too carefully specified. For instance, contents of a package specified as paper will not cover the case. Printing-paper pays one duty, cap and letter another, gilt and silvered a third. Inks likewise. Printing-ink pays one duty, black writing another, colored writing a third. An invoice of printing-paper was fined 23 per cent. because the invoice specified *papel blanco de imprenta* (white printing-paper), and omitted the words *sin cola* (unsized). The customs tariff must be entirely studied and the most exact precautions taken or shippers will find themselves seriously embarrassed.

Baggage.—Each traveler is entitled to 150 kilograms of personal baggage free of duty; an excess pays at the highest rate of duty. Persons bringing an excess of baggage should have it properly manifested and invoiced according to class to save expense.

COINAGE, WEIGHTS, AND MEASURES.

The French system of weights, measures, and money has been adopted by the Government of Colombia. Local weights and measures are sometimes used. The most common of the latter are the carga, or 140 kilograms; the arroba, or 25 pounds; the fanega, or salt measure of 18 arrobas; the fanega, or corn measure of 1,000 ears, and the vara, or cloth measure of 32⅞ inches. The last is the cloth measure generally in use in this country, although the yard and its significance is known.

Coinage.—Gold coins are, double condor ($20), condor ($10), half-condor ($5), two and one dollar pieces. The silver coins are, dollars, half-

dollars, 50, 20, and 10 cent pieces. A nickel medio (5 cents), cuartillo (2½ cents), and mitad (1¼ cents) have also been issued. The value of this latter metallic coinage is worthy of notice. Ten dollars in nickel weighs 17 ounces, with an intrinsic value of about 90 cents.

Previous to the revolution of 1885 the gold coinage of Colombia had a discount of about 5 per cent. less than American gold; but since that time, with the inflated issue of paper, all of this coinage has been shipped out of the country to cover remittances, and since the Government has coined a half-condor ($5), the intrinsic value of which is $3.50 in United States gold coin; also a 50-cent piece, with an intrinsic value of only 19 cents, has been coined. These last-named pieces are called cocobolas, and the country is flooded with them, save on the Isthmus of Panama, where neither they nor national bank-bills are received at any rate of discount.

Exchange, as quoted in national paper or the depreciated coins referred to, ranges from 105 to 110 per cent.

PUBLIC DEBT.

The national debt of Colombia is as follows: Interior, $29,605.70, including the issue of national bills, and calculated in paper currency; exterior, $13,435,178.25 in gold.

National bank-bills in circulation, $9,569,311.25; amount, according to law, to be issued, $12,000,000.

MINES.

Colombia is without doubt rich in mineral resources. The mountainous part of the interior abounds in gold and silver, and in some parts iron is found in considerable quantities, while on the coast, in the region of Santa Marta, copper exists. The working of the iron mines has not proved a success, while the copper has not been attempted. An American mining engineer has lately reported petroleum in very considerable quantities to exist in Tubará, 12 miles from Barranquilla, and within the limits of this consular district. But the principal mines are of gold and silver. Until a few years ago these mines were almost entirely in the hands of the English. But recently there has been an influx of American enterprise, capital, and machinery. It is too early yet to say what will be the outcome of this, but with better communication and facilities for getting the heavy machinery into place, there seems to be no reason why these mines will not be worked to advantage.

AGRICULTURE.

Agricultural pursuits are in a most primitive state. In fact, agriculture, as understood in the United States, may be said not to exist. No machinery is in use, and the native disdains even the use of the axe, preferring yet the old and more laborious instrument, the machete. The machete is a half-knife, half-scythe instrument, greatly resembling the American corn-knife. It will be many years before the improvements which make the drudgery of agriculture easy are adopted in Colombia.

MANUFACTURES.

Manufactures in Colombia may almost be said not to be worth naming. With the exception of common soap there is nothing manufactured which begins to cover the demand, unless it be the wretched rum of the country. In every manufacturing enterprise of importance which has found a footing in Colombia it has been necessary to depend wholly upon the importation of foreign skilled labor. The average Colombian brain is absolutely devoid of the genius of invention, if not, indeed, of the very power of imitation. All efforts to educate the natives into any of the branches of skilled labor have, speaking generally, proven signally futile.—BARRANQUILLA, *November, 1888.*

ALEX. J. JONES,
Consul.

(*Model No. 1.—Manifest.*)

Puerto de.....

Manifiesto de la carga embarcada en este puerto a bordo del.....*.....de.....
que carga.....toneladas segun matricula.....Capitan. Con destino a .....

No. del Conocimiento.	Embarcadores.	Marcas i Números.	Bultos.	Mercancias.	Consignatarios.	Peso bruto.	Flete.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Totales.....				.....	

Seal and certification of consul. Date and signature of captain.

* Here must be filled in the class, nationality and name of the vessel.

(1) Number of bill of lading. (2) Shippers. (3) Marks and numbers. (4) Packages. (5) Class of merchandise. (6) Consignees. (7) Gross weight. (8) Freight.

(*Model No. 2.—Consular Invoice.*)

Factura-Manifiesto de.....bultos embarcados a bordo del buque.....
Capitan.....con destino a.....a la consignacion del Señor .....
por cuenta de.....

Marcas.	Números.	Bultos.	Clase de bultos.	Peso bruto de cada uno.	Contenido.	Peso total.	Valor.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total.....bultos.					Total.....$.....		

Seal and certification of consul. Date of invoice and signature of shipper. (In triplicate.)

(1) Marks of packages. (2) Number of same. (3) Packages. (4) Class of packages. (5) Gross weight of each package. (6) Contents. (7) Total weight. (8) Value.

TABLE NO. 1.—*Showing the amount, weight, and value of exports from the port of Savanilla for the year ended December 31, 1887.*

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Articles.	Packages.	Weight.	Value.
		Kilograms.	
Alligator skins	10	80	$20.00
Bark	4,951	332,243	233,637.00
Balsam	454	18,107	22,719.00
Bird skins	25	1,285	5,630.00
Cacao	498	29,350	18,507.00
Cedar	66	500	100.00
Coffee	81,832	5,254,672	1,470,842.00
Cotton	522	108,934	22,233.00
Cotton seed	2,522	120,765	5,023.00
Corroso seed	53	2,642	265.00
Cigars	85	3,885	5,280.00
Dividivi	20	920	20.00
Fustic	80,309	2,721,215	41,225.00
Horns	57	1,840	380.00
Hides	192,128	2,030,839	759,572.50
Hats	132	5,846	47,829.00
Ivory nuts	18,635	1,116,468	88,120.00
Ipecac	6	234	280.00
Mats	133	6,250	2,820.00
Mineral	5,973	332,286	165,720.00
Plants	1,596	87,100	63,415.00
Provisions	555	21,953	8,827.00
Rum	27	1,193	1,155.00
Rubber	3,259	214,224	179,868.00
Starch	91	4,555	537.00
Skins	1,242	36,120	12,076.00
Salt	200	12,500	800.00
Treasure	(*)	(*)	3,548,533.70
Tobacco	27,330	1,879,691	401,900.00
Ties	4,491	234,630	4,491.00
Sundries	1,743	40,705	30,183.00
Sarsaparilla	24	1,420	630.00
Total	428,969	14,612,452	7,142,638.20

*Unknown.

TABLE NO. 2.—*Showing the destination of exports from the port of Savanilla for the year ending December 31, 1887.*

Country.	Packages.	Weight.	Value.
		Kilograms.	
Antilles	1,592	92,451	$71,323.10
Belgium	82	2,420	680.00
Colombia (Colon)	7,334	359,856	733,307.50
Costa Rica	164	9,840	3,724.00
England	63,041	3,123,962	2,949,225.30
France	34,659	1,384,445	883,224.30
Germany	72,356	3,856,980	664,329.00
Italy	18	1,126	1,580.00
Spain	225	2,014	1,043.30
United States	249,490	5,778,777	1,845,201.30
Venezuela	8	581	9,000.00
Total	428,969	14,612,452	7,142,638.20

TABLE No. 3. — *Showing the importations into the port of Savanilla, by classes, for the year ended December 31, 1887.*

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Articles.	Weight.
Provisions:	*Kilos.*
Unprepared	264,128
Flour	558,389
Lard	50,161
Butter	3,622
Tea	3,132
Sardines	24,703
Preserved fruits	19,229
Refined sugar	89,324
Sweetmeats	10,023
Spices	53,475
Pickles	17,914
Sundries	124,826
Total	1,218,926
Liquors:	
Brandy and spirits	111,525
Beer	173,020
Fancy liquors	72,612
Claret and white wines	403,225
Generous wines	191,984
Total	952,366
Illumination:	
Kerosene	108,214
Sperm candles	117,943
Matches	47,407
Total	273,564
Oils and liquids:	
Olive-oil	25,584
Almond-oil	35,178
Linseed-oil	13,617
Machine oil	4,521
Turpentine	6,735
Tar	11,647
Total	97,282
Arms, powder, etc	47,183
Leather:	
Shoes	44,730
Tanned leather	10,036
Various articles	22,582
Total	77,348
Glass:	
Bottles	20,192
Lamps	12,275
Glasses	32,958
Plate-glass	51,591
Looking-glasses	10,137
Various articles	81,968
Total	227,688
Wood:	
Undressed lumber	30,571
Furniture	32,287
Various articles	12,943
Total	76,341

Articles.	Weight.
Iron:	*Kilos.*
Bars and sheets	407,115
Hardware	71,180
Nails	113,737
Agricultural implements	16,896
Fencing wire	93,004
Telegraph wire	134,705
Agricultural machinery	33,297
Various machines	50,096
Various instruments	19,634
Machines for arts, etc	19,680
Furniture	12,966
Kitchen utensils	27,071
Steam-engine	25,635
Sewing-machines	33,045
Various articles	233,639
Total	1,291,200
Steel:	
Bars and sheets	39,479
Cutlery	22,208
Axes	15,810
Machetes	28,564
Various articles	5,269
Instruments of art	42,282
Total	153,612
Copper and brass (various articles)	62,300
Zinc (in sheets)	19,300
Lead:	
Bars and manufactured	42,609
Pipes	2,361
Total	44,970
Tin:	
Bars	6,237
Sheets	12,940
Total	19,177
Gold and silver:	
Bars and coin	11,831
Jewelry	815
Total	12,646
Nickel (coin)	15,514
Various materials:	
For building	61,913
Railroads	252,147
Aqueducts	41,624
Domestic use	51,067
Mining use	113,302
Total	520,053
Drugs and medicines (various articles)	306,39[illegible]
Perfumery	30,711

TABLE NO. 3.—*Showing the importations into the port of Savanilla, etc.*—Continued.

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Articles.	Weight.	Articles.	Weight.
	Kilos.		*Kilos.*
Musical instruments:		Crockery (various articles)	155,662
Pianos	13,495		
Organs	906	Clothing of all kinds	154,936
All other	4,502		
Total	18,903	Thread:	
		Linen	2,899
Paper, etc.:		Silk	86
Printed books	8,635	Cotton	85,872
Blank-books	16,619	Woolen	3,041
Wall-paper	18,602	Total	91,898
Printing-paper	44,841		
Wrapping-paper	37,258	Unclassified:	
Writing-paper	75,181	Empty bags	98,712
Card-board	15,602	Pitch	69,934
Total	216,738	Palm (for hats)	27,620
		Clocks	3,185
Articles for—		Hats	7,863
Printing-office	10,038	Buttons	2,675
Instruction	6,260	Paint	46,128
Escritoire	39,148	Cigars and cigarettes	40,428
Total	55,446	White wax	2,225
		Oakum	8,759
Cloth:		Rope yarn	12,099
Cotton	2,618,286	Fancy articles	1,130
Wool	270,278	Embroidery	3,219
Linen (fine)	34,721	Manufactured rubber	1,227
Linen (coarse)	300,186	Carriages and carts	7,615
Silk	6,840	Toys	2,636
Tarred cloth	22,748	Miscellaneous	335,222
Mixed fabrics	12,646	Total	670,727
Total	3,265,705	Grand total	10,077,234

TABLE NO. 4.—*Showing the weight and value of imports into the port of Savanilla, by countries, for the year ended December 31, 1887.*

Country.	Weight.	Value.	Country.	Weight.	Value.
	Kilograms.			*Kilograms.*	
Antilles	277,901	$142,381.40	Italy	222	$197.00
Belgium	8,995	3,208.00	Spain	152,446	45,684.50
Colombia (Colon)	23,473	61,889.00	United States	2,142,707	517,386.60
England	4,976,105	2,743,366.10	Total	10,077,234	5,514,384.10
France	1,583,766	1,356,412.50			
Germany	911,659	643,859.00			

TABLE NO. 5.—*Showing the customs receipts in the port of Savanilla, for the year ended December 31, 1887.*

Month.	Receipts.	Month.	Receipts.
January	$183,757.85	August	$271,593.60
February	169,306.25	September	354,127.05
March	178,774.90	October	263,135.15
April	216,666.70	November	271,091.55
May	285,706.20	December	435,688.00
June	262,765.95	Total for the year	3,098,913.45
July	206,350.75		

OPENING TO NAVIGATION OF RIVER KARUN, PERSIA.

[Transmitted by Minister Pratt.]

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The Persian Government, having in view the extension of the commerce and wealth of the Empire and the increase of the agriculture of Khuzistan and Ahwaz, has decided to permit merchant steamers of all nations, without exception—besides sailing vessels which have navigated the Karun heretofore—to undertake the transport of goods on the river Karun from Mohammerah to the dyke at Ahwaz, on the conditions:

(1) That they do not pass above the dyke at Ahwaz, since the navigation of the river above the said dyke is exclusively reserved for sailing vessels and steamers of the Persian Government and of Persian subjects.

(2) That they pay passage dues that have been fixed by the Persian Government at Mohammerah.

(3) That they do not carry any merchandise prohibited by the Persian Government, and that they do not remain longer on the river than necessary for the unloading and loading of merchandise.—MINISTER OF FOREIGN AFFAIRS, TEHERAN, PERSIA, *24 Sefar, 1306.*

MANUFACTURE OF RAW SUGAR FROM BEET ROOTS.

The beet roots, which have been planted with the object of sugar production, are first of all conveyed, when their leaves have been removed, into the yard of the sugar factory. Here they are thrown into a canal (*a*) provided with descents in brick-work, or with metal gutters, through which they are borne by the rushing water into the wash-house, which constitutes the first stage of the factory.

This beet conduit may be situated with advantage in a building known as the beet-root cellar, or beet-root house (*b*), whereby the beets are protected to some extent from the influence of the weather.

In place of the beet conduit a horizontal belt transporter is sometimes employed, but it must be invariably roofed over. A distinct advantage of the beet conduit over the transporter is that in the former the beets are not alone transported but also freed in the water from a portion of the impurities attaching to them without any being incurred.

These conveyers, whether of mechanical or hydraulic construction, bring the beets, as above stated, into that chamber of the sugar factory—the wash-house—which is utilized solely for washing purposes. The washing of the beet constitutes a very important element in the manufacture of sugar, for the beets are thereby freed from mold, small stones, and other kinds of dirt attaching to them, and, in consequence, not only is the machinery employed in the actual preparation of the beets preserved from injury, but the sugar ultimately obtained is kept free from impurity. So soon as the beets have been brought into the wash-house they are thrown into the washing-machine by means of a raising wheel or a chain-pump, or through a spiral passage (*c*) placed aslant. The last-named method has this special advantage, that

it serves to wash as well as to convey the beets, and permits of the raising within an hour both the beets and the water in which they are contained.

There are two kinds of washing-machines, the drum-washer (*d*) and the bar-washer (*e*). The former consists of a cylinder rotating upon its own horizontal axis, the latter of an arm, or bar, likewise turning on its own horizontal axis. Both are mounted in a trough provided with cocks for admitting and leading off water, and in both there is a stone-catcher.

In the washing apparatus the chief aim is to bring the beets as much as possible into contact with pure water, so as to be washed clean. The dirt and stones detached from the beets are deposited on the floor of the stone-catcher, or receiver, fixed to the back part of this machine, from which they are from time to time emptied out from below; the beets, however, are conveyed by a contrivance constructed for the purpose from the washing apparatus into the stone-receiver, by the arms of which their further transport is effected. The greater the area of the wash-machines the more thoroughly are the beets cleaned. It is advisable, therefore, to have two washing-machines placed one after another, and best of all two bar-washers, or one bar-washer and one drum-washer.

In order to reduce the consumption of water in the sugar factory to the lowest possible figure, the water condensed from the steam given off from the boiling apparatus in the factory is utilized for the purposes of the conduit and washing the beets.

The employment of this condensation water, which has a temperature of about 35° C., adds considerably to the effect produced by the washing-machine, and is quite indispensable when frozen beets have to be washed. In case the quantity of condensation water obtainable should prove insufficient it must, of course, be supplemented by the addition of fresh, cold water.

With the mere washing of the beets the sugar manufacturer is not content; provision is therefore made for the beets to be freed from those parts which are poor, or at least not so rich in sugar as the others, before the process of extracting the juice begins. With this object the greenish upper part of the beet is cut away. This measure is of great importance in Germany, for in that country the tax paid to the State by the sugar manufacturer on his productions is assessed on the weight of the beets, so that he would be obliged to pay on the same scale for the portions which contained but a poor percentage of sugar as for the rest. In other countries, where the method of taxation is different, less importance is laid upon the removal of the green beet-tops, and these are manufactured with the whole remaining portion.

For the purpose of removing these tops and the pebbles and dirt which may have been torn up with them, as well as any rotten parts which the beet may contain, a caroussel (*f*), or broad transporter, is placed so as to receive the beets, which are thrown into it from the washing-machine by means of the arms of the stone-receiver. This transporter is of wire and moves at a low rate of rapidity, so that the work-women beside it can cut each beet, and as far as they are able to see, to remove with facility the rot-

ten parts, the small stones, and all foreign bodies. The caroussel is a circular sieve placed horizontally, through the apertures of which the water, of which a certain quantity is thrown in from the washing-machine, may run out. Around this caroussel, which moves very slowly upon its center, work-women are also placed and perform exactly the same work as in the case of the transporter above mentioned. After passing under this thorough revision the beets are conveyed automatically from the caroussel to a perpendicular or slanting chain-pump (*g*), which provides for their passage from the wash department to the diffusion chambers.

The waste, which the work-women have separated out, is invariably put aside. There are two kinds of chain-pumps, the dredge-pump and the chain-elevator, both of which consist of a number of cup-like vessels, which receive the beets from the caroussel and deposit them in a box called the beet-collecting box. They are distinguished from one another only by the kind of connection—belt or chain—between the different cups. The term collecting-box is sufficient to explain that the beets are collected in this receptacle when the washing process is complete. Thence they are conveyed by separate lots in trucks running upon rails over a weighing-machine (*h*), there weighed, and then drawn to the cutting or slicing machine (*i*), into which they are transferred.

In Germany the weighing of the beets takes place under the control of the revenue authorities, and is to be recommended for factories in countries where a different system of taxation, or none at all, prevails, for solely by this means is the sugar manufacturer enabled to ascertain the exact quantity of beets manufactured each day. Only the approximate weight of the beets can be arrived at by weighing them as they come from the field. Dirt and all other impurities removed during the washing process are, of course, valueless, but often amount to 30 per cent. of the weight of the beets. A previous weighing can, therefore, only serve the purpose of fixing the original weight of the quantity of beets employed for the sake of estimating the price. With the above-mentioned cutting-machine we have reached one of the principal stages of actual sugar manufacture, namely, the point at which the process for obtaining the juice comes under consideration. The system most generally adopted, and the one solely employed in new factories, is called the diffusion system (the manipulation of the beet root in slices), and is the only one which we propose to consider now.

As the sugar juice, which it is intended to obtain, is contained in the cells of the beets, it is necessary to bring as many of the cells as possible into contact with water so that the latter may dissolve out the juice, an effect which is rendered possible by applying the process of diffusion to the beets after they have been cut up into slices. The laying bare of the interior cells of the beets, which is produced by cutting the beets up into thin slices or lumps, is effected mechanically, namely, by means of the slicing-machine, which is thus seen to be one of the chief factors of the diffusion system. The slicing-machine consists of a disc, rotating horizontally on its own axis, and fitted with knives. By means of the rotation the knives catch the beets

which descend upon them and cut them up into thin circles. The slices slip down beneath the knives and fall into a transporter placed to receive them. The most celebrated and therefore the most generally employed cutting-machines are either stationary or depending, and are driven by transmission gearing. Other kinds are known, but these are of inferior excellence.

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The knives employed are of very various construction, such as rib knives, goller knives, roof-rib knives, anchor knives, etc. If the beets have not been properly washed, and foreign, hard bodies, such as iron, stones, and such like, are brought into the cutting-machine, its knives are seriously damaged. These must then frequently be changed and sharpened and an interruption of the factory operations is the result. The cuts are also rendered bad thereby; they become irregular in shape, and it may be said that the diffusion suffers in consequence from indigestion. Hence the warning which must be given to expend as much care as possible upon the beet wash-house. The transporter into which the slices fall from the cutting-machine is called the filling transporter (*j*), as it serves to fill the diffusion vessels. This filling transporter is so arranged that one or the other of the diffusion vessels can be filled at will (in correct manufacture by rows), and is constructed of either a straight or a circular shape, according to the arrangement of these vessels.

We have now come to the diffusion vessels, but before entering upon a detailed description of them we will first explain the nature of the diffusion which takes place in them. By diffusion, or osmose, is understood the process of exchange which goes on between two different kinds of fluids of unequal degrees of density, contained in two different vessels, connected by a membrane. This diffusion, which takes place through a membrane, is called membrane diffusion, to distinguish it from free diffusion, which takes place freely, that is, without any membrane.

The beet juice is contained in the cells of the beets and each one of these cells is covered by a membrane. In this case, therefore, a membrane diffusion between two fluids—the juice in the cells and the water in which they are rinsed—is the only diffusion possible. In the case of the sliced beets, the large quantities of cells contained in them must be considered, the process of diffusion being here somewhat different than when only a single cell is concerned.

In order to comprehend the process, let us imagine a number of cylinders tightly closed together on their circular surfaces, and with their contents for the present moment separate. This complex of cylinders, which are filled with juice, is hung in a vessel filled with water. The diffusion naturally takes place, first of all, with the two extreme cylinders, and then gradually advances from both sides towards the middle, until the juice in all the cells or cylinders has acquired, by means of exchange, the same density as the surrounding fluid in the vessel (originally water). When this has taken place the diffusion is at an end, but it can be repeated after the whole of the fluid, now of the same density, has been drawn off. In this way the cylinders can be lixivi-

ated by constantly changing the fluid; also, new and additional complexes of cylinders can be lixiviated, when the drawn-off fluid is repeatedly re-employed. In the latter case a higher density or concentration of the drawn-off juices is obtained. By this method the saccharine juice is extracted from the sliced beets. If now, instead of the vessel filled with water, a diffusion vessel be imagined, and, instead of the cylinder filled with saccharine juice, the cells in the sliced beets, which are conveyed from the cutting-machine to the diffusion vessels in the filling transporter, we have a mechanical explanation of the entire diffusion system.

Temperature is a most influential factor in the diffusion process, for the higher it is the more rapid is the diffusion. At the same time it is not advisable to exceed certain proportions. In order to preserve the required temperature in the vessels in which the diffusion is taking place, fore-heaters, or calorisators, are employed.

It is not the object of these lines to describe in the minutest detail the nature of the diffusion, so that, after the above brief explanation, we turn back to the point at which the sliced beets are supposed to arrive in the diffusion vessels.

The diffusion apparatus (*k*), or, to put it shortly, the diffusion, consists of ten to twelve vessels (the diffusers), as many fore-heaters, or calorisators, and the necessary valve and tube fittings.

The complete diffusion apparatus is called the diffusion battery, and this can be constructed, according to arrangement, with vessels in one or two rows, or in a circle. If the diffusion battery is of one or two rows, the shape of the filling transporter is straight, and the cutting-machine can be placed at the side of the battery. In the case of circular diffusion, the filling transporter must also be circular, and the cutting-machine is placed either inside or outside the circle of the vessels, or in the center, in which case it is rotatory on its axis and fills each diffuser itself, so that a filling transporter is superfluous. In rare cases the entire diffusion battery rotates round the cutting-machine.

The diffusers are cylindrical vessels placed in a vertical position, with water-tight and hermetically-closing covers. In their upper apertures slices are thrown in from the filling transporter, and thus the diffuser is filled. Below, the diffusers are closed either by an hermetically-shutting lid or manhole, to empty the vessels of the lixiviated slices when the diffusion is completed. The filling of a diffuser with fresh slices lasts from seven to ten minutes, according to its size. With a battery of twelve vessels, one is always being filled and one emptied, while the remaining ten are operating. The diffused juice (about sixty per cent. in volume of the contents of the diffuser) is obtained by adding fresh, pure water under a pressure of one to one and one-half atmospheres to that diffuser which is about to be emptied. The water is drawn from a reservoir (*m*) high enough to produce the required atmospheric pressure, and into which it is raised by means of a water-pump (*l*). By separating out, by means of a compression pump (*m l*) applied from the

last diffuser to the last diffuser but one, the juice collects and leaves the diffuser, which is being filled with fresh slices, with a condensation of about 11° Brix, and at a temperature of about 30° C. This temperature is attained by the application of a system of pipes filled with steam. In these pipes circulates the juice, which streams through from diffuser to diffuser, and which is thus previously heated. These pipes constitute the above-mentioned fore-heaters, and the extent of their heating surface is in accordance with the length of time consumed by a diffuser in acquiring the necessary grade of warmth, and the extent of the difference of temperature between the steam and the juice.

In the first six diffusers the juice is always maintained by fore-heating, at a temperature of about 70° C., but from this point the temperature declines, so that the last diffuser which is emptied has a temperature of about 30° C., and can therefore be manipulated.

The quantity of juice drawn off from time to time is always a constant one. Continuing its journey, this diffusion juice arrives in a fore-heater (*n*), in which it is heated to 60° or 50° C., by steam produced in the last vessel of a steaming apparatus, which we will describe on a subsequent occasion. After this the juice arrives in a second fore-heater (*o*), which is heated with the spent steam of the steam-engine, and is there heated to 90° C., and is then conveyed into a measuring cask (*p*).

Before passing on to the further process of manufacture, to which the juice now obtained is subjected, we will turn back once more to the diffusion battery, in order to follow the road which is taken by the residue remaining over from the diffusion.

The juice having left the diffusers, the latter contain only the lixiviated slices, which have been deprived of the greatest portion of their juice. By opening the lids, or man-holes, at the bottom the slices are emptied out of the diffusers, and this operation takes place in the same order as the previous lixiviation. The diffusers are also rinsed out and filled with fresh slices. The lixiviated beet slices, which fall below, are received either in a brick gutter placed aslant and washed into the slice-presses by the water pouring out with them, and in which they have been rinsed, or they are received on a transporter (*q*), the shape of which is in accordance with the construction of the diffusion battery, and which, from time to time, runs beneath it and conveys away the slices to the presses.

If the presses are not set up immediately beneath the diffusion battery, but above it, the slices must be conveyed by means of an elevator (*r*) from the battery to the presses. There are various kinds of slice-presses, the construction of which differs. They all, however, have the object of separating, as much as possible, the water contained in the slices, and which amounts to about 95 per cent., so that the slices may be utilized as fodder for cattle. The water extracted by the presses is not supposed to contain more than 3 per cent. of sugar. If it should be proved that the percentage is higher, more care must be expended on the diffusion process, and either a better

lixiviation of the slices must be effected, or the water remaining over from the previous lixiviation must be retained in the diffusers and the latter filled with fewer slices.

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Latterly it has been found possible to dry the lixiviated slices very thoroughly by means of a slice-drying apparatus, the employment of which has proved highly profitable. The quantity of matter resulting from the drying process has thus been raised to its maximum, an effect not previously attainable by means of the presses. The drying of the slices has raised their value considerably as fodder, for the surplus water which they would otherwise contain interferes with the nourishment of the cattle; moreover, wet slices easily become rotten.

Let us now return to the diffusion juice, which we had accompanied as far as the measuring cask and there left. In the measuring casks a fixed quantity allotted one diffuser is measured off and allowed to run out for saturation. Saturation, or separating-out, consists in the treatment of the diffusion juices with lime and carbonic acid, whereby the non-saccharine substances are partially precipitated and partially decomposed, the remainder being preserved unaltered in solution. These non-saccharine, *i. e.*, foreign substances are present in the juice in considerable proportions, and interfere with the crystallization of the sugar, which they can, in fact, actually prevent; and for this reason pains must be taken to remove them from the juice.

There are three processes of saturation. For the first saturation (*s*) the diffusion juice is brought from the measuring cask at the same temperature as that obtained in the fore-heaters, through which it has already passed. It is then mixed with the milk of lime of a concentration of 20° Beaumé, in the proportion of about 2½ per cent. of lime to 97½ per cent. weight of the beets. The action of this milk of lime is to decompose the juice, and to combine with various organic substances (non-saccharine), which are thereby separated out from the sugar juice. The lime is immediately afterwards precipitated by means of carbonic acid, whereby a certain quantity of non-saccharine substances are mechanically precipitated, too, and the fluid, originally thick and clouded, becomes perfectly clear and bright. The first and also the two subsequent stations are conducted in a number of circular or polygonal vessels.

The process of saturation being complete the juice is drawn through sand-catchers (*t*) by means of a lye-pump, which conveys it under pressure into the filter-presses (*u*) of the first saturation, where the precipitated substances or lye is received.

The filters, or lye-presses, are classified, according to their construction, as chamber and frame filter-presses. They consist of a number of four-cornered plates (in the case of chamber-presses), or of plates and frames (frame-presses), over which cloths are stretched. The lye is deposited between the plates, or in the frames, while the fluid passes through the cloths before leaving the press, and is thus filtered. This juice, as it flows out, passes through fore-heaters, in which its temperature is raised to about

25° C. preparatory to undergoing second saturation (*v*). It is then treated once more with milk of lime in the proportion of about 1½ per cent. of lime to the beets, then saturated, and afterwards drawn once more through a sand-catcher, by means of a second lye-pump (*w*), and pressed into the filter-presses of the second saturation. There the juice passes through exactly the same process as in the first presses, and flows out to undergo the third saturation (*y*).

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Previous to the third saturation the juice is warmed by means of fore-heaters to about 15° C. and then treated in the saturators with sulphurous acid, which is obtained by burning sulphur in special sulphur-kilns, constructed near to the saturators, and which is forced into them by means of a pump. After the third saturation the juice is conveyed, by means of a third lye-pump, through a third sand-catcher (*z*), and then forced into the filter-presses of the third saturation. There the precipitate is also deposited as lye, while the juice left over is raised at a concentration of about 9° to 10° Brix into a reservoir (*B*), placed above, for containing the diluted saccharine juice, by means of a pump (*A*) specially employed for this purpose.

The lye which has been left behind in all the three filter-presses is first of all washed in clean water under pressure from the same reservoir used in the process of diffusion. This water is then added to the juice contained in the diffusers and undergoes the same process to which the juice is subsequently subjected, or it is conveyed by means of a small pump direct into the reservoir in which the diluted juice is contained. The lye contained in the presses is subsequently submitted to an evaporating process, but this measure is not absolutely necessary. The presses are opened and the lye transferred from them on a small carriage running underneath, or in a transport-worm to the lye-wagon, or it is thrown down the lye transport-worm and then removed from the factory. The lye still contains at this stage about 5 per cent. of sugar, and constitutes a serviceable product in agriculture as a fertilizer. Among its component parts are phosphoric acid, albumen, and a quantity of lime. The question now presents itself, how do we obtain the required milk of lime and carbonic acid?

These two products are obtained together from a limekiln (*C*). This limekiln consists of a hollow circular chamber of incombustible material, provided with furnaces and delivery apertures, and is generally placed in the open air in the factory yard, or in what is known as a "closed building." The lime and the carbonic acid are obtained in this kiln by calcining limestone (or chalk). The limestone destined for this purpose is drawn up in an elevator (*D*) to the highest point of the kiln or "mouth," as it is called, and through an aperture in this mouth, provided with a lid, is thrown into the kiln alternately with quantities of coke. The coke is added to accelerate the calcination of the limestone. By means of this calcining process the carbonic acid, also obtained as a lye product, collects in the uppermost parts of the kiln mouth and is pumped out by means of an air-pump, which is known as the carbonic acid gas-pump (*E*), and which is placed inside the factory.

The pump-conduit, which connects the pump with the kiln, passes on its way through a washing-vessel (*F*), the object of which is not only to cool the carbonic acid, but to free it from all impurities with which it may be mixed, such as dust, but above all from sulphurous acids. The carbonic acid gas obtained from the limekiln is mixed in the proportion of about 23 per cent. of pure carbonic acid with large quantities of nitrogen, superfluous air, sulphurous acids, and steam.

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The washer is a cylindrical or conically-shaped vessel, filled to about half of its depth with water, above which there is a perforated plate supporting pieces of limestone. The carbonic acid gas is conveyed through a small tube into the water, and when it has passed through both the water and the sieve it is pumped, by means of a carbonic acid gas pump, through a desiccator, in which the water caught up in the washer is retained. The gas is then pressed into a receiver and thence transferred to the saturators.

The calcined, or quick-lime, is drawn off in strata from the openings at the bottom of the kiln and allowed to cool in the open air. As soon as possible, when cooled, the lime is slacked with pure water, and with the aid of a lime-slacking apparatus (of various construction), the resulting milk of lime (at about 20° Beaumé) being passed through a sieve, which retains the impurities. The milk of lime is then transported, by means of a pump, to vessels specially placed for its reception above the saturators. The diluted juice, which we left in the reservoirs, is there warmed by steam, and is then run into the evaporating apparatus (*G*). In the evaporating apparatus the concentration of the diluted juice is carried out; for, after the diffusion, this juice has been diluted to about 9° or 10° Brix by the addition of the milk of lime and the sweetened water from the filter-presses. The temperature of the juice, when it arrives in the evaporating apparatus, where it receives a temperature of 50° Balling, is about 75° C. The concentration of the diluted juice is effected by evaporating the water which it contains.

The evaporating apparatus consists of one or more vessels, according as its effect is single, double, triple, or quadruple, etc. The more vessels there are in the evaporating apparatus the more economically it works; that is to say, the greater is the economy of steam. Not alone, however, does an economy of steam result from employing the greatest possible number of vessels, which, of course, represents the maximum heating surface, but there is a further and consequent economy of coal in the boiler-house, while the heating of the apparatus is effected mainly by slightly rarified steam of about 1½ atmospheres, and also by the spent steam from the steam-engines. The steam, moreover, which proceeds from the boiling juice in the first vessel, serves to heat the second vessel, and so on through the entire series. Owing to the decrease of pressure in the evaporating apparatus, the boiling point is lowered. Water which boils, under normal conditions, at 100° C., boils at a lower temperature when the pressure upon it is less. If it be desired to keep the boiling point constant, the pressure of the increasing concentration of the juice must be lessened. As an example for illustration, let us take

the quadruple effect: In a quadruple effect, about a quarter of the quantity of water contained in each vessel is evaporated; in the case of a triple effect, one-third, and so forth.

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It is thus seen that the concentration increases from vessel to vessel, and in the particular instance we are discussing reaches its highest point—50 per cent. Balling—in the fourth vessel. The steam produced by the evaporation of the water in the first vessel streams into the heating chamber of the second vessel, which it heats, at the same time that a portion of the water of the juice (as already stated, about the quarter of the total quantity of water to be evaporated) is likewise converted into steam. This steam heats the chamber containing the second vessel, evaporates the water again, and the resulting steam finally heats the fourth vessel, whence the steam produced by the repeated evaporations is let free. The first vessel, however, is heated with steam of about 1½ atmospheres.

The vapor produced by the evaporation of the juice in the first, second, third, and fourth vessels, and so forth, leaves the last (in the special case considered above the fourth) vessel at a temperature of 60° C., and can be economically employed for heating the first fore-heater, through which the diffusion juice passes previous to saturation. The vapor can then be condensed. The juice, which has attained to a certain concentration in the first vessel, is then drawn off into the second, then into the third, and finally into the fourth vessel, where it is concentrated to 50 per cent. Balling, and henceforth known as concentrated juice.

The quadruple effect here described, inclusive of the heating of the first fore-heater, which receives the diffusion juice by means of the vapor proceeding from the evaporating vessels, is a very simple affair. Highly complicated combinations may, however, be arranged, and it is possible to further utilize to some extent the vapor proceeding from the first, second, third, and fourth vessels of the quadruple apparatus which we have been describing, and even to employ it according to need or desire for fore-heating or evaporation—that is to say, decoction. The construction of these evaporating vessels is of various kinds. As a rule, however, they consist of cylindrical vessels, either in a vertical or a horizontal position, and provided with a system of heating-pipes. Latterly the Wellner-Felinck system has been most generally employed, and its capabilities have as yet been unsurpassed by any other system. In this apparatus the vessels are of a box shape and are fitted with horizontal heating-pipes. As an example, it may be stated that 1 square meter heating surface in a quadruple apparatus of this system suffices to evaporate 22½ kilograms of the water contained in the juice in one hour, while with other evaporating apparatus the maximum weight is 17 kilograms. In order to evaporate 100 kilograms of water from the juice 26¼ kilograms of steam are required by the Wellner-Felinck apparatus.

It is clear, then, that with this apparatus the greatest economy in steam and, therefore, in the coal required for the boiler is, up to the present date, attainable.

The steam which streams through the heating system of the various vessels in any kind of evaporating apparatus is invariably condensed to water. In order, therefore, to prevent this condensed water from filling up the entire heating system in the course of time and thus hindering the heating surfaces from operating, some means must be found for getting rid of this water, and this is done in the following manner:

From the first vessel of the evaporating apparatus, whether the latter produce a quadruple or a triple effect, the condensed water obtained from the spent steam or direct from the boiler steam passes into a tightly closed receiver, in which all the remaining waste water from steam of approximately the same expansion throughout the entire sugar factory is collected. This receiver is known as the waste-water tank, and is provided with an automatic or ball cock, which regulates the outflow of the water and any accompanying outflow of steam. The water collected in this waste tank is conveyed by means of a pump into the feed-water tank, and being at a fairly high temperature serves for feeding the steam-boiler. From each of the other vessels of the evaporating apparatus the condensed water flows into a special vapor receiver, is thence pumped through a ball-cock (*H*) valve (to prevent any steam coming, too,) into a reservoir, and may then be employed for slaking lime, for feeding the boiler, or, finally, in the beet conduit, and for washing the beets.

The evacuatiбn of the heating system in the evaporating apparatus is effected by means of small tubes leading from one vessel to the other and connected with the condenser. The vapor receivers are also evacuated by means of small tubes and the air contained in them is also passed into the condenser.

The evaporating apparatus itself is freed of air by the aid of an air-pump (*I*), which is required for bringing the juice to a boil at a lower temperature than 100° C. The air-pump, however, is not connected directly with the evaporating apparatus, an additional vapor receiver being inserted in the exhaust tubes, in which the vapor from the other boiling apparatus—which still remain to be described—collect, together with the vapor from the evaporating apparatus, and pass into a condenser. Here they are condensed by the injection of cold water from the reservoir, which was previously made use of in the diffusion process. This condensed water is employed in the initial stage of manufacture for washing and conveying the beets, and possesses a temperature of about 35° C. The condenser is connected with the exhaust-pipe of the air-pump, while the force-pipe of the latter machine puffs out into the open, air which the pump has withdrawn.

There are two kinds of condensers, the wet and the dry, which differ from each other by their construction and their application. The air-pump which operates with the wet condenser is also called the wet air-pump, while the dry condenser is in its turn connected with the dry air-pump. The wet condenser is situated close to the air-pump, at the upper end of the factory, and sucks in the injection water it requires from a maximum depth of 6 meters.

In this case, however, the air-pump is employed for getting rid of the injection and condensed water and of the non-condensed gases. As it is the part of the air-pump to dispose of all the water, the wet condenser can be employed in cases where this water can find no further vent. If, however, the water does not find a vent, the dry condenser must be employed. In this case the condenser is placed in an elevated position. Water is injected into it which condenses the vapor from the juice, while the non-condensable gases and air are drawn off by the dry air-pump, which takes up no water in this instance. The condensed and injected water leaves the condenser through a pipe which leads down into a waste-water tank, and may then be utilized, as already stated, for washing and conveying the beets. The dry condenser must be placed at least 10 meters above the waste-water tank.

The juice contained in the last vessel of the evaporating apparatus (in the case we have assumed, the fourth vessel) and concentrated to 50° Balling is called concentrated juice or sirup, and is raised, by means of a sirup-pump (*K*), to reservoirs (*L*) placed high up, and there kept warm by means of steam. From these reservoirs the sirup flows into the sirup-presses (*M*), which are of a similar construction to the lye-presses already described, or, in place of presses, the sirup may be run through filter bags and filtered. After the filtration the concentrated sirup flows into a special reservoir, whence it is drawn off, either direct from the vacuum apparatus or from the first boiler. The sirup-presses must be placed about three meters below the reservoir containing the unfiltered sirup.

For the purposes of explanation we will take the case in which the concentrated sirup passes into the first boiler, or fore vacuum, as it is called, and then into the vacuum apparatus. The first boiler consists of a series of vessels of the same kind as those of the evaporating apparatus, and serves, by means of the use and economy of steam, to further concentrate the juice which actually passes into the vaccum-boiler. It constitutes, therefore, a sort of fifth vessel, supplementing the quadruple effect of our evaporating apparatus. This first boiler, however, is not heated by the steam proceeding from the fourth vessel of the evaporating apparatus. It receives a portion of the vapor which passes from the third to the fourth vessel. As, however, an extra quantity of vapor is required for this purpose, more water must be added in the necessary proportion to the first three vessels of the quadruple evaporating apparatus, and the latter must possess correspondingly large evaporating surfaces.

In this case each vessel of the quadruple apparatus will not have merely to evaporate about a quarter of the water in the diluted juice, but the first three vessels will have to evaporate a large proportion. From the reservoir the filtered concentrated sirup now passes into this "first boiler" at a concentration of 50 per cent. Balling. It receives the name "concentrated sirup No. 1," and undergoes a further concentration to about 63 per cent. Balling by evaporation of water.

When the sirup has attained to this degree of concentration it is drawn off by means of pneumatic suction direct into the vacuum-boiler, or is transferred by means of a second concentrated sirup-pump to the reservoir set apart for "concentrated sirup No. 2," and is thence conveyed to the vacuum-boiler. The vacuum-boiler (*N*) consists of a vertical, cylindrical, or ball-shaped vessel, with a conical base, containing heating-worm tubes. Latterly vacuum-boilers have also been built of a box shape, with horizontal heating-tubes (Wellner-Felinck system).

These boilers can be heated with steam obtained direct from a steam-boiler, with spent steam, or vapor from the evaporating apparatus in various combinations, according to the distribution of the entire evaporation. The object of boiling the juice is for the sugar to separate out in crystalline form. The product of the boiling may either be "clear" or in crystals. This depends on the purity of the concentrated juice. By "clear boiling" is understood the production of a thick sirup, which only deposits crystals when it has been removed from the vacuum-boiler and allowed to cool. During the boiling process the sirup is perfectly clear. If the concentrated juice has been badly filtered, a quantity of non-saccharine matter is retained in it. In this case clear boiling is the sole process possible, as a direct crystallization of the sugar can not then be effected. If, however, crystals are formed during the process of boiling (which can only take place after efficient filtering), direct crystallization is aimed at.

In the latter case the yield of crystals is much larger than with clear boiling, so that this method is universally adopted when the purity of the juice permits of it. The concentrated sirup No. 2, which has been conveyed into the vacuum-boiler (in the example we have assumed), leaves the latter with a concentration of 95 per cent. Balling; that is to say, that the mass obtained from the vacuum-boiler has been fixed by the evaporation which has taken place of all but 5 per cent. of its water.

The steam produced in the vacuum-boiler by the evaporation of concentrated sirup No. 2 passes into receivers, which also contain the vapor given off from the evaporating apparatus, and the whole of this steam and vapor are then condensed to water in a condenser.

The vacuum-boiler is connected with an air-pump (*O*) similar in construction to the first one employed in the evaporating process, and both of these operate on the common condenser above mentioned. A general air-pump of large size is also occasionally employed, and serves both for the evaporating station and the vacuum-boiler.

The mass obtained from the vacuum-boiler contains, therefore, already 95 per cent. of sugar, which has now to be obtained.

It is open to employ either clear boiling or direct crystallization, according to the nature of this mass, which has also to be manipulated in one of two particular ways.

Before considering further the manipulation to which this mass requires to be subjected, it is as well to state beforehand that the mass can either be

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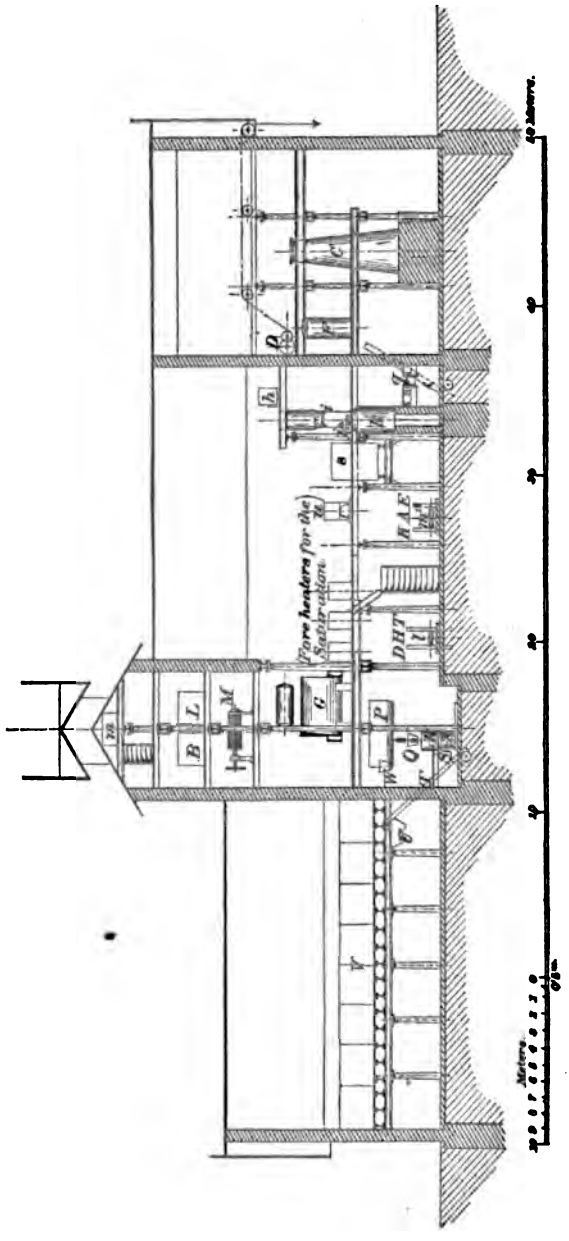
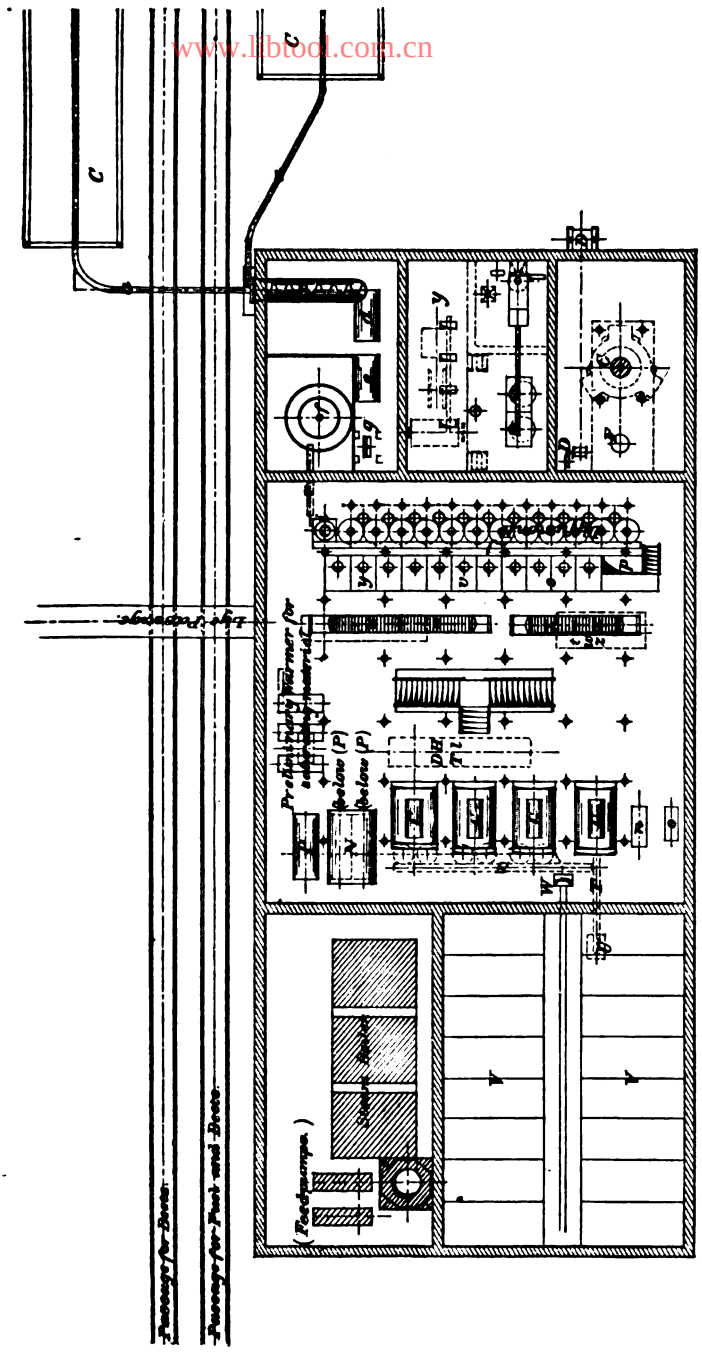
PLAN OF A SUGAR FACTORY

Consuming 6,000 centners of beets in 24 hours. Built at Grevenbroich, Rhenish Prussia.





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a. Canal. *b*. Beet-root house. *c*. Spiral passage. *d*. Bar washer. *e*. Drum washer. *f*. Carousel. *g*. Slanting chain pump. *h*. Weighing machine. *i*. Slicing machine. *j*. Filling transporter. *k*. Diffusion apparatus. *l*. Water pump. *m*. Reservoir. *m1*. Compression-pump. *n*. Fore-heater. *o*. Second fore-heater. *p*. Measuring cask. *q*. Transporter. *r*. Elevator. *s*. First saturation. *t*. Sand-catcher. *u*. Filter-presses. *v*. Second saturation. *w*. Second sand-catcher. *x*. Filter-presses. *y*. Third saturation. *z*. Third sand-catcher. *A*. Pump for diluted juice. *B*. Reservoir. *C*. Limekiln. *D*. Elevator. *E*. Carbonic acid gas pump *F*. Washing vessel. *G*. Evaporating apparatus. *H*. Pump for diluted juice. *I*. Air-pump. *K*. Sirup-pumps. *L*. Reservoir. *M*. Sirup-presses. *N*. Vacuum-boiler. *O*. Air-pump. *P*. Refrigerator. *Q*. Moveable basin and suspension line. *R*. Transport-worm. *S*. Transporter. *T*. Elevator. *U*. Sieve. *V*. Reserve receptacles. *W*. Mash machine. *X*. Centrifugal machines. *Y*. Steffen'sche separating process.

manufactured into raw sugar (with which it is the object of this treatise to deal) or direct into consumption goods. Raw sugar consists of sugar crystals hanging loosely together, of a color varying between yellow and brown, which have to be purified or refined before they can be employed for consumption. The sugar of consumption, on the other hand, consists of white sugar crystals in close conglomeration, and comes into commercial circulation in various forms.

Not always is it possible to manufacture the product of the vacuum-boiler direct into consumption goods, in which a certain degree of purity has to be attained. Raw sugar, however, can be produced in any case.

It is with the manufacture of raw sugar that we have hitherto been concerned, and to which we shall now limit ourselves.

For the production of raw sugar, then, the mass produced in the vacuum-boiler can be equally well employed, whether clear-boiled or crystallized out. In our description, however, we will only concern ourselves with the latter case, which is by far of the most general occurrence.

The mass obtained from the vacuum-boiler is first of all placed in a refrigeration (*P*), which consists of a trough provided with a stirrer and a refrigerating jacket. This construction is of the latest and most approved kind. The mass, or rather the sugar crystals of which it consists, must now be separated from the sirup, so that raw sugar may be obtained, and this is effected in the following manner: The mass is transported in quantities at a time from the refrigeration into a moveable jar (*Q*), or onto a horizontal transport-worm (*R*), and then conveyed to the centrifugal machines. A centrifugal machine consists of a cylindrical drum, over which is stretched a finely perforated sieve, and which rotates with great rapidity on its own axis. The mass placed in the drum is pressed against the sieve by the action of centrifugal force, and the fluid sirup escapes through the small apertures.

There are various kinds of centrifugal machines. In respect, however, of the safety afforded to the workmen engaged on the machine, apart from its intrinsic excellence, the Panzer, or armored centrifugal, is the best. For preventing accidents, which may be caused by overloading the drum, this part of the machine is so constructed that it may be emptied from the bottom, whereby its capabilities are also somewhat increased.

The sirup having been disposed of, the yellow sugar obtained is called the "first product," and this, having been emptied out of the drum, is placed upon a transporter (*S*) running horizontally, which conveys it to an elevator (*T*), by means of which it is transferred onto a sieve (*U*), where it is freed from lumps which it may contain. The raw sugar is then packed in sacks and sold for manufacture into consumption goods. As a rule, about 68 or 70 per cent. of raw sugar is obtained from the mass produced in the vacuum-boiler.

A commencement is now made with the manipulation of the "after products," the sirup eliminated in the centrifugal machine, and which is known by the name of "green sirup," and constitutes from 30 to 32 per

cent. of the mass produced in the vacuum-boiler. In order to crystallize the sugar contained in this green matter, a further boiling is required. First of all, the green sirup, as it runs from the centrifugals, is pumped into certain reservoirs, and, after passing through fore-heaters, arrives in a vacuum-boiler, or sirup-boiler, as it is sometimes called.

In this case, as with all subsequent decoctions of sirup, clear-boiling can alone be effected, the impurity of the sirup being so great that direct crystallization is impossible. The sirup-boiler closely resembles the vacuum-boiler (in some cases is identical with it), and is provided with a system of warming-tubes. The steam produced by the boiling of the sirup passes over to the receiver already referred to, and subsequently into the condenser in company with the steam and vapor from the evaporating apparatus and vacuum-boiler previously used, and is there condensed to water to be used as waste-water. The sirup-boiler is heated either with spent steam from the steam-engine, or with vapor from the evaporating vessels. The sirup contained in it, and which shows 73 per cent. of sugar by the saccharometer, is condensed to about 90 per cent. This apparatus has also to be connected with an air-pump, which operates, together with the other air-pumps previously mentioned, on the common condenser.

The best arrangement, however, is to provide the evaporating station with a special air-pump, and the sirup-boiler and vacuum-boiler with one in common. The green sirup is boiled from day to day, and the mass obtained from it by evaporation, and which shows 90 per cent. of sugar by the saccharometer, is called "the second product." This clear-boiled mass is then transferred from the sirup-boiler into receptacles, called reserve receptacles (r), and placed in a warm room. Here it remains for about ten days in order to crystallize out. When the crystallization is complete the product is raised in an elevator and placed in tip-trucks, which convey it to a mash-machine (W), which is provided with a smasher. The object of the mash-machine and the smasher is to pound the larger crystals small. The second product is then conveyed by means of a suspension line (Q), or a transport, warm to the centrifugal machines (X) specially constructed for it.

These centrifugals are built on the same plan as those used in the manufacture of the first product, but their drum diameter is, as a rule, somewhat smaller. The mass placed in these centrifugals is treated in exactly the same way as in the former case, the raw sugar remains behind in the drum, and the fluid which runs out is pumped up into the after-product chamber. The raw sugar thus obtained is called raw sugar of the second product, and is only distinguished from raw sugar of the first product by a less robust grain. About 25 per cent. of sugar is contained in the green sirup, which is called sirup of the second product. Having left the centrifugals, this sugar goes through exactly the same process as its predecessor, the sugar of the first product. The mass separated out from this sugar in the centrifugals contains about 75 per cent. of non-saccharine matter. It is drawn up by means of a pump into the reserve receptacles (V), and afterwards decocted once more.

The separated sirup is transferred from the reserves into the sirup-boiler (exactly as before), and there concentrated from 73 to 90 per cent., the resulting mass being called "third product." This mass is brought into reserves (*V*) in the after-product chamber, where it remains for about thirty days, in order to crystallize out. After this crystallization it goes through exactly the same process as in the previous case, raw sugar being finally obtained, which is called raw sugar of the third product. Of this raw sugar, the third product mass contains about 16 to 18 per cent. This raw sugar is brought into the market in the same way as its two predecessors.

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The sirup separated out by the centrifugals (about 82 to 84 per cent. of the entire mass) is also in this case pumped into reserve receptacles in the after-product chamber, and afterwards sold as molasses (if this has not already taken place with the sirup of the second product), or it is decocted a fourth time (in the same way, as in the previous cases), and the sirup finally remaining over from this last operation sold as molasses.

The mass of the fourth product produced from this sirup in the sirup-boiler must remain in the after-product chamber for some months, as a rule, until the next *campagne*, at a temperature of 50° C., to render the separation of the sugar of the fourth product a feasible task.

As we have mentioned molasses, we may as well consider this product a little more closely for a moment. Molasses is the last sirup formed in the manufacture of sugar, and on account of its high percentage of non-saccharine matter can form few or no sugar crystals even after lengthy stocking. It is therefore sold to spirit distilleries, or, if the local conditions are favorable, once more manipulated for the extraction of the little sugar which it contains. By employing a sugar-eliminating process (the Steffen'sche separating process is the simplest and best) (*Y*), almost all the sugar contained in the molasses may be obtained. We must refrain from describing this process, for the American patent of the same has been secured for the United States by Mr. Claus Spreckels, of San Francisco, and the process, therefore, can only be employed by that gentleman.

In conclusion we may remark that all the individual machines employed in the sugar branch are constructed in as many different ways as there are machine factories to make them. Of course these variations are only of an unimportant character, but at the same time we must take this opportunity of recommending specially one firm which concerns itself solely with the construction of all kinds of machinery and apparatus for employment in all branches of sugar manufacture, whether from beets or cane. The name of this firm is the Maschinenfabrik Langen and Hundhausen, in Grevenbroich (Rhenish Prussia). Its manufactures have always found fullest approval in the sugar factories, where they have been employed. Most of those practical and simply constructed separating apparatus on the Steffen system employed in the manufacture of raw sugar are obtained from this firm.—BARMEN, *November 24, 1888.*

JOSEPH FALKENBACH,
Consul.

Estimated cost of a beet-sugar factory, consuming daily (twenty-four hours) 300,000 kilograms of beets, by Messrs. Langen & Hundhausen, in Grevenbroich, Rhenish Prussia.

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Number.	Machinery.	Estimated weight in kilograms.	Estimated cost in marks.
	Beet-house.		
1	One spiral beet conveyer, 1,000 centimeters diameter and 8,000 centimeters long, with wheel work, propelling power, and grappling-irons, complete.....	8,000	.....
2	One beet-washing machine, 1,400 diameter, 3,000 centimeters long, stone-catching apparatus, propelling power, and bedding, complete.....	6,000	.....
3	The iron pieces for a beet elevator, 12 meters long, with iron trestle-work, tried-chains, and funnels, complete.....	25,000	13,900
	Diffusion and boiling-house.		
4	One beet-cutting machine, with receiving and throwing-out hoppers, gearing, steel spindle, mounted knife-disc (without blades), three lifting cars to be inserted on top, complete.....	.....	.....
5	Twenty-four lifting bars, mounted with receiver, exclusive of blades, (reserve).....	.....	.....
6	The diffusion battery, consisting of twelve wrought-iron vessels, 1,400 centimeters, 2,100 holes in straight plates, with connecting wrought-iron adjustage, upper and lower man-hole cover, bucket charger, and sieve bottom, complete.....	.....	.....
7	Twelve single calorisators of 4 square meters heating surface in drawn brass pipes, inclusive of stop-valve, 25 centimeters diameter, escape-valve, 20 centimeters diameter, with thermometer, complete.....	.....	.....
8	Thirty-six diffusion-valves of 125 centimeters diameter, with rising spindle.....	.....	.....
9	Twelve tapping-valves, 100 diameter, with wrought-iron lengthening spindles, cast-iron column, with lever.....	.....	.....
10	Twelve valves, 50 diameter, for air transmission.....	.....	.....
11	Twelve air-discharging cocks, with curves, 25 diameter.....	.....	.....
12	Complete pipe system of diffusion battery for juice, water, steam, and air; the diameters worked and bored corresponding to the valves at Nos. 8, 9, 10, and 11.....	.....	.....
13	Impermeable rubber and screwing apparatus for the pipe system, valves, and man-hole covers of the diffusion battery.....	.....	.....
14	Three hose cocks, 30 diameter, for water.....	.....	.....
15	The worked I iron supporters for the diffusion battery.....	.....	.....
16	One complete chip-filling transporter, with wooden gearing, without girders...	.....	.....
17	The iron pieces for a horizontal chip transporter below the diffusion apparatus, without girders.....	.....	.....
18	One horizontal working-machine, 400 diameter, 700 strokes, with Dr. Pröll's regulator, Mayer's expansion, with grappling-irons, complete.....	.....	.....
19	One horizontal steam-pump for carbonic acid, with two air compressors attached, to serve the diffusion and sulphur furnaces; steam-cylinder, 400 diameter; carbonic acid cylinder, 700 diameter; air compressor for diffusion, 200 diameter; sulphur furnaces, 120 diameter; piston for joint use, 700 millimeters.....	.....	.....
20	Eleven saturation vessels for first, second, and third saturation, of 2,600, 2,200, and 1,200 (broad), inclusive of lime-measuring vessels, armature, and transmission.....	.....	.....
21	Three stone catchers between saturation and lye-pump.....	.....	.....
22	One horizontal triplicate lye-pump for the three saturations; steam-cylinder, 425 diameter; plunger, 200 diameter; joint piston, 400 millimeters.....	.....	.....
23	Seven filter presses, with thirty chambers each, for the first and second saturations, and two filter presses, with twenty-four chambers each, for the third saturation.....	.....	.....
24	Two sulphur furnaces, with charging pans, compression stop-valves, and air transmission, complete.....	.....	.....
25	One triple effect evaporation apparatus, Wellner-Felinck system; I body, 200 square meters; II body, 200 square meters; III body, 200 square meters; total, 600 square meters heating surface; complete, including armature, evaporating liquor conduit of pipes, and three reservoirs for the condensed steam, with armature.....	.....	.....

Estimated cost of a beet-sugar factory, etc.—Continued.

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Number.	Machinery.	Estimated weight in kilograms.	Estimated cost in marks.
26	Horizontal steam-pump machine, consisting of cold water pump, with sideways attached; pumps for condensed steam, thin juice, sirup and edulcoration; water-pump, with air-pump behind; steam-cylinder, 550 centimeters diameter; cold water pump, 350 diameter, double acting; condensed steam-pump, 175 diameter, double acting; thin juice pump, 175 diameter, double acting; sirup-pump, 175 diameter, double acting; edulcoration water-pump, 150 diameter, double acting; air-pump, 850 diameter, double acting; engine for joint use, 700 millimeters, complete, with grappling-irons		
27	One feed heater for condensed steam from evaporated juice, 150 square meters heating surface, in drawn brass pipes, counter construction, complete, with armature (vertical); one feed heater for direct steam of the same construction, 45 square meters heating surface, complete		
28	One vacuum, Wellner-Felinck system, holding 15,000 kilograms feeding fluid, of 70 square meters heating surface, constructed for direct and reverse steam, complete, with armature		
29	One sirup vacuum, with vertical pipes of 60 square meters heating surface, complete, with armature, for direct and reverse steam		
30	Two horizontal cooling mash-basins, with elliptical stirring apparatus, to hold 10,000 kilograms of fluid, with water-cooler, gearing, etc., complete		
31	One wrought-iron cataract condenser, with recondensation, 13,000 diameter, 2,200 centimeters high. Total of Nos. 4 to 31, inclusive		188,278
	Sugar-house.		
32	Six armor-plated centrifugal machines, with tambour, 960 diameter, 470 millimeters high, with wrought-iron jacket reaching to the ground, complete		
33	One feeding carriage, with sliding stop-valve, and suspension track above the centrifugal		
34	One plunger pump, for transmission, of 100 diameter, 150 strokes		
35	One horizontal machine, 350 diameter, 700 strokes, with Dr. Pröll's regulator and Mayer's expansion, complete, with grappling-irons		
36	One horizontal mash for by-products, with a crushing machine, 500 diameter, 1,200 centimeters long		
37	Ten crystallization vessels of sheet-iron, with sliding stop, of 10 square meters volume each for first produce; twenty-five crystallization vessels, of 18 square meters volume each, for second produce		
38	The iron pieces for two complete cable elevators, with English chains, etc. Total of 32 to 38, inclusive		40,650
	Lime station.		
39	The iron pieces for a limekiln, with three coke furnaces, complete, with wrought-iron casing		
40	The iron pieces for a limestone elevator, with stool, English chains, etc., without wooden gearing		
41	One wrought-iron laver for cooling and washing the carbonic acid, with sieve, bottom, man-hole cover, etc., complete		
42	Three wrought-iron lime-slacking vessels, with stone catcher, delivery valve, etc		
43	One wrought-iron lime-milk settling vessel, No. 3		
44	Lime-milk stirring apparatus in wrought-iron box, with bedding, gearing, etc		
45	One plunger-pump to carry the lime-milk to the saturation, 120 diameter, 180 strokes. Total of 39 to 45, inclusive		7,360
	Boiler-house.		
46	Seven steam-boilers of 90 square meters heating surface, with the necessary armature, according to the legal requirements of the German Government		
47	One horizontal steam feed-pump, with governors; steam-cylinder, 300 diameter; pump cylinder, 200 diameter; strokes, 400 millimeters; complete, with grappling-irons; one hand feed-pump, 80 diameter, 200 strokes		
48	One feed water reservoir of wrought-iron, 1,400 diameter, 3,000 centimeters long, with safety-valve, water mark, etc		
49	Transmission for the whole factory works. Total of 46 to 49, inclusive		72,275
	Grand total (at 23.8, $76,746)		322,463

PETITION FOR THE TUNGCHOW EXTENSION RAILWAY.

[Transmitted by Minister Denby.]

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Their excellencies, Shên Pao Chêng, Chou Fu, and Liu Han-fang, conjointly submit a report to His Excellency the Viceroy Li Hung-chang, regarding the present condition of the Tien-Tsin Tongshan Railway, and advocating the extension of the said line to Tungchow, in accordance with the earnest wishes of the shareholders. Their excellencies affirm that they are prompted to make this report by the reception of a petition from certain shareholders, who plead for the said extension of the Tien-Tsin Railway, in order to safeguard their capital, and to return a greater subsidy to the State. They (*i. e.*, Shên Pao Chêng and Chou Fu) were recommended by the board of admiralty, in their memorial to the Throne last year, to be made directors of the experimental railway, and since that time they have been exerting themselves to conciliate the feelings and ascertain the opinions of the people, besides which they have directed the shareholders to elect their board of managers, and also formulated six regulations for the carrying out of the project.

As soon as all the preliminaries were arranged, the managers of the railway company energetically set about to raise funds, engage a working staff, purchase materials, and they commenced work without a moment's delay. The work proceeded rapidly and favorably, the only drawback being sometimes caused by the heavy summer rains, which put a temporary stoppage to active prosecution of the enterprise. At times, too, there were difficulties and misapprehensions with the people and gentry, who objected to the giving up of their land, but these were quietly settled by the local authorities, who were directed to manifest the strictest justice.

During the latter part of the last eighth moon the sectional line extending from Yen-chuang to Tien-Tsing, covering a distance of 175 *li*, reached its completion, its terminus being located on the north bank of the Peiho. The construction of this line, together with the cost of rolling-stock, bridges, and stations, required an outlay of over 1,500,000 taels, and of this sum a portion has been loaned from foreigners, while another portion of 160,000 taels has been borrowed from the Government funds. These loans will be returned, either when more capital has been raised or when the earnings of the working line allow of the repayment. The line is now completed, but the financial obligations of the company have not been all cleared, and it will not be until after the closing of the river that a detailed statement of all expenditures and liabilities can be made out and submitted. Formerly, when the Kaiping Railway was only a short section, the shareholders did not venture to invite his excellency the viceroy to inspect the line, but when the Tongku-Tien-Tsin Railway was completed, making, in connection with the Kaiping-Tongku section, a line of 260 *li*, they earnestly requested the viceroy to make a personal inspection.

Accordingly, on the fifth day of the ninth moon just passed, the viceroy, accompanied by the directors and managers of the railway company, made the desired inspection, proceeding through the entire line as far as Tongshan, and found the track in a very firm and solid condition, and everything highly satisfactory, including the forty-eight bridges (large and small), the locomotives and carriages, the engine sheds, etc. He found that one locomotive could draw thirty or forty carriages with the greatest speed of steamers, and he was loud and demonstrative in his praises.

When the shareholders heard how pleased the viceroy was with the railway they were all overjoyed, and will now engage in the enterprise with greater zeal than ever. But now, inasmuch as all difficulties with the people in the matter of purchasing land have been settled, and the company is perfectly capable of managing its own affairs, there is no further need of the present directors' services, and they would respectfully beg to resign. Fearing, however, lest there may be no one to render protection, they would suggest that Liu Han-fang, the acting customs *taotai* of Tien-Tsin, and Hu Jê-fen, territorial *taotai*, may be appointed to afford such assistance as may from time to time be required. The directors before retiring would submit a petition, which they have received from certain shareholders, setting forth the ad-

vantages of an immediate extension of the line to Tungchow. This petition states as follows: Although the present line of railway is in its experimental stage, yet the freight from coal and merchandise is already considerable, beside which from five hundred to eight hundred passengers daily travel in the trains. Since freight and passenger traffic in a comparatively out-of-the-way region is thus satisfactory, it is evident that the people are well pleased with the innovation, and the enterprise has every prospect of success. In the future, railways will be of the greatest utility to the State in the matter of coast defense, inasmuch as they will enable soldiers, arms, and ammunition to be transported with the greatest facility and rapidity. But in the initial stage of any great enterprise the people are prone to entertain fears and suspicions, and will not take active participation therein. It was absolutely necessary, therefore, to temporarily contract a foreign loan in order to arrive at a speedy completion of the line, and thus fulfill the desire of his excellency the seventh prince. It is quite impracticable, however, to at once undertake the extension to Shan-hai-kuan, because that region being near to the sea, desolate and unpopulous, business can not be profitable, and merchants will not subscribe to the shares. In western countries, when railways were first introduced, they were located through the most prosperous and populous regions, so that the people's confidence was at once secured.

After considering the matter from every point, whether for the advantage of the Government or the railway corporation, the petitioners are of the opinion that a wise policy would require the line to be extended to Tungchow, and when that extension is completed other lines will be easy of accomplishment. There are five important considerations why this extension is advantageous:

First. In the present state of China's requirements nothing is more urgent than coast defense, and in order to provide for coast defense nothing is more needed than funds. If sanction be given to the construction of the line to Tungchow, the shareholders are willing that one-tenth of their net earning should be annually given to the coast-defense funds as a return to the board of admiralty for the granting of the concession. Though no fixed estimate can be given to this annual subsidy, yet it is reasonable to expect that the amount will not be trifling, and this additional income may be regarded as a part of the revenue. If, by reason of the Tungchow extension, the business of the Tien-Tsin-Tongshan line should be materially increased, the shareholders of that line will also be willing to similarly subsidize the coast-defense funds, and thus considerable additional income will be derived.

Second. In the transportation of tribute rice to Tungchow, whenever the river becomes shallow, the railway can be utilized with much greater economy than by the use of boats, besides securing freedom from stealing and dampness to the rice. And whatever else the Government has to transport, the railway will carry it with great economy and surpassing speed.

Third. The track of the railway is laid on a high and solid embankment, and this, by its being located along the side of a river, will serve as a barrier against flood, so that when the Yun-Ho or the F'eng-Ho overflows, the fields and houses will be protected from inundation. The bridges along the line will afford adequate outlets for the flood-water to spread itself. The above three considerations are of great advantage to the Government.

Fourth. The country between Tien-Tsin and Peking during the season of the autumn rains is exceedingly difficult for traveling, and whenever any river overflows much of the land is flooded, so that traveling is attended with great hardships. The students who proceed to Peking for the literary examinations and those merchants who trade between Tien-Tsin and the capital are all eagerly looking forward to the speedy construction of the Tungchow line. When the line is completed flourishing market towns will spring up along the route, and great business activity will be given to the different cities, towns, and villages, so that an increasing demand for boats and carts will be created. Taking the Tien-Tsin-Taku section as an illustration, it is absolutely certain that boatmen and carters along the line will not be deprived of their livelihood, but, on the contrary, their earnings will be increased.

Fifth. The Russian merchants all forward their tea to Russia via Tungchow, and during *the season when* the tribute rice is being transported there is an insufficient number of boats,

and much trouble arises therefrom. If a railway line be constructed, transportation can be made by land as well as by the river, and we should reap the profit of the freight to augment the working income of the line. These two considerations are advantageous to the public.

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A railway, in order to be capable of successive extensions, must be profitable to the capitalists as well as to the Government. The Tien-Tsin-Taku line being located adjacent to the Peiho and the Taku Bar, much of the freight is monopolized by steamers and sailing vessels, so that the earnings of the line from its passenger and freight traffic will hardly be adequate to liquidate the company's debts, to pay the Government a subsidy, and to defray the working expenses of the railway.

Without the assistance of the Tungchow line the funds of the company will soon be exhausted, and the enterprise, although fairly commenced, will be difficult of achieving success. In the memorial of the board of admiralty last year, it was stated that when the mines in the vicinity of Peking should be developed railway connections can be made. The mines to the east of Peking are now in need of railways to connect them, and if an extension be laid to Tungchow, much advantage and convenience will accrue therefrom, and the mercantile public will eagerly come forward to share in the enterprise.

After this line is constructed, not only will it be practicable to construct the Shan-hai-kuan line, a distance of only over 200 *li*, for the protection of our northeastern frontiers, but wealthy men will be found who will invest their capital to construct a line to Chingkiang-fu, a distance of over 2,000 *li*. His excellency the seventh prince has the welfare of his country at heart, and whatever is of real advantage to his people is fully within his comprehension. Just now all classes in Tien-Tsin and Tungchow, without a dissentient voice among them, are eagerly waiting for the speedy completion of the desired line. If sanction be granted, the petitioners will undertake to invite shares and raise the necessary capital, and employ the present experienced staff of engineers and workmen, thus to secure speedier completion of work and greater economy of expense. They earnestly hope that the above considerations may be immediately laid before his excellency the viceroy, and by him submitted to the board of admiralty.

The above petition was received from the shareholders. The directors beg to remark, that in the memorial of the board of admiralty last year, it was provided that, upon completion of the Tien-Tsin-Tongshan Railway, it should be extended to Shan-hai-kuan. The company's shareholder's, however, now request for the extension of the Tungchow line first, and it would appear that, while for considerations of coast defense the Shan-hai-kuan line is more urgent, yet, for reasons of pecuniary profit, the Tungchow line demands prior construction. Last year, when steps were being taken to construct the Tien-Tsin line, because merchants were unwilling to invest their capital until permission was granted to build the Tungchow line, it was stipulated in the sixth regulation that, whenever future extensions of the railway should be made within a distance of from 300 to 500 *li* from Tien-Tsin, it should be incorporated within this company, and this arrangement was sanctioned. The present petition of the shareholders, therefore, is pertinent, as the question discussed concerns vitally their interests. The directors submit these considerations to his excellency the viceroy, that he may communicate them to the board of admiralty, and by them laid before the Throne.

Shên Pao-Tsing, formerly provincial treasurer of Fukien, at present employed in the north, Chow Fuh, provincial judge of Chihli, formerly *taotai* of Tien-Tsin, and Liu Han-Fang, acting *taotai* of Tien-Tsin, petition the viceroy, Li Hung-chang, to lay their project of extension of the railways before Prince Ch'un (the Emperor's father), the head of the Hai Kûn Yamên, or admiralty. The following is a summary of the petition or report:

The Kai-Ping Railway, from Tang-Shan to Yen-Chwang, 85 *li*; thence to the river bank outside Tien-Tsin west gate, 175 *li*, is in fine working order, no hitch having occurred except some delay caused by the heavy rains. The cost, including rolling-stock, bridges, stations, and godowns, has come to something over 1,500,000 taels, including a temporary foreign loan, a Government subsidy, and the contributions of the Chinese shareholders. The subsidy is 160,000 taels, and after the ice sets in there will be leisure to furnish the Government with

a detailed account of how the money has been applied. The railway already built, 260 *li* in all, was traveled over personally, on October 9, by the viceroy from Tien-Tsin to Tang-Shan, traversing an iron bridge of 800 feet over a river, and forty-eight other wooden and iron bridges, and he expressed himself much pleased with its solidity and smoothness. Every engine can draw from thirty to forty cars. The popular prejudices against railways have vanished. Grateful for the patronage afforded by the Government, three of the principal Chinese shareholders, Chên Ch'êng-teh, Wu Kwangtsi, Yueh Hien-t'ang, and Chih Teh-t'ang, have handed in a petition to the before-named officials for submission to the admiralty. Their report to the latter board gives this petition, which is to the following effect:

"The popularity of the railway is shown by its success even in the comparatively unimportant part of the country where it first began, as it obtained every day from five to eight hundred passengers, besides coal and other freight. Its extension, therefore, to Tungchow, in the first place, is strongly urged, and this should be done before building a railway to Shan Hai Kwan for the following five reasons, the first three of which involve the interests of the Government as well as of the shareholders and the public:

"(1) If the railway to Tungchow be sanctioned, the company are prepared to pay the admiralty 10 per cent. on the profits. Although these can not, of course, be exactly foretold, they can not fail to be considerable, and this percentage will form a source of revenue as constant and lasting as customs dues, etc. Should the K'ai-p'ing-Tien-Tsin line receive a development in consequence of the opening of the new line in continuation of it, a similar percentage will be paid by that line also, which will be no small assistance to the admiralty (Hai-Kün Yamên).

"(2) In the matter of grain transport there will also be great advantages in the railway over the present system of conveyance by water; economy, freedom from the delay caused by the frequent shallowing, and from the theft of rice by the boatmen, who sprinkle water into the rice to conceal their thefts by swelling its bulk, and thus cause it to rot. Economy of time and money, also, for the Government when the transport of Government stores or cargo of any description is in question.

"(3) The embankment will serve as a long dyke to protect the villages and fields from the periodical inundations of the Yün Ho and Fung Ho. The surplus water will still, however, find a means of egress by the arches of the bridges and by the drains which will be built.

"(4) During the rainy season, just before autumn, carts and horses find great difficulty in getting along, while the water-road is impeded sometimes by floods, sometimes, on the other hand, by shallowing of the water. All the students going to Peking for examination and all the merchants who travel that way will look on the new railway as a 'boon and a blessing.' The stations en route will each promote traffic and trade in its own neighborhood and give employment to numerous carts and boats, as has been found already on the Tien-Tsin-Taku line.

"(5) Russian merchants sending tea to Siberia all send it from Tien-Tsin to Tungchow, and much of this tea will be sent by railway, as they constantly find great difficulty in getting boats owing to these being monopolized by the grain-transporting people."

When the railway to Tungchow is made it will then be more practicable to build eastward to Shan Hai Kwan, some 200 *li*, and even southward to Ts'ing Kiang, over 1,000 *li*, those railways which the Imperial Government thinks so important from a military point of view. In the meantime the completion of the Tien-Tsin-Tungchow Railway will insure to the Government the supply of funds, which is of more immediate advantage, and by its financial results will inspire the public with that confidence which will elicit the contributions required for greater enterprises. At present the company have at their disposal the services of an experienced personnel and skilled labor, and before their dispersion the opportunity should be taken of utilizing them for the work in which they have already succeeded so well.

The above remarks of the unofficial committee meet with the warm support of the before-named officials, who remind the viceroy that the backwardness of shareholders in coming forward was due to their uncertainty whether the Tien-Tsin Railway would be continued to

Tungchow, all being of opinion that this would be the best paying section. To reassure them the sixth regulation promised that, if conceded, the concession for all railways extending to a distance of 500 *li* from Tien-Tsin should be given to the original company.

To this report the viceroy has replied, expressing his satisfaction with the result of his tour of inspection on the Yenchwang-Tien-Tsin and Yenchwang-Tangshan lines, which will be of great value for the safe and speedy transport of troops and munitions of war, "still better than steamers," as he expresses it. His excellency declares that he believes the new railway will afford the five advantages detailed by the unofficial members (the Chinese are nothing if not numerical). From Tien-Tsin to Tungchow lies the great road from south to north, and a railway between these two points is bound to pay well and to benefit both the Government and the public in general. The viceroy, therefore, has great pleasure in communicating to the Hai-kün Yamên the petition of the company to be allowed to extend the line to Tungchow.

THE RAMIE PLANT.

[No. 275, British Diplomatic and Consular Reports.]

In my commercial report of 1886 I gave an account of the cultivation of the ramie plant in the province of Gerona, and, having received many inquiries as to this production from England, I will point out what industries are applicable to this plant, according to information published by Señor Francisco Flotats Obiols, professor of agriculture in Barcelona.

LINEN AND HEMP.

The qualities of the ramie plant are almost similar to those of flax and hemp, jute, and other textiles of the same family, and it may be easily substituted with advantage where resistance is necessary in stretching, such as in shoemakers' and pack thread, fishing and other cord, tickings, hose, etc.

All these objects, manufactured with the fiber of the ramie plant, possess a resistance little known, and in fire-hose, for example, there is an excessive resistance before bursting. The resistance and durability of the fiber of the ramie plant is so much greater than that of jute, that the latter will be very little used in the making of sack and other coarse cloths in future, without taking into account the little resistance it has and the ease with which it rots when in contact with liquids, neither would it be more advantageous to mix jute with flax and hemp, as ramie will be much cheaper and better than all these.

In the manufacture of handkerchiefs, muslins, etc., the fineness and solidity of the ramie offers greater facility, and the texture will be better. The same may be said of articles of cordage. Economically speaking, the use of the ramie will be more advantageous. Its price is the same as that of flax and hemp. The separation of the fibers and the combing and threading is done with the same machinery employed in the linen industry without increasing the price; then the pound of ramie, after undergoing these operations, will be worth as much as that of linen and hemp combined. Comparing the textures of ramie without mixture with similar ones of flax and hemp, the same weight of ramie contains about twice the number of yards as that of flax and hemp. For example, No. 5 of ramie weighs 5 pounds, and has 3,000 yards; and the same number of flax and hemp, 1,500 yards, has the same weight; thus it is evident that with ramie one may manufacture double the quantity of cloth as with the same weight of linen and hemp, and it will be, consequently, half the price, lighter, more solid, and less liable to rot when in contact with moisture.

COTTON.

Ramie can never be substituted altogether for this textile, but there is no doubt that ramie may be mixed with cotton with advantage.

The price of cotton thread per kilogram is more than that of ramie thread, and the expenses of spinning cotton less than those of ramie, and a quantity in weight of cotton-fiber produces a greater number of yards than the same in ramie, the relation being 3 to 2; that

is, with 2 kilograms of cotton cloth a thread equal in length may be made as with 3 kilograms of ramie of equal fineness.

WOOL AND SILK.

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The ramie is destined to act an important part in conjunction with other articles. The silk qualities it possesses gain for it a preference to either cotton or wool for female apparel, etc., nevertheless, it can never take the place of wool completely. Wool gives heat to the body, whilst the ramie gives coolness; wool is heavy, ramie is light. The mixture of ramie and wool is preferable in winter clothing, and ramie alone in summer clothing.

Ramie and silk possess also qualities which united make better mixtures than those of silk and cotton, used so much in these days. The substitution would, naturally, produce a great revolution in the silk industry, but the tissues would be more durable, and the gloss more lasting than cotton.

SEWING THREAD.

For thread making ramie is the best, for from it you can make all sorts of threads; string made with ramie will be stronger and more lasting than that of cotton, and will have a flexibility difficult to obtain from either flax or hemp. Silk threads for sewing-machines can be replaced with advantage by ramie threads, and, in England, much of what is sold for silk is really made of ramie. Ramie fiber has been woven in looms for wool and flax, and good results have been obtained; and, at the last industrial exhibition at Marseilles, a collection of dresses was exhibited made of ramie thread, showing a process for spinning it analogous to that of wool. Many experiments have been tried in France, and with excellent results, in spinning ramie. It has been manipulated in the same manner as wool, and a thread obtained which might be employed in the manufacture of cloth, and it is believed that a mixture of wool and ramie may be obtained without difficulty. In Gerona, where the plantations and manufactories are, the machinery used is that of M. Favier.

The best productions used for coloring ramie are indigo for blue, saffron for rose, the castor-oil plant for orange-brown, and the turmeric for yellow, and, according to experiments already tried, there is no difficulty in coloring ramie.

The ramie dyed preserves its color much better than any other textile fiber. In the Conservatory of Arts and Sciences in Madrid exists a collection of ramie threads which was placed there thirty years ago, and its color is preserved better than if it were silk or superior cotton.

Señor Francisco Flotats Obiols declares that the ramie is the most valuable fiber which industry can desire, as it can form threads to imitate perfectly well cotton, with the advantage of being of greater strength and duration; that all kinds of linen can be made from it, stuffs for trousers, shirts, and cloaks, sails for ships, sackcloths, cords, etc., as well as lawn and fine lace, which are much superior to those made of flax and hemp. He is of opinion that in a short time the ramie cultivation and industry will become the center of an industry in Gerona, which will cause a revolution, and will throw the cultivation of wine into the shade and eventually destroy it. Machines are already in use capable of decorticating the fiber on a profitable scale. It is said that the ramie produces three harvests in the year, and that the cultivation, requiring the minimum of labor, will become a popular industry.

BILL RELATING TO LABOR OF YOUTH AND WOMEN IN THE NETHERLANDS.

I inclose herewith a translated copy of a bill very recently brought into the States General of the Netherlands by the minister of justice, which relates to and makes provisions for the prevention of excessive labor (*overnatigen arbeid*) of youthful (*jengdige*) persons and women.

From what I can learn it seems that the bill, as now pending, or possibly in a slightly modified or amended form, will be passed and speedily become a law. Regarding it as touching a subject of considerable and general im-

portance, one in which many of our people have always manifested a deep interest, I had it translated and herewith submit it. — AMSTERDAM, *November 21, 1888.*

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D. ECKSTEIN,
Consul.

We, William III, by the grace of God King of the Netherlands, Prince of Orange-Nassau, Grand Duke of Luxemburg, etc., etc.:

Whereas we have deemed it advisable, that in subrogation to the law of 19 September, 1874 (Staatsblad, official paper, No. 130), provisions should be made for the prevention of excessive labor by young persons and women;

So have we, having heard the Council of State, and in common accord with the States General, been pleased and understood, as we are pleased and understand by these presents:

SECTION 1. — INTRODUCTORY STIPULATIONS.

ARTICLE 1. Under labor is understood by this law all and every work done in or on behalf of any trade, except:

(1) Open-air work in or on behalf of farming, market-gardening, cattle-breeding, or turf-digging establishments.

(2) Work done out of factories and workshops in or on behalf of the trade of any person in whose house the workman is living, insomuch as said work is apt to occur likewise in a household or stable-yard where there is no business carried on.

SECTION 2. — CONCERNING THE LABOR OF YOUNG PERSONS AND WOMEN.

ART. 2. It is prohibited to make a child under twelve years of age perform any labor.

ART. 3. By a general administrative measure, it will be either unconditionally or conditionally prohibited by us to make a child under sixteen years of age perform certain descriptions of labor, because of the dangers which such descriptions of labor, either in a general way or from neglect of certain conditions, by the materials used or by the processes of manufacturing, involve for the health or the life of children.

ART. 4. It is prohibited to make the labor of any person under eighteen years of age, or in factories and workshops that of a woman, begin earlier or cease later than at 5 o'clock in the morning and at 7 o'clock at night, for the period of from 1 April to 30 September, and at 7 o'clock in the morning and 7 o'clock at night for the rest of the year. In behalf of some special trades, an exemption from this prohibition may be granted by us, by a general administrative measure for young male persons, under such conditions as may prove necessary.

ART. 5. He who has a person under eighteen years old, or a woman, performing labor for him is bound to provide for such labor being relieved by resting times of a joint duration of at least two hours, two of these resting times of at least a quarter of an hour each in the morning and in the afternoon, and another of at least an hour at noon. He takes care that said persons and women do not remain during resting time at noon in any closed locality which is destined for labor.

ART. 6. It is prohibited to make a person under eighteen years old, or a woman, perform labor on Sundays in factories and workshops. In behalf of labor performed by Hebrews, an exemption from this prohibition may be granted by us, under such conditions as may prove necessary.

ART. 7. The articles 4 and 5 are not applicable to labor performed in or on behalf of the shipping and sea-fishing trade, on board of ships.

ART. 8. It is prohibited to make a woman perform any labor in factories and workshops within four weeks after her confinement.

ART. 9. Any person being found present, except at meal times, in a closed locality where labor is being performed, will be esteemed to perform labor there himself, unless there be proof of the contrary.

ART. 10. He who makes a person under eighteen years of age perform labor must be provided with a ticket, mentioning the name, Christian name, birthday, and place of such person, the name and residence of the head of the family with whom, or the establishment where he is living, and of the party who employs him. The latter is obliged to exhibit this ticket, when asked for, to the officials mentioned in the article 13. These tickets are drawn up after a model established by us, and are signed and delivered by the burgomaster of the locality where such young persons are going to work. The tickets and required birth certificates are delivered gratuitously. Within twenty-four hours after the business relation between the young person and his employer will have come to an end, the latter is bound to hand back the ticket, recording the dates of appointment and discharge, to the burgomaster who has delivered it.

ART. 11. He who makes one or more persons under eighteen years of age, or women, perform labor in factories or workshops is bound to procure a list, signed by him, and showing the names and Christian names of such persons and women, the beginning and end of the resting times mentioned in article 5 for each of them in particular, to be permanently hung in a conspicuous spot in such localities where said labor is being performed.

SECTION 3.— PENALTIES.

ART. 12. Transgression of any stipulation of the present act, except that in article 15, or of any stipulation of the general administrative measures promulgated by virtue of the articles 3, 4, or 6 of the present act, is liable to confinement for at least fourteen days, or a fine not exceeding 75 guilders. If at the moment when the feat was perpetrated no two years have elapsed since a former conviction of the culprit for a like or some other transgression of this act, except that of the article 15, has become irrevocable, the penalties may be doubled.

ART. 13. The investigation of transgressions of this act, and of stipulations of the general administrative measures promulgated by virtue of the articles 3, 4, or 6 of the present act, is intrusted, besides, to the persons designated in the article 8 of the code of criminal law, to the horse-police-guard, all Government and local police officials, and the officials of the Government sanitary superintendence.

ART. 14. The officials mentioned in article 13 have at all times access to all factories, workshops, and ships. On admittance being refused to them they will procure themselves entrance, if need be, by means of the public force. Factories, workshops, and ships, serving at the same time as dwelling-places, and factories and workshops which are accessible only through a dwelling-house, will not be entered by them against the will of the master, unless by virtue of a written order by the burgomaster or the judge in the district court. Of such proceeding a judicial report is made up by them, and a copy of the same served upon the person whose residence has been entered, within forty-eight hours.

ART. 15. The officials named in article 13 are bound to secrecy as to everything which comes to their knowledge in factories, workshops, ships, and dwellings concerning the business carried on therein, provided there be nothing in it contrary to the provisions of this law.

Any one violating on purpose the secrecy prescribed in the preceding paragraph will be punished with imprisonment not beyond six months, or a fine not exceeding 600 guilders with or without additional deprivation of the right to fill public offices. No prosecution will take place unless an action be brought by the head or the manager of the concern or the under- taking.

ART. 16. The facts made punishable by this act are considered as transgressions, except the fact made punishable by the second paragraph of article 15, which is considered as a misdemeanor.

SECTION 4.— CONCLUDING STIPULATIONS.

ART. 17. This act is not applicable to labor in trading or professional schools, Government educational institutions, work-houses, and prisons, nor to such labor as forms part of military service.

ART. 18. This act enters into force on the 1st of May, 1889. On the same day the law of 19 September, 1874 (Staatsblad, official paper, No. 130), is abrogated.

Be it known and decreed, that this act be inserted in the Staatsblad, and that all ministerial departments, authorities, colleges, and officials whom it may concern, shall look to its punctual execution.

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COASTING TRADE OF CHINA.

In the enormous and yearly increasing coast and river trades of China the American flag is practically unrepresented, unless by three or four so-called lorchas or small sailing vessels of semi-Chinese type on the Yang-tsze-kiang. This trade is capable of almost unlimited development, and the regular steamer lines are year by year realizing handsome profits.

The Yang-tsze River is navigated by Chinese and British steamers only, whilst not more than twelve or fifteen years ago nearly all the foreign trade was carried in American bottoms. The present Yang-tsze steamer navigation lines are those of Messrs. Butterfield & Swire, a wealthy London firm, who manage a large fleet of vessels on the coast and rivers; Messrs. Jardine Matheson & Co., another well-known firm; and Mr. George McBain, an enterprising British merchant of Shanghai. The China Merchants' Steam Navigation Company, a purely native company, has also a fleet of coast and river vessels. Independent of the freight there is an immense native passenger traffic both on the coast and river. This has hardly received proper attention in the past, the steamers being for the most part suited for cargo only.

The Yang-tsze-kiang is navigable by steamers of 12 feet draught from Shanghai to Ichang, a distance of 963 miles. Immediately above Ichang are the rapids, extending a distance of about 3 miles. These rapids pass through deep gorges in the mountains. The current is swift and the bed filled with projecting rocks. Native boats, drawing from 4 to 5 feet of water, pass with impunity. Against the current they are drawn by trackers along the cliffs. Beyond these is a rich and populous country, a reach of 360 miles, to the considerable city of Chung-King. Between Ichang and Chung-King are eleven official cities and about fifty unwalled towns and villages, offering a tempting reward in their trade and commerce. The problem of the navigation of the rapids by steamer has not yet been solved. A steamer, however, has been built for this purpose, and only awaiting permission from the Imperial authorities to make the experiment. If successful, it is understood that Chung-King will be opened to foreign trade, and the commerce of the rich province of Szechuan, the prize for the competition of the adventurous merchant. There are at present on the Yang-tsze River five open ports, viz, Chin-Kiang, Wuhu, Kiu-Kiang, Han-Kow, and Ichang. The ancient capital, Nan-King, is not exactly a port open to foreign commerce, though the China Merchants' Steamer Line has a wharf there upon which they discharge and receive freight. The other foreign lines stop there merely in the stream for passengers, which are brought off in small boats. In the navigation of this river, and for the requirements of travel

and freight, innumerable native junks and boats are employed, giving occupation and livelihood to great numbers of people, men and women, for women take a hand in the management of the boats. But on account of their superior speed and comfort foreign steamers are gradually superseding the native boat. Travel and trade will increase year by year as the natives become familiar with the quick dispatch and comfort of the foreign steamer and the use and convenience of foreign goods.

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For the coast trade steamers (propellers) of from 800 to 1,000 tons net register are the best. They should not draw more than 18 feet loaded, and should be capable of steaming at least 12 knots an hour, if needed, but 10 knots would suffice for economical speed. Their between or upper decks should be fitted for passengers and light cargo, and great attention should be given to ventilation and convenience for native cooking, etc. The crew can always be had of Chinese, including a petty officer or two. Under foreign control they are perfectly trustworthy. A small deck saloon for first-class passengers is advisable, with say 10 or 12 state-rooms. For the river side-wheel steamers have proved the most serviceable and handy, 1,200 to 1,500 tons, or even a little more, should be the average capacity; the draught, loaded, 12 feet. Smaller vessels, of 500 or 800 tons, are necessary for the winter navigation of the upper river. All these vessels should have full power, say 14 or 15 knots, to overcome the strong current, especially during the summer.—CHIN-KIANG, *October 12, 1888.*

A. C. JONES.

REPORT ON CIDER.

In this county (Cornwall) cider is chiefly made from the apples that are not good enough to sell for cooking or dessert purposes. The best cider, however, is made from special sorts of apples, most of which are only locally grown. I know of one exception, an apple called "Fox Whelp," the trees being produced in Worcestershire, the apples from which make the finest cider obtainable.

The process of cider-making is as follows: The apples are allowed to fall from the trees and are all gathered up about once a fortnight, each gathering being placed in heaps by themselves, where they remain until sufficiently hoarded, which may be from two to four weeks, when they are taken to the mill, which grinds them into pulp. This may be turned by manual or other power. The pulp is then placed in layers on the vat of a screw-press, each layer being wrapped together by strong, coarse cloths spread underneath, the sides and ends being folded over so as to be underneath the next layer. When a sufficient number of layers of pulp have been placed under the press the latter is applied by using a lever turning a pinion wheel, which simultaneously turns the screws. The said screws may be 7 feet long and 4 inches in diameter. By these means the cider may be all extracted in a few hours. The cider at this stage is very sweet, even though it may have been made from apples with an acid taste. It is then placed in a large cistern, where it

remains for a day, or generally a few days, until fermentation has well set in, when the surface of the cider will be found to be covered with small particles of the pulp which forms a uniform layer. This is now carefully removed, or, better still, the cider is drawn off underneath and the refuse left behind in the cistern. The cider may be allowed to go through another fermentation in the same way, or it may be placed at once in casks, where it will continue to ferment until all the "grape sugar" contained in it has been converted into alcohol. The casks are then securely stoppered down with cork.

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The great point aimed at throughout is to secure cider that shall not be too acid to be palatable. This can not be attained unless the apples are fully ripe and well hoarded. Some people affirm that frequently changing the cider from one cask to another during its fermentation helps to preserve its sweetness, whilst others infuse different chemical preparations in it while it is fermenting to secure the same result. I do not believe that any cider is exported from this country.

The price realized at present is: For ordinary kinds, £1 10*s.* per hogshead; for good, £2 per hogshead; very prime, £3 to £4 per hogshead.—FALMOUTH, *November 7, 1888.*

HOWARD FOX,
Consul.

TRADE OF CHINA FOR A NUMBER OF YEARS.

The trade of the United States with China consists of a steady volume of exports of tea and raw silk, and imports of coarse cottons and petroleum. The value of this trade for the years 1880 to 1887, inclusive, is as follows:

	Haikwan taels.*
1880	10,311,442
1881	13,522,647
1882	11,696,858
1883	10,060,356
1884	10,697,965
1885	11,613,124
1886	14,333,024
1887	12,314,310

From these figures it will be seen that the trade is a steady one, averaging about 12,000,000 Haikwan taels, or $14,400,000, according to the customs returns, which does not include a considerable amount of American goods imported from Hong-Kong and European countries, as transshipments of which no definite data can be obtained.

The question of stimulating the consumption of our goods in China is one to which I have given much thought. There are, undoubtedly, conditions connected with our commercial relations with China which make the

*The value of the Haikwan tael at average sight exchange on New York, London, Berlin, Paris, and Hong-Kong, respectively, for 1887 = United States gold, $1.20; 4*s.* 10¼*d.* English money; 6.18 francs French money; 4.95 marks German; 1.54 Mexican dollars.

question of special interest and attention. It is not simply the placing our goods on the market at a price that can not be bettered by competitors that requires our attention. Every inch of the ground of comparative quality and cost of our present annual trade of $15,000,000 is strenuously contested by our merchants. Their field of operation, however, is circumscribed, for lying beyond the reach of mercantile enterprise there are vast markets in China still unopened.

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In this connection it is encouraging to report that the Tsung-li Yamen have at last granted permission to the *Kuling*, the pioneer steamer, which is owned by a joint stock company, with its head-quarters in London, to proceed to Chun-King, on the Yang-tse River, 400 miles above Ichang, the present limit of steam navigation. This is the entering wedge for the establishment of foreign commercial relations with the extensive province of Sze-Chuen, with its vast resources and sixty millions of people, and even beyond it to the province of Yunnan. The importance of this step and the interests involved were fully set forth in my number 41, of date October 22, 1886.

It is scarcely within the scope of a trade report to discuss so great a question as that of trade possibilities in these vast fields for future enterprise. I can only suggest the probable results that would follow greater privileges to our commerce dependent on treaty legislation. At present American and European merchants in a great measure are restrained to the following treaty ports:

	Estimated Chinese population.
Newchwang	60,000
Tien-tsin	950,000
Chefoo	32,000
Yang-tse ports:	
Ichang	34,000
Hannkow	770,000
Kin-Kiang	53,000
Wuhu	72,000
Chin-Kiang	135,000
Shanghai	355,000
Ning-po	240,000
Wêu-Chow	80,000
Foo-Chow	630,000
Tamsui	100,000
Takow	235,000
Amoy	95,600
Swatow	31,000
Canton	1,600,000
Kiang-Chow	40,000
Pakhoi	25,000
Total	5,537,600

SHANGHAI, *October 12, 1888.*

J. D. KENNEDY,
Consul-General.

BLOCKADE IN ZANZIBAR.

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IMPERIAL GERMAN LEGATION,
Washington December 17, 1888.

The undersigned, Imperial German Envoy Extraordinary and Minister Plenipotentiary, has been instructed to inform the United States Government officially, that, inasmuch as the German settlements which have been founded on the coast of Zanzibar, in pursuance of treaties concluded with the Sultan, have been attacked by armed bands of seditious inhabitants of that ruler's dominions and of the neighboring districts, under the leadership of slave dealers residing there, the Government of His Majesty the Emperor has deemed the establishment of a blockade of the coast of Zanzibar to be necessary, and that, in accordance with an arrangement made with the Royal Government of Great Britain, a blockade has been proclaimed by the commanders of the German squadron and of the British squadron in those waters.

The undersigned has the honor most respectfully herewith to transmit to the Honorable Secretary of State of the United States the text of this proclamation, which was published in the Reichsanzeiger (Imperial Bulletin) of the 4th instant, to the end that he may, if he thinks proper, be pleased to bring it to the notice of those whom it may concern.

The undersigned avails himself, etc.,

ARCO.

The Hon. THOMAS F. BAYARD,
Secretary of State of the United States.

ZANZIBAR, *November 30, 1888.*

By command of our high Governments, and in the name of His Highness the Sultan of Zanzibar, we, the admirals in command of the German and English squadrons, hereby proclaim a blockade of the unbroken coast line of the Sultanate of Zanzibar, including the islands of Mafia, Lamu, and other small islands lying near the coast, between latitude 10° 28′ and 2° 10′ S. The blockade is, however, only designed to prevent the importation of war material and the exportation of slaves. The blockade will begin on Monday, December 2, 1888.

(Signed.) DEINHARD,
(Signed.) FREMANTLE.

COGNAC BRANDY.

Cognac brandy is distilled from the wine grown in the district of which the town of Cognac is the commercial center. This brandy is divided into two principal classes, the one being designated as "champagne" brandy, and made from wine grown on that part of the district which from remote antiquity has existed in the form of cultivated plains; the other class, as "bois" brandy, grown on territory which, until the present century, mostly abounded in trees, is subdivided into "premiers bois," "fins bois," "bons

bois," "bois ordinaire," and "bois à terroir." The last named is the product of the sandy coast of the department of the Charente Inferieure and of the adjacent islands. On account of the unpleasantly strong taste of the soil which characterizes this "terroir" brandy, it cannot be employed, except in very small proportions (not over 5 per cent.), for blending with other brandies without injury to the flavor of the latter. It is not exported to either the United States or England, but much of it goes to northern France, Belgium, and Holland, the whiskies of which regions are supposed to be improved by being cut with the "terroir," and the remainder is converted into neutral spirits. These, like other spirits, are used to adulterate brandy.

This sandy coast district of the Charente Inferieure has suffered but little from the phylloxera, the nature of its soil being unfavorable to the spread of the disease. In the remainder of the "bois" district the ravages of the phylloxera have been formidable, and the vineyards of the "champagne" country it has entirely destroyed. No champagne brandy has been distilled since the year 1878, when the phylloxera first made its appearance in the valley of the Charente River.

The following has been the extent, during the last five years, of the vineyards of this district in hectares (1 hectare = 2.471 acres):

Year.	Charente.	Charente Inferieure.
1883	59,450	94,173
1884	34,053	82,164
1885	26,023	59,217
1886	23,457	51,604
1887	23,337	42,062

After having waited, apathetically, for years, the people of the two departments have finally come to see the necessity of making serious efforts to preserve what remains of the vineyards and of replanting those entirely destroyed. To assist them in accomplishing that purpose, the inhabitants of Cognac have this year established in the town a professorship of viticulture, the professor to be salaried by the town, and to advise the owners of vineyards, gratis, as to the best means of preserving or of reconstituting their plantations in case they have been destroyed. Against the further extension of the phylloxera plague, sulphur of carbon and sulpho-carbonate of potassium, properly applied, seem to be perfect remedies in most cases, and it is confidently believed that they will prevent a further diminution of the vineyards. As regards the replanting of vines, all American vines, as direct bearers of grapes, have in these departments so far proved a failure, the wine produced from them being of a quality very inferior to that of the native wines. These vines, too, have proved of but slight resistance against the attacks of the phylloxera. Other kinds of American vines, which do strongly resist this insect, and which in other parts of France have, as graft-bearers, been of such eminent use, have not succeeded in this district, owing to the character of the soil. This consists of a very deep and very friable calcareous stone, with a covering of from 4 to 6 inches of vegetable

mold, mixed with small, pebble-like soft limestones in the "champagne" regions, and of from 6 to 9 inches in the "bois" districts, excluding from the latter the sandy "terroir" belt above referred to. In order to find, if possible one or more varieties of vines sufficiently phylloxera-resisting in such a soil as that of the two Charentes, the French Government last year sent Mr. Viala on a mission of discovery to the United States. Although on his arrival there he was informed that the kind of soil he was looking for did not exist in the country, Mr. Viala finally succeeded in discovering large tracts of it in the great cretaceous belt of northern Texas. Of the vines there found Mr. Viala recommends the Cordifolia, the Cinerea, and the Vitis Berlandieri de Planchon as good phylloxera-resisting graft-bearers to the viticulturists of the Charentes, warning them at the same time not to employ the varieties of the vines mentioned when grown on alluvial soil. The Berlandieri especially grows often and vigorously enough on soft, pebble-like calcareous soil, not covered by any earth at all.

I have referred to Mr. Viala's discovery principally because, in view of the fact that the quality of brandy depends entirely on the character of the soil, that discovery of the friable limestone lands in Texas may become of the greatest importance to that State, the only one, as far as now known, possessing large tracts probably capable of producing brandy similar in quality to that of the celebrated Cognac district. Of course, the Cognac vines, the Chasselas and others, would have to be grafted on the native vines. The production of pure Cognac brandy is now very small; many years must therefore elapse before the vineyards of the Charentes are restored to anything approaching their former productiveness, and the moment, therefore, seems favorable for attempting the planting of vineyards, each vineyard on a small scale, but in many different parts of the soft, calcareous tracts of Texas, with a view of practically ascertaining what kind of brandy may be manufactured there.

The wine produced in the department of the Charente and that of the Charente Inferieure from the year 1877 to the year 1887, both inclusive (the former year being the one before the first appearance of the phylloxera in the district), has been as follows:

Wine crop of the Charentes (in hectoliters).

Year.	Charente.	Charente Inferieure.
1877	3,568,424	4,980,839
1878	2,054,510	4,631,751
1879	549,142	1,307,768
1880	835,807	1,873,944
1881	574,230	1,706,729
1882	246,961	1,177,251
1883	306,389	1,461,884
1884	216,790	1,144,819
1885	112,690	609,152
1886	75,412	698,802
1887	70,769	601,774

Quinquennial wine crop.	Charente.	Charente Inferieure.
1872-'76	15,628,710	26,024,905
1877-'81	7,582,113	14,509,531
1882-'86	958,242	5,394,508
1887	70,769	601,774

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The entire wine product of the Charentes, except, as before mentioned, a part of the wine grown in the "terroir" district, is annually converted into brandy. The average strength of the wine, unfortified, is 7°, and the standard strength of newly made brandy is 60°; it takes, consequently, about 8½ hectoliters of the wine to produce 1 hectoliter of brandy. Persons interested in the subject can therefore easily calculate the quantity of brandy made during each of the above years or any period of them.

Nearly the entire quantity of Cognac brandy is shipped from the port of Charente, an insignificant proportion only from other ports, and that principally from Bordeaux. From the first-named port, during the period 1886–'88, an average shipment per year of Cognac brandy was made of one-half less than the average yearly shipment of the ante-phylloxera period. The decline of shipments during the corresponding years from Bordeaux is much smaller, if any at all.

The consumption of Cognac brandy in France during the last ten years has not diminished. But while the shipments have declined only one-half, the above table of crops shows that the average yearly production of pure brandy during said period of 1886–'88 could have been only about one-ninth part of the quantity distilled during an average year of the time before the ravages of the phylloxera commenced. This difference, therefore, between the decline of shipments and that of the production of brandy throws some light on the extent to which brandies of late years have been adulterated.

To the United States higher priced and therefore better brandies are sent than to some other countries. About 50 per cent. of the brandies exported to the United States are invoiced at 300 francs per hectoliter or under, 25 per cent. at from 300 to 500 francs per hectoliter, and 25 per cent. at from 500 to 800 francs per hectoliter; in this last division, however, I have included about 5 hectoliters at 1,000 francs per hectoliter. During the present year the price of wine in the two Charentes has been from 100 to 110 francs, and during the preceding year from 110 to 120 francs per barrel of 2 hectoliters and 5 liters. The price at which newly distilled pure brandy of standard strength may be imported into the United States, on the basis of 100 francs per barrel of wine of 2 hectoliters, the wine having an average strength of 7°, is as follows:

	Francs.
8½ hogsheads of wine at 100 francs = 2 hectoliters of brandy	850.00
Cost of distilling said wine	20.00
Cost of one barrel containing 2 hectoliters of brandy	25.00
Freight to Bordeaux, shipping commission, stowage, etc	6.65
Commission to agent in the United States (2½ per cent.)	22.52
Profit on 924.17 francs at 15 per cent	135.37
Price of 2 hectoliters of brandy	1,059.54
Or, per liter	5.60

The agents in the United States, through whom the business of the Cognac houses is transacted, receive, however, oftener 5 per cent. than 2½ per cent. If the two hectoliters, instead of being sent in barrels, are sent in bottles, twenty-two cases at 5 francs each are required. These 110 francs include bottles, labels, corks, capsules, etc. Bottled brandy is usually diluted with distilled water to reduce the strength of standard brandy 10 to 15 degrees. By comparing the percentages above given of the quantities of brandy shipped to the United States at and under certain prices with the foregoing example of the selling price of 2 hectoliters, one may arrive at a correct estimate of the possible purity of the brandy imported.

The least objectionable manner of adulterating brandy is to mix well-rectified spirits with the wine and let this mixture pass through the usual process of the threefold wine distillation, but the cheapest kinds of brandy are not seldom adulterated by unscrupulous persons by blending unrectified or poorly rectified spirits (made of beets, potatoes, and other substances) not with the wine, but with the brandy directly after its distillation.

Before the phylloxera period considerable quantities of brandy, which at that time was still really pure brandy, were kept in stock for the purpose of aging. This article has since, from year to year, enormously risen in price, and has had a tendency to become more and more concentrated in the hands of the wealthier firms. Very little of this brandy enters into consumption in its original condition. It is gradually nearly all employed, in a greater or smaller proportion, to feed (*i. e.*, to improve) the taste of new brandy distilled since 1879. That the great majority of the Cognac merchants furnish as good and pure an article as the prices their customers are willing to pay enable them to furnish, I have not the slightest doubt.—COGNAC, *December 16, 1888.*

OSCAR MALMROS,
Consul.

COMPLETION OF HEREFORD RAILWAY.

The laying of the rails on the Hereford Railway has recently been completed. This railway is about 30 miles in length, and extends from Cookshire to Hereford, P. Q., where it connects with the Upper Coos Railway, extending from Canaan, Vt., to North Stratford, N. H.

The consular agency at Hereford is so located as to amply accommodate all shippers in procuring necessary consular certificates for merchandise going to the United States via the port of Canaan, Vt., from Cookshire and other points on said Hereford Railway, and at the same time this consulate and its agency at Lineboro' will afford equal convenience and accommodation to those shippers whose merchandise will enter the United States via the ports of Island Pond and Newport, Vt., Cookshire being located, also, on the International Railway, referred to in said dispatch.—COATICOOK, CANADA, *January 9, 1889.*

FRANK W. ROBERTS,
Consul.

GERMAN AGRICULTURE.

In my last annual report, dated January 30, 1888, I wrote that the German Reichstag in 1885 was hopeful that the rates of duty, then increased on cereals, would secure sufficient protection and compensation necessary to compete with foreign countries working under more favorable conditions. This expectation was not realized. On December 21, 1887, an additional increase was enacted, raising the rate per 100 kilograms (2.2 cwts.) from 71 cents to $1.19 on wheat and rye, oats from 35½ to 95 cents, and barley from 35½ to 53½ cents.

The effect of this legislative measure will, however, hardly satisfy the farmers. As appears from the subsequent synopsis, the average wholesale prices, in spite of a repeated increase of duties in 1885 and 1888, have, generally, remained on the same scale as in 1884, anterior to the first increase of duty upon cereals.

The four cities hereafter mentioned represent different regions in Germany.

Markets.	1881.	1882.	1883.	1884.	1885.	1886.	1887.*	1888.*
Wheat.								
Berlin	$52.02	$48.05	$44.03	$38.05	$38.03	$38.09	$35.00	$39.50
Dantzic (northeast)	50.01	46.07	43.04	37.04	34.01	33.00	29.09	30.70
Cologne (west)	56.03	54.00	48.05	42.08	41.03	39.08	37.06	41.40
Lindau (south)	61.05	57.65	54.02	49.09	46.06	48.04	44.08	49.70
Rye.								
Berlin	46.04	36.02	34.04	34.01	33.04	31.00	26.00	30.20
Dantzic	44.08	33.06	32.04	33.00	31.02	28.05	23.01	26.80
Cologne	51.08	42.04	37.03	36.04	35.09	33.08	29.06	32.00
Lindau	52.03	45.07	47.05	43.05	42.03	40.06	40.04	39.00
Barley.								
Dantzic	36.02	31.03	31.05	37.09	31.05	28.09	21.01	25.80
Lindau	50.07	46.05	44.05	45.03	42.05	42.00	40.06	39.00
Magdeburg	44.06	43.01	39.05	41.09	37.06	37.04	34.08	.....
Munich	45.05	44.04	40.05	42.00	38.06	38.00	38.00	40.40

*September.

It is true that, comparing the years 1887 (September) and 1888 (September), an improvement in prices is apparent; but parties familiar with the subject admit that this increase is chiefly due to the shortness of the crop of 1888 and to the fact that large agricultural districts under cultivation lost their entire crops by disastrous inundations in the spring.

The yield of the crop in Prussia for 1888 (returns for the whole of Germany are not yet published) fell behind that of 1887 by 15.5 per cent. as far as refers to winter wheat, 18.7 per cent. as to winter rye, and 6.7 per cent. as to summer barley; or, in absolute figures, the total yield, according to the returns in the month of October, amounted to the following figures in double centners (2.2 cwts. English):

	1887.	1888.
Winter wheat	17,354,608	17,656,209
Winter rye	56,535,601	45,947,603
Summer barley	13,512,333	12,600,258

In short, the entire Prussian crop this year fell behind an average crop, as the following figures show, a yearly average crop being taken as 100: Winter wheat, 82.5; summer barley, 78.2; winter rye, 73.5; oats, 74.8.

Considering these facts, it is interesting to read what Dr. von Lucius, chief of the agricultural department, says in his annual report for 1887, recently published:

For a period of thirteen years Prussian agriculture was exposed to a severe crisis, becoming more menacing every year. What about the middle of the present century began — namely, the complete opening of vast districts of production by a surprising development of traffic facilities and the opportunity offered for quick and cheap transportation of agricultural products from the remotest parts of the globe to the west European markets — ripened within that period prolific results. Since then the east of Europe and other continents have commenced to send, in annually growing quantities, their surplus of agricultural products to the west of Europe, seeking a market here.

Immense and constantly increasing supplies from Africa, America, and Australia had caused a falling off of wool prices so considerably that the raising of shearing-sheep was constantly declining, while the cultivation of many commercial plants, such as oleaginous fruits, dye-plants, flax, etc., almost succumbed to foreign competition, and cheaper stuffs were imported from abroad. Finally, the production of grain was seriously menaced in Europe.

Russia, whose remotest provinces had been opened to trade by railways and other transportation facilities, made her appearance in the European markets every year with immense quantities of grain. America increased its production on an even larger scale, and fostered by cheap freights, imported likewise in large quantities wheat and Indian corn into Europe. India, finally, with its rich vegetation, after abolishing all measures intended for a restriction of exportation and after constructing an extensive canal and railroad system, entered into competition with constantly growing quantities.

Grain prices, considerably low, made farming almost unprofitable. Similar was the condition of cattle breeding. Cattle for slaughtering purposes were shipped, in yearly increasing quantities, from the United States and Canada to England, and greatly embarrassed the sale of German fattened cattle. Fresh meat, packed in refrigerating compartments, arrived on board of regular freight vessels from Australia and North and South America in the ports of England and France, where our formerly profitable exports of fattened sheep and cattle met with overwhelming competition. Prices became lower and lower every year, and our dairy products, especially butter, depending upon foreign markets, encountered a dangerous rival in the much cheaper margarine article.

Since 1883 other secondary, though important, branches of our agricultural industry, such as the manufacture of ardent spirits and beet sugar, were affected by a similar crisis. Germany, compelled, for the sake of her own economical situation, to extend the production of spirits beyond the supply wanted at home, found her efforts to export more and more checked by increased rates of import duties in Austria, Russia, Belgium, and recently also in Sweden, Roumania, etc., where the system of drawbacks, export bounties, and low freight rates aided in developing their own industries. Exports stagnated, the prices for spirits fell so low that the German spirit industry became extremely precarious.

The beet-sugar industry suffered nearly as much. The once profitable period prior to 1875 came to an end when the heavy crops of grain in all countries interested led to overproduction. The London market was overstocked, and sugar quotations reached a point making production almost unpaying.

To remedy these evils, the German Government, since 1879, has resorted to several legislative measures. Although protective duties on farming products can not fully neutralize the influence of great price conjunctures in foreign markets, still they were thought fit to attenuate the same. Germany was undoubtedly benefited. A general crisis was delayed, the enter-

prising spirit of the farmers was again encouraged, a further decline of prices prevented, and the revenues of the State increased, thus removing the necessity of additional taxation to meet the requirements of the State.

Though the crisis bore severely upon German agriculture, great was approximately the progress made in all branches during that time by a more assiduous attention to "deep culture," by improving the character and quality of products by technical and other appliances, and by reducing the expenses of production.

German imports for 1887 of cereals for consumption.

[India is not separately mentioned.]

Country.	Wheat.*	Rye.*	Barley.*
Via Bremen	141,630	393,696	170,363
Via Hamburg	226,778	740,593	569,103
Belgium	341,498	238,062	91,451
France	.....	132,302	70,759
Netherlands	500,878	491,038	157,773
Roumania	.....	66,032	.....
Austria-Hungary	1,044,304	.....	3,204,714
Russia	2,558,924	4,168,327	759,326
United States	540,679	76,466	.....
Other countries	117,862	78,919	91,767
Total imports	5,478,553	6,385,435	5,115,256
Total exports	28,399	31,376	207,475
Harvested	28,308,040	63,757,340	22,055,040
Used for seed	3,286,750	9,940,740	2,608,802
For consumption	29,156,960	57,267,530	25,316,830

*In 100 kilograms, equal to 2.2 cwts., English.

The agricultural situation here justifies the anticipation that the tendency is towards more protection. Protection benefits the producer and increases the revenues of the State, two significant facts which have a powerful bearing upon legislation. Consumers may object, but their objections are ineffective, for reasons easily understood. International reciprocity treaties are suggested and occasionally entered into to harmonize conflicting interests, but the great diversity of the latter give but limited encouragement to the hope that in the near future a halt will be called in the further expansion of the protective policy.—BERLIN, *December 13, 1888.*

F. RAINE,
Consul-General.

ENGLISH AND CONTINENTAL SPINNING-MILLS.

The English cotton-spinning industry has maintained its rank as the largest and most important one in Great Britain. It is, moreover, authoritative for the whole of Europe as regards technical institutions and the price of yarn.

That this is so a glance at the following figures will fully demonstrate. In 1887 the number of spindles was—

	Spindles.
England	42,740,000
All other parts of Europe	23,180,000
America	13,500,000
India	2,420,000
Total	81,840,000

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In the same year the consumption of cotton was—

	Pounds.
England	1,514,521,000
All other parts of Europe	1,459,119,000
America	944,758,000
India	300,000,000
Total	4,218,398,000

England, therefore, owns more than one-half of all the spindles of the world, and consumes more than one-third of all the cotton. Her production of yarn amounts to 14,500,000 hundred-weights, and is constantly increasing. The English spinning-mill is unequaled in regard to the capacity of its machines and the economy of its productions. This is shown by a recent article by F. Bertheau, of Zurich. In spite of the apparent perfection of the English machines efforts are constantly being made to improve them still further by increasing their capacity and lowering the expense of production. The latter problem is solved by building the machines larger and stronger. The machine which ten years ago had but 100 spindles has to-day 1,270. The number of revolutions, formerly 8,000 per minute, has been increased to 11,000. The card has been brought to a capacity of 200 pounds against 80 pounds, and the latter machine has been so improved that the cotton need only be passed once through in order to clean it, instead of twice, as formerly.

Ingenious inventions to supply the machines with cotton automatically have been introduced.

The English are in all mechanical work ahead of the rest of Europe. They build the most mills owing to the increase in their industry and to the fact that old mills are being constantly destroyed by fire. They are also able to change old machines, built fifteen years ago, for new ones without financial loss, as the cost of a machine in an English spinning-mill is balanced in fourteen years by crediting its account with 1 franc yearly per spindle. In other words, in an English mill the machinery pays for itself in fourteen years, while in all other parts of Europe it takes from twenty-six to twenty-eight years. England being therefore in a position to build more new machines is far ahead of the rest of Europe as regards machinery, and is able to overcome all opposition.

Since the passage of the limited liability act, about 1870, regulating the lawful requirements of limited companies, great changes with regard to the constitution and management of English spinning-mills have taken place. This act removed the personal and joint responsibility of the shareholder,

and created a limited responsibility. This caused a large reduction of the private mills, while a large portion of them were changed to limited companies. New mills are nearly all such corporations, because of their enormous size, 60,000 to 140,000 spindles operating in a single mill. To consolidate these companies was easily arranged, as the price of a share was from £1 to £5. Of course these amounts could later be doubled or trebled. The shares in this way became very popular, and in Oldham, the classical center of the spinning industry, for instance, they are held by all classes of people, with one remarkable exception.

The workmen, who had been depended upon when the low price of the shares was fixed, refuse to subscribe, the reason being that they can not be shareholders in a mill and at the same time make claims for a reduction of working hours and an increase of wages. A workman holding stock would, during a strike, lose both his wages and the interest on his investment.

An English spinning association is so constituted financially that one-half or only two-fifths of the capital is raised on the stock, while the rest is procured on mortgages for short or long periods, with chargeable interest. It is obvious that the shareholder is likely to receive a better interest if one-half or more of the capital is obtainable at 3 to 4 per cent. than if the whole capital was realized by issuing shares paying 5 per cent. interest.

The cost for one spindle in a new mill in Oldham, exclusive of working capital, amounts to 20 shillings, or even less, while in other countries it is double this for steam and three times as much for water-power.

The continental spinner must, in addition to the cost of his English rival, add the following items:

(1) *Increased cost of land.* — The English spinner rents a small tract of land for ninety-nine years and pays a very low price for it. The continental spinner has to buy larger tracts of land, as he needs more buildings, and if water is required, the expense of purchasing water-power and building canals is very heavy.

(2) *The higher cost of building.* — In England are engineers who devote themselves solely to building spinning-mills, and who undertake the work *en bloc*. Iron and brick are cheap in England, and workmen are employed by the job.

(3) *The cost of adjoining buildings.* — The English mill is limited to the factory. There are no large magazines for yarns, no repairing shops, no residences for managers, clerks, and workmen. Cotton is stored in the neighboring railway magazine, the yarns partly in the cellar of the mill, where they are compressed by steam or water, or, sometimes, in public store-houses. Repairing is done in workshops specially built for this purpose. Clerks and workmen must find their own residences.

(4) The continental spinner who buys English machines must add to the cost of the same 10 per cent. ad valorem for freight, insurance, duty, and extra expenses 6 to 9 francs per spindle. The above shows that an English spinner builds a new mill for about one-half what his continental brother has

to pay. But the working expenses are cheaper in England than on the Continent, especially if the continental spinner requires coal. English coal is cheaper and better than any on the Continent. The English spinner is not at a disadvantage, to say the least, in the matter of wages. This is often not admitted; but let us see. The wages of the English workman are, on an average, about 50 per cent. more than his continental colleague, but he also accomplishes much more. This is due to race differences, early education in the business, and closer occupation. It is a fact that in an Oldham mill three workmen, and in the last two years two and three-quarter workmen, suffice to attend to 1,000 spindles, while on the Continent five are needed.

An Oldham mill works three hundred and six days in a year, and on the Continent two hundred and ninety-three is a fair average. The English spinner has no holiday in the week with the exception of Christmas. He has further four holidays in a year. A Swiss spinner has, for instance, fifteen holidays, and in Bohemia quite as many. The latter work one hour less on Saturday and days preceding holidays, which amounts also to five days annually. The English manufacturer employs no porters; the cotton and coal is brought to the mill and stored; no locksmith, carpenter, or joiner is employed. If they are needed they are procured from the repair-shop. He employs only a few foremen. One overseer and two foremen are sufficient for 50,000 spindles; on the Continent one overseer and seven to eight foremen are required for the same service.

A comparison between English and Swiss balance-sheets shows that the wages paid in England cover the amounts paid in Switzerland, provided that both produce the same number of yarn. In both countries 3.80 francs per spindle is paid.

The work of an English spinning-mill is the simplest that can be imagined. One, for instance, having 60,000 spindles, has, at most, only two classes, and spins in each class only two numbers of yarn the whole year through, and always from the same raw material. Little knowledge and supervision is therefore necessary.

The sale of the yarn *en bloc* is done by the salesman in Manchester, and one of the directors in Liverpool buys the cotton.

The book-keeping is so simple that only very large mills require double-entry; the smaller ones use single-entry or simple cash accounts. The correspondence is a small one, and yarn and cotton is paid for by check. Purchases and sales are made verbally, and need only a written acknowledgment.

From the above it is plain that the English spinner has a great advantage over his continental colleague. I regret that I have not the data to make a comparison with the American industry, when, I am sure, that some of these advantages would disappear. The price of land should be in favor of the American industry. The cost of building can not be much against us in spite of higher wages. An American workman can accomplish as much, at

least, as any workman in the world; and he probably loses less time than in any other country. The American spinner procures his cotton cheaper than his European rival, owing to the proximity of the supply. — REICHENBERG, *November 30, 1888.*

JNO. B. HAWES,
Commercial Agent.

MINING INDUSTRY OF HONDURAS.

The interest and activity of gold and silver mining have been rapidly on the increase since the last report on the subject from this consulate. In the twelve months preceding this there have been denounced,* under the mining laws, more veins than any four years of the past. There is no record yet compiled, nor likely to be for a year, showing the number of mines so denounced, but I am assured by the chief of the mining bureau that this number may be safely put down as not less than one thousand. This shows a notably increasing confidence of this people in the future mineral wealth of their country. The denouncements are mostly made by the natives. Foreigners usually ask for concessions from the supreme Government. At the last report there were not over thirty stamps in operation, now there are over a hundred. Within the last twelve months the Rosario mine, at San Juanito, has declared its first dividend. It is the pioneer of about a dozen of non-active American companies, and is the first and only one of them that has paid a dividend up to date.

Since last report the Government has created a mining bureau, which may be addressed by any one abroad desiring information upon the minerals or mining industry of the country. There has been established an assay office, which is attached to this bureau, and in which are kept for public exhibition and for study and reference a collection of many specimens of geological and mineralogical formations of the country. There are also now a Government geologist and an inspector-general of mines. And, furthermore, there is in contemplation a national school of mines, which will, perhaps, be in operation some time during the coming year. Such facts show that the Government, as well as the people, have a growing faith in the mineral resources of the country. Keeping pace with this increasing interest in mineral development, a Honduras mining syndicate was formed at Tegucigalpa in June last, for the purpose of buying and selling mineral properties, exploring and working old veins, and discovering new ones.

Although the mining industry, as operated under the modern system of improved machinery, is but in its infancy in Honduras, yet recent evidences of the power it is destined to wield in the development of this country are seen in mines that have been raised into most valuable proper-

* To denounce mines in Honduras means to take up or to enter.

ties since its introduction. It is gratifying to add that most, and perhaps all, of such improved machinery comes from the United States, and the increasing demand for the same will doubtless continue to be supplied by the manufacturers of our country.

No doubt what are thought to be the best of the old mines are already taken up, but there are still other good mines that may be denounced under the mining laws, purchased reasonably, or a controlling interest obtained in same by simply placing the necessary machinery upon the grounds. There are also many mines of low-grade ores which can not now be successfully worked, and command but little if any attention, which will be gladly seized upon when transportation facilities become as they should, and, therefore, as they will be, and especially since exceedingly low-grade ores, worth far less than these, can be successfully worked.

Whether these mines are as valuable as those in the United States or not, it may, nevertheless, be safely stated that they are cheaper in proportion to the real richness of the ores. And for this reason, with the increasing facilities for transportation (now so very much needed), the hope is not without its foundation that there is to be a continual and healthy growth of the mining industry in Honduras. Of course, there may be expected the usual failures, resulting from mistakes in selection of mines, and from mismanagement or dishonesty, or both, in the home or foreign office. There are yet old inhabitants, who worked these mines under the Spaniards, who will testify to the rich quality and abundant quantity of the ores. Even one who knows absolutely nothing about mines, mining, or miners, but can weigh properly the credibility of testimony, must conclude that tradition is wholly unreliable, and that history, moreover, has been most unreasonably and unwarrantably falsified, or else these mines are well worth the attention of the capitalists of the world. If the testimony of living witnesses, if the traditions and the written history of the past are worthy of belief, the Spaniards and the Spanish Government have derived immense fortunes and revenues from these same mines of Honduras, and this, too, without the aid of the great improvement in the mining machinery of modern times. But if these mines were so valuable formerly, why is it that they have not produced more bullion and declared more dividends of late years? It is because in the great revolution of 1821, when this people threw off the yoke of Spain and drove its dominions from their borders, there also went with the Spaniards, who left the country, the most of the intelligence and capital that had been directing and was necessary to direct these mining operations. Since then the mines, until lately, have been falling into obscurity.

There was no effort on the part of the Government to advertise its mineral resources. Whether from a fear that the wealth of their mines would attract the cupidity of some other nation that would come and again reduce them to slavery, or from a desire to preserve the mines exclusively for Honduran enterprise, is unnecessary to state. There was, however, as was very natural,

a strong prejudice against foreigners. Laws were enacted preventing them from acquiring or holding property. Under these circumstances it is not strange or irreconcilable with the intrinsic value of the mines that they had fallen almost, if not quite, into forgetfulness by enterprising capitalists abroad, especially as the rich mines of the United States, Mexico, and other countries were more fairly and freely open to the competition of the world. Nor is this all. Not only was foreign enterprise excluded from the country, but the natives themselves could not properly work the mines, on account of the incessant wars and rumors of wars, even had they otherwise all the necessary means. It is easily understood that without peace, and uninterrupted peace, there can be no such thing as large and successful mining operations. It was only during the administration preceding that of the present chief executive that the prejudicial laws referred to were repealed. But now they have given place to foreigners. Not only have the laws improved towards foreigners, but also the minds and hearts of the people, to the extent that enterprising capitalists from abroad are now more than welcome; they are gladly received, both by the Government and the people. As peace is prolonged the prospects brighten for the opening up of good roads.

The climate is always both healthy and comfortable in the mining regions. The water supply for mining is abundant, flowing six months of the year, but in the dry season there is a scarcity in some places. By an outlay of the necessary expenses, sometimes considerable, for flumes, etc., water sufficient for work the entire year may be brought to most places where it is needed. Wood is plentiful now, but the time will likely come when it will be scarce in some of the mineral districts, and, unfortunately, there has not yet been discovered sufficient coal or other fuel to take its place. For these reasons it is very necessary, when one wishes to purchase or locate a mine, to have a care, not alone for the richness of the ore, but also the water and their rights, privileges, and facilities.

There is no mining now of any minerals in Honduras, except that of gold and silver. At this time Honduras is not the place for prospectors. There is no room here now for either American prospectors or mining tramps. In the first place, because the country is already thoroughly prospected, and even if it were not, a poor prospector, single handed and alone, can not compete with the rich Honduras syndicate before alluded to. And, moreover, though the natives have not the means to work their mines, they are, nevertheless, recognized as good prospectors, and they know the country and the mineral indications peculiar to the country, and they have had very long experience. Although their country may have been neglected or forgotten by capitalists and the outside world, they themselves have never lost the best mines of the old Spaniards or ceased to hunt new veins. The native prospector, as well as the common miner, can live well on what an American would think starvation to him. They can live on 10 cents a day as comfortably to them as the average American can live on a dollar a day—ten times as much. Wages are very low. Not even the Chinaman can com-

pete with the natives, and I therefore do not know a single Chinese laborer in the whole Republic. When skilled Americans are needed to direct the common labor they are usually contracted with in the States and brought here at the expense of the companies.—TEGUCIGALPA, *October 31, 1888.*

D. W. HERRING,
Consul.

OPENING OF THE MANILA AND MALABON RAILROAD.

I have to report the opening of the Manila and Malabon Railway, the first railway built and operated in the Philippine Archipelago. It is a narrow-gauge road, something over 5 miles in length, connecting Manila with Malabon, a town of about 3,000 inhabitants, on the southwest shore of Manila Bay, where a large sugar refinery, owned by an English corporation, is in active operation. Between the termini there are two or three small villages, consisting of a few "nipa" huts, a church, and a tribunal, but at present they are not important as trading points. It is expected, however, that the railway will prove a strong incentive to their rapid growth, and that it will cause Malabon to speedily develop metropolitan proportions.

In the construction of the road iron rails have been used upon an excellent bed of gravel, and one large stream and two small ones are crossed by means of substantially-built stone bridges. The work has a noticeable aspect of solidity and permanence. The equipment consists of four locomotives of German manufacture and eight or nine passenger-coaches and baggage vans. The entire equipment of the road comes from German and English factories, and might just as well have been supplied by American manufacturers if a proper effort had been made to accomplish that end.

The passenger station at the Manila end of the line is situated in the pueblo of Tondo, about 1½ miles from the business center of the city, and contains very poor accommodations for, perhaps, one-fourth of the passengers who go out on each train. It is a one-story frame structure with an arched roof of corrugated iron, and the floor of the waiting room is the bare ground. Passengers stand in the street and purchase tickets through a large iron-barred window. At Malabon there is no depot, but the conductor of each train sits by the roadside and sells tickets over a small table until just before the train starts, when he blows a horn as a signal to start and steps on board. The fare from Manila to Malabon is 20 cents first-class, 10 cents second-class, and 5 cents third-class.

The road has been considered as an extension of the street-car line, but not properly. Both enterprises are owned and operated by the same company, but the Manila terminus of the Malabon road is more than a mile distant from the terminus of the street-car line, and they have, apparently, no connection whatever; it is quite possible, however, that a connection may ultimately be formed, but certainly not in the near future.

A trial trip was made over the road about two weeks ago, and since that time, excepting a period of two or three days, trains have been running with comparative regularity, carrying, generally, all the passengers the cars will hold. The patronage so far has been a surprise to the company, and there seems to be no doubt that the enterprise will pay handsomely. The road passes through a most beautiful region, presenting a tropical landscape as rich and fair as ever the eye rested upon, and the revenue from those who make the trip for recreation will undoubtedly be very large. The past two Sundays the cars have been literally packed with passengers, and the new railroad is looked upon as a sure success.

The auspicious opening of this road has aroused an unusual degree of interest in railway matters among business men here, and quite a number of new lines to various ports of this island (Luzon) are being built on paper. A project which finds much favor is a proposed line from Manila to Cavite, the naval port which faces the entrance to Manila Bay, on the southeast shore. This is a very important port, and communication between it and Manila is had only by means of a small steamer, which makes two or three trips daily. A railway line connecting the two ports would be about 30 or 35 miles in length, and it is quite confidently felt that it would be a very remunerative enterprise. It is probable that in view of its military and naval interests the Spanish Government could be induced to make a very liberal concession to such a project.

For the next few years there will undoubtedly be a rare field in the Philippines, not only for the sale of American railway supplies and rolling-stock, but for the investment of American capital in railway enterprises. It has been demonstrated by Spanish and English capitalists that a street-car line and a narrow-gauge railway can be built and operated profitably in and near Manila, and public interest is fairly aroused upon the subject of railways as investments. There is, apparently, no good reason why the Philippine Archipelago, with more than 7,000,000 inhabitants, a vast expanse of rich and productive territory, and a rapidly increasing commerce with all parts of the world, should not have at least four or five well-built railways paying large dividends. This is the idea that is now being generally discussed here, and this dicussion will, no doubt, be productive of results, the profits and general advantages of which American capitalists and manufacturers may share if they will make proper efforts.

The work of constructing the Manila and Dagupan Railway, 120 miles in length, is progressing rapidly and satisfactorily, but work has not yet been commenced on the proposed line from this city to Antipolo, 18 miles. I have, as yet, heard of no American having any connection, near or remote, with railway projects here.—MANILA, PHILIPPINE ISLANDS, *November 8, 1888.*

ALEX. R. WEBB,
Consul.

THE PHILIPPINE ISLANDS.

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THE OFFICIAL LANGUAGE.

Spanish is the official language, and is, practically, the only language spoken. Those American business men who desire to extend their trade to this particular part of the world should understand at the outset that a knowledge of Spanish is indispensable, and that they will greatly advance their interests here if they conduct their correspondence in that language, unless it is addressed to the one American or five or six English houses; and even in those all the employés speak Spanish. A better idea of the situation will be obtained from a knowledge of the general character of the population. From the most reliable statistics obtainable there are in Manila 11 Americans and 250 Europeans (exclusive of Spaniards), perhaps 100 of which number are English, the other 150 being Germans, Italians, French, etc. It is possible that there are 125 persons who speak English, and against them are 6,189 Spaniards, 20,157 Chinese, 46,066 Chinese mestizos, 13,849 Spanish mestizos, and 513,489 natives, all speaking Spanish except a small percentage of natives, who speak only Tagaloc, Pangasinan, Visayas, or one of the other native dialects. As soon as a Chinaman arrives he immediately sets to work to learn Spanish and Tagaloc, and with the help of his fellow-countrymen, who have already learned the language, he soon knows enough to begin trading or usurping the functions of a dray-horse. It is quite unusual to hear English spoken except in the houses of the English and Americans, or in the business houses of that nationality.

GEOGRAPHICAL AND HISTORICAL.

The Philippine Islands are situated between latitude 5° 32′ and 19° 38′ N. and longitude 117° and 126° E. The islands are bounded on the north by the Pacific Ocean; on the south by the South China Sea; on the east by the Celebes Sea and Borneo, and on the west by the channel and island of Formosa. They form a Spanish colony, and comprise over 500 islands, some of which have never been explored, having an area of about 52,647 English square miles. The total population, as given by the census of 1883, including the Spanish army and navy, was 7,636,632; but these figures, it is believed, do not truthfully represent the whole number of persons who exist on the various islands. As stated above, some of them have never been fully explored, and on others it is extremely dangerous for a white man to set foot. There are also parts of the Island of Luzon which has, probably, the largest civilized population of any one of the archipelago, where white men never go. In some of the mountainous parts the savages are still unsubdued, and, I am told, hate the Spaniards with all the intensity of their untamed nature, and being unable to distinguish between a Spaniard and any other nationality of pale-faced men, foreigners seldom enter those districts. It is generally believed that if a white man should penetrate into the wild parts of some of

the islands he would never return. It is quite certain that white men seldom if ever go very far from the outskirts of civilization unattended by a native. I know an American, who has lived in the Philippines for about thirty-five years, who is married (to all intents and purposes) to a native woman, and speaks fluently Tagaloc and Visayas, as well as Spanish. He has probably gone as far into the interior as any white man, but he frankly admits that there are places where he would not dare to go, knowing that a white man would be promptly killed on sight. Under these circumstances it is impossible, at present, to secure a true census of the population.

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PRINCIPAL ISLANDS.

The principal islands are divided into twenty-seven provinces, thirteen of which are on the Isle of Luzon; four on the Isle of Negros; three on Panay, and four on Mindanao. Each of these islands has its governor, and each province and district has its "gobernadorcillo," or sub-governor. The principal cities and shipping ports, and the only ones that do any foreign trade, are Manila, on the Isle of Luzon; Iloilo, on Panay; and Cebu, on the island of that name.

It would be supererogation for me to attempt to more than briefly allude to the early history of the islands. It is given in various forms in different works, and those who are anxious to ascertain how widely some historians may differ in their statements of what are chronicled as historical facts should consult the encyclopædias and other published records. It is a reasonably well-established fact that the islands were formally annexed to the Crown of Spain in 1565, and that for many years that nation had its hands full in its efforts to hold on to them. Not only was there continued trouble and conflict between the civil and ecclesiastical authorities on the inside, but, on the outside, Portugal and the Netherlands, feeling that they never would be really prosperous until they had acquired possession of the rich and valuable property, were making the most annoying and harrassing efforts to accomplish their end. Attacks were also made by powerful Chinese piratical fleets, and, in 1762, while Spain was very busy attending to all these troublesome elements, the English stepped in and captured Manila, which they held for two years and then returned it to Spain in consideration of a ransom of £1,000,000. This ransom, however, was never paid. An English writer says that "England never exacted the payment," but he does not say why. Spanish historians give the impression that Spain, having disposed of some of its most urgent business turned toward Manila, and England, concluding that that city was not such a wonderfully desirable piece of property after all, abandoned it. Between the two records the truth may, perhaps, be found.

Soon after the discovery of the islands Roman Catholic missionaries flocked to them in large numbers, and the work of converting the natives was carried on with great vigor. It was a most excellent field for these self-sacrificing and earnest men, for they found the natives religious by nature

and ready to adopt the first attractive form of worship that came to them. They might just as readily have been made

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MOHAMMEDANS OR BUDDHISTS,

if the same efforts had been made to convert them by the followers of those religions as were made by the Catholics. But quite naturally Catholic Spain would have given countenance and support to her own missionaries rather than to those of other religions, even if the latter had made an effort to obtain a foot-hold on the islands. To-day all the civilized natives are Catholics, and no other religion has any declared representation nor place of worship on any of the islands. They are most devoted adherents to their church, and one has but to go about any of the cities or towns during Lent, Holy Week, or any other religious festival to become impressed forcibly with their earnestness and loyalty to the priesthood. The pure native has a strong element of soulfulness in his nature that manifests itself in love of music and an inclination toward the forms and ceremonies of religious worship, and while, as a rule, he has no capacity for money getting or the ordinary duties of life, he never neglects his prayers nor fails to lift his hat and bow reverently when he passes a church or wayside altar. Unquestionably the church has done much good for the natives, as it has raised them from a condition of savagery and vagabondage to a fair degree of citizenship; and the clergy, who now number nearly 2,000, I am told, have a hold upon their affection and loyalty that no civil power can disturb.

But, despite all the civilizing influences brought to bear upon them, the majority, if not quite all, of the natives cling to many of their half-savage customs and practices. For instance, they have no idea of the use of knife, fork, or spoon, but squat upon the floor of their nipa huts and eat with their fingers, just as their ancestors did centuries ago. They sleep on the floor or earth on their mats of woven strips of bamboo or a fibrous plant of the lily family, and only remove their clothing in the morning to wash themselves, which they do by taking a pail of water and pouring it over their heads after having removed their shirts. The ordinary dress for a man is a thin muslin or gauze shirt and a pair of short, baggy trousers of the same material. He does not mind having his clothing wet, for the air is generally warm, and he can dry himself in the sun at almost any time. His food is rice and fish generally, but of late years many of the natives have followed the example of Europeans and eat meat when they can get it. Of course this description applies only to the middle and lower classes of natives. There are many who have attached themselves to European households and business houses, who, although they still eat with their fingers, dress quite tastefully, and are very neat in their outward appearance.

DRUNKENNESS IS THE RARE EXCEPTION

among the natives, and although there are more than 500,000 of them in Manila and its suburbs, I have not seen one under the influence of liquor in any degree since I have been here. Although the majority of the Europeans

drink wine, liquor, and beer freely, the natives do not yet seem to have acquired the habit to any extent. Strong drink is sold openly on almost every street.

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As I said before, there are a number of unsubdued tribes in various parts of the archipelago who still refuse to recognize the Spanish Government or pay tribute to it, but the latter, instead of resorting to force, which would be followed by a great deal of bloodshed and no really beneficial results, is pursuing the wise policy of gradually bringing the recalcitrant or rebellious leaders into the church and impressing them with the wisdom of graceful submission to the dominant authority. Less than four months ago two petty chiefs were baptized and taken into the church with unusually impressive ceremonies, and it is reasonable to suppose that at least the majority of the members of their tribes will soon follow. It is, apparently, only a question of time when every native in the entire archipelago will pay tribute to Spain and worship devoutly before a Catholic altar.

The last census returns show the number of natives not subject to the civil government, and paying no tribute, to be 602,853; but how the census-takers obtained these seemingly exact figures I can not imagine, when, as I have shown, white men are not permitted to invade the mountainous districts. From reports that have reached me, I am inclined to believe that the figures are too small, and that the census-takers have enumerated only those who were approachable by the civilized natives. It is said that among the incorrigibles the native who has submitted to civilization is in quite as bad odor as the white man; that his wild brother is ashamed of him and will have nothing to do with him. But there are tribes who are, apparently, ready, under slight provocation, to topple over into civilization or back into extreme savagery, and who receive their civilized brethren with some show of cordiality and hospitality. But these unfriendly tribes have one redeeming quality—they are not aggressive, and never attempt to raid their civilized neighbors. They are

QUIET AND PEACEABLE

until their haunts are invaded, when they promptly and vigorously resent the intrusion. I am told also that, at stated times, they will trade with Chinese peddlers, but will not allow the latter to approach them. The peddler deposits his pack at a designated spot and walks away to a considerable distance, while the Indians come forward, take such goods as they want and leave in payment various rare gums, fine woods, leaves, roots, plants, etc., which the peddler can dispose of in the cities at an enormous profit. There is an exhibition of mutual confidence in these transactions that is exceedingly beautiful in these degenerate times. The Indians seem to be very honest and liberal, and the peddler is generally well satisfied with what he finds on his return to his pack.

The number of natives paying tribute is 5,501,356. The number of mestizos, Chinese, and Spanish, as shown above, is very large. The Chinese and natives affiliate quite readily, although there is a manifest disposition on

the part of the latter to treat their almond-eyed neighbors rather contemptuously. This feeling is due, to some extent, to the fact that the Chinaman makes money readily and rapidly, and knows how to keep it—that is what he is here for—while the native has not the remotest idea how to do either. The Chinaman always has money, and the native is in a chronic condition of impecuniosity. Then the Spaniards look upon John very much as the Californians look upon him, but he is very numerous and pays heavy taxes, and no attempt of late years has been made to drive him from the islands. Of course, the natives share this feeling with the Spaniards, and are inclined to sneer at and snub him. But, possibly, the most potent reason for a feeling of superiority on the part of the native is that he is a Catholic and John is a heathen, never having been properly baptized. But John, apparently, does not notice the attitude of the natives toward him, for he courts their friendship and treats them as if he felt that they were every bit as good as himself. He has been marrying the native women for the past seventy-five or one hundred years, and the mixture of the races has produced some very handsome women and an excellent quality of men, the latter being finely formed, robust, enterprizing, and honest, as a rule, having the industrious, frugal traits of the Chinaman and the simple honesty and affectionate disposition of the native.

THE PUBLIC REVENUE.

The total public revenue of the Philippines for 1886 was $11,528,178. Of this amount $6,262,738 was from direct taxes, $2,176,500 from customs duties, $1,254,400 from monopolies, and $525,000 from the Government lotteries. The total amount of revenue stated does not include the special tax for the new harbor works now in course of construction in Manila Bay. This very important work I will describe in detail further on.

THE CURRENCY.

The amounts given above are in the Philippine dollar, or peso, which is usually worth from 80 to 85 cents in American gold. The condition of the local currency is, and has been for a number of years, most unsatisfactory to business men throughout the islands, and particularly as to strangers temporarily sojourning here. The coins in circulation are the Spanish peso, the Mexican dollar, the Spanish half-peso, two reals (25 cents), peseta (20 cents), real (12½ cents), half peseta (10 cents), half-real (6¼ cents), and "dos cuatros," the latter a copper coin worth 2½ cents. All the other coins are silver, there being no gold in general circulation. There are a few bank bills in circulation, issued by the Spanish bank, but they are not plentiful. There is also a smaller copper coin called a "cuatro," and worth 1¼ cents, but it is seldom seen.

Not only is the currency much depreciated, but its value fluctuates frequently, and is most exasperatingly uncertain. The importation of Mexican dollars is prohibited by law, and any brought to the islands are liable to

seizure by the Government, while the person who brings them in is subject to fine or imprisonment, or both. Yet there are many more Mexican dollars than Spanish pesos in circulation. In 1877 the Government declared all Mexican dollars contraband except those in circulation in the Philippines at that time. The avowed object was to ultimately withdraw this coin from circulation entirely, leaving nothing but the Spanish peso and smaller coins, and giving the whole volume of the currency a certain and unchanging value. There were a large number of Mexican dollars then in circulation, and as it would have been a hardship to their possessors to have depreciated their value at once they were allowed to circulate at par with the peso. The decree failed, however, to effect the desired result, and Mexican dollars continued to pour into Manila and the other ports quite copiously, notwithstanding the rigid preventive measures adopted by the customs officials. Shrewd travelers and speculators found it quite profitable to bring Mexican dollars into Manila from Hong-Kong, for they were worth from 10 to 15 per cent. more than at the latter port, and all kinds of stratagems were resorted to in order to deceive the watchful customs officials. Whenever a smuggler was caught in possession of a small amount of the contraband coin he pleaded ignorance and innocence and escaped with only the loss of his Mexican money; but if the amount was large enough to warrant the conclusion that it was a clear case of smuggling, he not only forfeited his money but was compelled to pay a heavy fine besides. Not long since a steamer plying regularly between this port and Hong-Kong was fined $500 for having Mexican dollars on board.

ANOTHER DECREE.

On the 19th of July, 1886, another decree was issued from Madrid instructing the Government of the Philippines to rigidly enforce the order of 1877 and rapidly withdraw all Mexican dollars from circulation. It was again declared, however, that Mexican dollars dated 1877, and prior to that year, would be allowed to circulate only until they could be withdrawn, together with those of subsequent dates, for the purpose of recoining them into the Spanish half-peso. It has been asserted, by the way, that this coin contains 10 per cent. less silver than the Mexican dollar, owing to shrinkage and the presence of alloy, but two of them will buy a dollar's worth of goods quite as readily as a Mexican dollar. Of course, upon the receipt of the second decree, the Government officials have become more vigilant than ever, and it was hoped and expected that the unwelcome Mexican coin would soon be frozen (or melted) out of circulation; but notwithstanding all the precautions taken it continued and still continues to pour in. None of a later date than 1877 are accepted in trade, but that and earlier dates still circulate at par with the peso, which is comparatively scarce. The same conditions favorable to making money by smuggling Mexican dollars still exist, and I have been told that a man who left here several months ago made over $20,000 in about four years by getting this coin at 70 and 75

cents in Hong-Kong and realizing 80 and 85 cents for it in Manila. My information in this case, however, is not reliable, and I present the incident only as a possibility.

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The quite natural result of all this is that the currency is in a very unstable and unsatisfactory condition. Merchants here who buy goods in America must, of necessity, pay a high rate of exchange, as all transactions must be upon the basis of American gold. Mexican dollars, which are quoted by the United States Treasury Department at 75.09 are accepted at par with the Spanish peso, valued by the same authority at 95.15, while both are worth from 15 to 20 cents less than the United States gold dollar. There seems to be no immediate prospect of a change for the better, as the Government appears to be unable to keep the Mexican dollar out or get the currency upon a substantial basis.

CLIMATE.

The climate of the Philippine Islands varies comparatively little from that of other tropical countries, and the high death rate in the cities is due, undoubtedly, more to the very unfavorable sanitary conditions prevalent than to climatic influences. To the foreigner who walks about Manila it is at once apparent why the cholera and other contagious diseases are so fearfully destructive when they obtain a fair start here. The thermometer ranges from 60° to 90° the year round, and hangs lovingly about the latter figures during March, April, and May. During those months the heat is very oppressive, and during the middle hours of the day everybody and everything seems to sink into a lethargy to fully awake only after sunset. Owing, probably to the humidity of the atmosphere, the heat is much more offensive and enervating than a corresponding degree would be in the United States.

In June the rainy season begins, and it drizzles and pours almost continually until about the first of December. The rivers and creeks overflow their banks, and the fields, streets, and roadways are inundated sometimes to the depth of from 2 to 4 feet. For six months traveling in the interior is almost impossible, and in the cities everything is wet and moldy; the houses are damp and dismal, and the people are depressed and gloomy. Trade becomes comparatively lifeless, amusement and recreation languish, and a disagreeable funerality settles upon everybody and everything. The floods in the fields and gardens drive the snakes, centipedes, and other venomous creatures into high places, and they even find their way to the second stories of dwellings, much to the terror and disgust of the inmates. Most of the reptiles and vermin of the country are forced out in the rainy season, and, of course, are ruthlessly slaughtered whenever found. Only a day or two since, while the streets were flooded, I saw a native wading along the sidewalk with a water-snake in each hand, whose young lives he had sacrificed by seizing them suddenly by the neck and pressing his thumb strongly behind their jaws. To the student of entomology and natural history the

rainy season offers wonderful opportunities, but it is not pleasant for the ordinary, every-day citizen. The maximum annual rain-fall is 144 inches, and the minimum 84 inches.

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THE COOL SEASON.

About the 1st of December the cool season sets in, and it lasts until about the 1st of March, during which period very little or no rain falls; the nights and early mornings are refreshingly cool and pleasant, and the whole face of the country, densely clad in tropical verdure, is very beautiful. During the day, or from about 9 a. m. to 4 p. m., the thermometer sometimes makes a partially-successful effort to climb into the nineties, and white people remain, as much as possible, in the shade, but between 4 and 5 o'clock p. m. a strong breeze almost invariably springs up from the China Sea and blows for three or four hours quite briskly, when it gradually subsides, and for the rest of the night all those charming conditions prevail which poets so graphically ascribe to the tropics.

Not infrequently during the cool season long droughts prevail, which parch the ground and destroy the crops, and locusts occasionally make a descent upon a province, denuding it entirely of herbage; but this, I infer, does not occur very often. As a rule the crops are good.

TYPHOONS.

The Philippines are within what may be termed the "typhoon belt," and most terrific wind storms sometimes accompany the rain in September, October, and November. In July and August the careful native anchors the roof of his "nipa" hut by lashing together with rattan thongs the small ends of several heavy bamboo poles and placing them astride of the ridge while he pins the larger ends firmly to the earth. Similar precautionary measures are taken also by the occupants of some of the larger houses, where the roofs are not securely bolted to the rafters, and a threatening cloud in the typhoon season is generally looked upon with grave apprehension; but after November no damage from wind is feared.

EARTHQUAKES.

Most of the islands of the archipelago have been badly shaken up by subterranean disturbances at various times, and the natives and older residents seem to live in a continual state of fear whenever the active volcanoes are less active than usual. These are popularly supposed to be the outlets or escape valves for the gases generated by fierce and unquenchable subterranean fires, and so long as they are belching forth smoke and lava at the usual rate it is felt that there is comparatively little danger of a violent disturbance; but when they become partially or completely inactive the people at once conclude that the craters have become clogged, and that an outlet for the gas will be forced open at some other point, which action will be preceded by a violent earthquake.

There are traditions of terrible "terremotos," as the Spaniards call them, that have overturned mountains, filled valleys, desolated extensive plains, opened passages from the sea far into the interior, and from the lake to the sea. One is recorded as having taken place in 1796, which was fearfully destructive of life and property. In 1824 one of the most violent earthquakes that ever afflicted the islands is said to have occurred. It completely wrecked several churches, the principal bridge across the Pasig River, and the barracks at Manila; destroyed many private houses all over the archipelago, and opened a narrow chasm in the earth nearly 4 miles long. The inhabitants fled in terror to the open fields, and hundreds were crushed to death under falling buildings. Six vessels were wrecked in the harbor, and an incalculable amount of general damage was done. It is said that the number of the dead was never ascertained.

In 1645 the old city of Manila was almost entirely destroyed, and over 300 lives were lost. During an earthquake in 1828, it is said, the vibration of certain hanging lamps described an arc of 4½ feet, the huge corner-stone of the principal gate of the city was displaced and the great bells of the churches were set ringing. The shock lasted between two and three minutes and rent the walls of several churches and other buildings, but was not accompanied by subterranean noises, as is usually the case.

In 1863 and 1880 memorable earthquakes occurred, the former destroying the greater part of Manila and the latter making almost a complete wreck of it. Those who have figured upon the record feel that a violent shock may be expected quite regularly about every seventeen years, and that the next may be looked for in the summer of 1897.

It is quite generally believed that this archipelago was formed by volcanic upheavals, and there is no lack of evidence in various parts of it to support this theory. I have been assured that there are portions of the mountainous districts of this island (Luzon) where a perceptible tremor of the earth is going on at all times. Slight shocks are felt very frequently, and since the 1st of January I have felt three very strong vibrations. I have heard an American complain of being made "seasick" by the motion of the earth.

MANILA.

Manila is the chief city of the Philippines, and is situated on the north shore of Manila Bay, spreading over a comparatively level tract of land for about 2 miles north and 4 east and west. I refer, of course, to what is now known as Manila, and not to the walled city alone, which is located on the east bank of the Pasig, near its mouth, and overlooking the shore of the bay. Old Manila, which was founded in 1671, is compactly built, covering about three-quarters of a mile square, and is enclosed by a massive stone wall 10 or 12 feet high and about 6 feet thick. It has five or six great gates, each named after a Spanish king or queen, and each having an old-fashioned draw-bridge over the broad moat which surrounds the wall. The latter has a very ancient appearance, being covered in many places with thick moss

and heavy shrubbery, and its general aspect suggests tales of the middle ages. It looks like a mediæval castle, somewhat musty and decrepit, but still on duty. At the southwest corner of the wall is an ancient fort, which, with several lines of earthworks along the shore of the bay, form the protection to the harbor and mouth of the river. But while the old city is still called Manila, the districts of Birrondo, Santa Cruz, Quiapo, San Sebastian, San Miguel, Tandnay, Sampoloc, Santa Mesa, Santa Anna, Malate, Ermita, and a number of others are considered as forming the whole city of Manila. Each of these districts is about the size of one of New York's lower town wards, and they merge so completely into each other that there are no distinguishable dividing lines. It seems as if a number of villages had gradually grown until they melted into each other and formed a city, still retaining their old names, however, and becoming districts instead of villages. Each district has its chief executive officer or gobernadorcillo, and the whole city is presided over by a civil governor, and what may quite properly be called a board of aldermen. The head of the general government of the archipelago is a governor-general, who has his palace in the Malacañan district, Manila, is appointed by the Queen Regent of Spain, and holds his office for three years.

Manila lays no claim to architectural beauty, but it has a number of very pretty streets and drives, notably Malecon, a well-paved boulevard, extending about a mile along the shore of the bay in front of old Manila; the Lunetta, an oval-shaped drive, about 1 mile in circumference, into which the Malecon boulevard merges, and in the center of which is a handsome stand, where a fine military band gives free concerts every pleasant evening all the year, and the Calle Iris, a level gravel road, 75 feet wide, and lined on either side with bamboo trees, running from Sasupoloc to Tondo, a distance of about 1½ miles. The dwellings, although strikingly large and roomy, are built with special reference to safety during earthquakes and typhoons. As many posts or beams, from 6 to 12 inches in diameter, as are required are planted with one end deeply imbedded in cement and stone under ground and extending to the roof of the house, the latter, as well as the floor supports, being firmly bolted to them. The houses are only two stories high, the first, the floor of which is level with the street, being usually devoted to a stable, carriage-house, and servants' quarters, although occasionally a first floor room is used as a dining-room. The second floor is essentially the residence. The outer walls of the first story are usually built of stone, while the second is always of wood with sliding panels for windows, rendering it possible to throw open the entire upper part of the house in warm weather or close it tightly during the cool and rainy seasons. These panels, instead of glass, have square pieces of transparent shell set into the light framework letting in plenty of light when the house is closed. The walls and ceilings have neither lath nor plaster to drop on one's head when the house is being racked by an earthquake, but are covered with sheets of woven bamboo, grass, or muslin, upon which very pretty designs are often

painted in water-colors. The house is so constructed that if an earthquake shakes the first-floor wall from under it the upper story, where the family sleep and eat, will be supported firmly by the upright beams described.

Since the last earthquake a number of handsome churches have been built. The Santa Yglesia Cathedral, in old Manila, first built in 1578, has been destroyed by earthquakes several times and did not escape in 1863. In 1880 it was badly shattered and its tower had to be pulled down. To-day its interior, with its vast flooring of tassellated marble, its grand and massive arches and pillars, its pure white marble altars, rich in gold and silver ornamentation, and its immense organ, presents an appearance of substantial elegance and solidity not at all suggestive of fear of earthquakes. The Cathedral of San Francisco, also in old Manila, is a very handsome structure, gorgeously furnished, and each district of the city has its church, the greater number being substantially built and richly decorated. An iron church is now in course of erection in the district of San Sebastian, the entire framework having been imported from Germany, and it is expected that it will be a magnificent edifice.

THE ANCHORAGE.

Manila Bay is 27 miles wide, and the anchorage is about 3 miles from the mouth of the Pasig River, which will not admit vessels that draw more than 13 feet. The principal shipping-houses are fully half a mile from the mouth of the river, and nearly all the goods shipped are taken down the river and out to the ships in lighters propelled by natives with long bamboo poles, or, in some cases, towed out by steam-tugs. When the monsoons blow strongly the bay is very rough, and lighters can not be taken alongside the ships. Thus, shipping is sometimes at a standstill for a week or ten days at a time, and even the tugs of the ship-chandlers do not go beyond the mouth of the river. All this trouble, it is expected, will be overcome when the Government finishes the extensive harbor improvements now under way. This is simply a massive stone pier or breakwater, extending about 1 mile southeast from a long pier running out from the mouth of the river and forming a large harbor, where ships of heavy draft can tie up to stone docks or ride quietly at anchor in rough weather. The undertaking is a gigantic one, and it will require many years to finish it. To pay for the work a tax of 2 per cent. is levied on imports, 1 per cent. on exports, tonnage dues, and a tax on fishing-boats. Over $4,000,000 have already been collected for the work, and it is expected that it will be rapidly pushed to completion. The harbor is certainly needed very badly, and will undoubtedly cause a marked increase in the commerce of Manila.

The River Pasig, which divides the city of Manila in two almost equal halves, is less than a quarter of a mile wide, and presents a scene of great animation at all times with the numerous native craft gliding hither and thither, among which may be seen an occasional small ship or steamer of foreign build.

The passport system is rigidly enforced, and no one can leave the port nor enter it without having supplied himself with one.

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THE POLICE.

The police force of Manila is composed of natives, with Spaniards as chief, captains, and lieutenants, and is exceedingly well organized. To one who is at all familiar with the police records of large American cities the low average of crime in Manila is most surprising. Here is a city with a declared population of over half a million, the majority of whom can neither read nor write, and yet during the year there is hardly any more crime than in an American town of four or five thousand inhabitants. The vast majority of the arrests made are for very slight misdemeanors, and a murder, burglary, highway robbery, or serious assault is of very rare occurrence. I do not believe that it would trouble a burglar in the least to effect an entrance to any of the houses, for there seems to be a generally prevalent feeling of security, and it is not considered necessary to take extensive precautions against midnight mechanics. I have been here nearly eight months, and have seen but five men who were at all under the influence of liquor. One was a Spaniard, three were English sailors on shore on leave, and the fifth was a French sailor. None of these men were more than "comfortably full." The natives are just learning to drink, and have not acquired confidence enough yet to become intoxicated, and the Chinamen never get drunk.

No one ever hears of citizens being knocked down and robbed, and I have heard of but one burglary since I have been here. There may be a great deal of immorality prevalent, and I have been assured that there is, but it certainly does not appear upon the surface of daily life. Apparently the city is a model of morality and good order.

There are five daily newspapers published in Manila, all printed in Spanish — El Diario, La Oceania Espanola, and La Opinion, issued in the morning, and El Comercio and La Voz de Espana in the afternoon.

One of the leading amusement features of the year are the spring races, which are attended by everybody who claims to be anybody. Admission is charged only to the grand stand, and as the surrounding fields are free the natives gather there by thousands. The course and fields present a very animating sight.

There are several theaters where plays are sometimes given by amateurs, but none of them are open regularly. Occasionally an opera company comes from Spain or Italy, remains two or three months, and go away well laden with silver. A circus came here once, I am told, and remained a month, the canvas being hardly large enough to hold the crowds.

STREET-CARS IN MANILA.

In September last the first street-car line in Manila was opened for business. The project has proved exceedingly profitable, although predictions were made freely that it would be a complete failure. One of the reasons

why it was generally felt that the line would not pay was that every one who has any social status whatever owns one or more conveyances of his own. It is not considered the proper thing for a white man to walk unless he does it for exercise and has his carriage within call, and I am told there are families who live very plainly, even shabbily, at home, whose credit with the retail dealers is not good, and yet they appear on the streets in quite decent carriages, with coachman and all the necessary appurtenances for a creditable show. There are rumors, too, of instances where men of small income, after having made their appearance on the drives early in the evening, send their carriages out to pick up passengers for two or three hours to pay feed bills and coachmen's wages. With all the white people owning their carriages, and the natives and Chinamen able to ride anywhere in the numerous two-wheeled, one-horse "caromatas" for 5 cents, the outlook for a street railway project was not considered encouraging.

The line begins at the fountain in the little plaza at the head of the Calle Alixe, in Sampaloc, runs south through the Plaza Santa Anna, in front of the United States consulate, into and through San Sebastian, Quiapo, Santa Cruz, and the Escolta; west through the Rosario, and terminates at the church in Binondo, covering a distance of about 2 miles over a short track, with short side tracks at intervals to allow the cars to pass each other.

The fare was fixed at 6 cuatros (3¾ cents) for first-class passengers, and 4 cuatros (2½ cents) for second-class. This was cheap enough for anybody, and the natives and Chinese at once began to desert the caromatas and patronize the street-cars most liberally. The difference between the first and second-class accommodations was that the former had cushioned seats in the middle of the car, while the latter had standing room in the front and rear.

The cars are very cheap and rather shabby-looking affairs when compared with the handsome American street-cars, but answer the purpose quite well. They were built in Germany, largely of sheet-iron and rough boards, and are painted a dingy red, and just large enough for the driver to stand in, and at each side of this are two very awkward steps. Each car will seat twelve or fourteen first-class passengers, and will furnish standing room for fifteen or twenty second class, standing close together.

At first the patronage was confined almost exclusively to natives and Chinese, but gradually it began to dawn upon the clerks and business men along the line that it was a great deal handier sometimes to jump into a car and glide smoothly down town than to wait for their horses to be harnessed and then to be jolted over the rough pavement. Then it was soon understood that a man did not jeopardize his social position by riding in a street-car, and one by one they dropped into the habit as readily as Americans. And now in the morning and evening hours there may be seen in the street-cars English, Spanish, and German merchants, clerks, and, occasionally, even ladies, who seem to enjoy the novelty of such a ride.

Patronage increased rapidly until the fifteen cars with which the line began operations were found insufficient and two more were added; not, however, the dingy, unsightly German ones, but two handsome specimens of the work of J. G. Brill & Co., of Philadelphia. But it proves rather expensive to bring street-cars from America. I am told that the price paid for each was $400, and that the freight and other expenses amounted to nearly $600 each. Still, the new cars are so much more attractive and acceptable to the public that I have no doubt more will be imported and that the old ones will be gradually retired.

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ILOILO.

Iloilo is 250 miles southeast of Manila, and is the next city of importance in the archipelago. It is the chief city of the province of Iloilo, in the Isle of Panay, latitude 10° 48′ W., near the southeast extremity of the island, close to the sea, on the border of a narrow channel formed by the opposite island of Guimaras. The city is built on low, marshy ground, partly fronting on the sea and partly along the left bank of a creek or inlet which runs toward Jaro, and, after describing a semicircle, again meets the sea near Iloilo. The harbor is well protected and the anchorage good, the Island of Guimaras forming a sheltering passage, where heavy draft ships may anchor comparatively well protected from heavy seas. The depth of water on the bar at the entrance to the river is about 5 fathoms at low water, and a short distance inside decreases to 15 feet, deepening again a short distance further in. During the spring tides the town is flooded, but, notwithstanding the apparently unfavorable sanitary conditions, it is said to be a much healthier place than Manila. A striking peculiarity of the location is that the high ground of Guimaras forms a sort of funnel with the Panay shore, and a calm at Iloilo is of rare occurrence. There is almost always a strong breeze there, and when it comes from the northeast it is very heavy. It is, of course, much cooler at all times of the year than in Manila. It is here that the famous "pina" fabric, woven very finely from the fiber of the pine-apple leaf, is made. Another very rich fabric, called "jusi," woven from silk in white and colors, is also made here. The surrounding country is very fertile, and is comparatively well cultivated, but, under the direction of experienced, energetic farmers, the yield could undoubtedly be increased incalculably. Sugar is the principal product of this portion of the archipelago, and the annual crop, it is estimated, averages about 1,000,000 piculs, or nearly 70,000 tons. Tobacco and rice are quite largely cultivated, but none of the latter is shipped and very little of the former, as compared with the shipment of this article from other ports. Earthquakes seldom occur on the Isle of Panay, but it seems to be a special mark for the typhoons, which quite frequently do great damage there. The principal traders are Chinese mestizos, although there are three Americans and a number of German and English traders there.

The Isle of Negros, which is extremely fertile, now contributes about three-fourths of the sugar shipped from Iloilo. The quality is said to improve every year.

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CEBU.

This is the third city of importance in the Philippines, is noticeably well built, and has fine roads, but is lacking in commercial enterprise. This is the leading center for hemp, the neighboring islands of Leyte, Mindanao, and Camiguin having very extensive plantations, and sending the greater part of their products to Cebu for shipment. There is said to be coal on the island, but no one seems to care to take the trouble to mine it. Cebu was at one time the seat of the administration of revenue for the whole of the Visayas, but this was removed to Manila in 1849.

FOREIGN TRADE.

The foreign trade is confined to Manila (which is, of course, the leading port), Iloilo, and Cebu, and the principal articles of export are hemp and sugar. Large quantities of tobacco, coffee, indigo, hides, and ylang-ylang are also shipped, as well as some fruits and gums. But the really prominent features of the export trade are hemp and sugar. The total amount of these products shipped last year was 81,990.10 tons of the former and 188,929.67 tons of the latter, of which 45,462 tons, or more than half the hemp, went to the United States, and 123,685 tons, or nearly two-thirds, of the sugar.

The following table will show the total amount of hemp and sugar exported from the Philippines during the past seven years:

Year.	Hemp, tons.	Sugar, tons.
1881	36,381	89,725
1882	24,776	83,187
1883	24,809	157,504
1884	23,400	95,603
1885	26,982	153,094
1886	24,828	143,881
1887	45,462	123,685
Total	206,638	846,679

HEMP.

The receipts of hemp at Manila in 1887 were 468,911 bales, against 342,015 bales in 1886 and 362,024 in 1885. At Cebu, the next important hemp port, the receipts were 65,764 bales, against 60,693 in 1886 and 61,105 in 1885.

The stock afloat and in store on the first of January, 1888, was: At Manila, 68,023 bales, against 51,782 in 1887 and 28,914 in 1886; at Cebu, 13,993 bales, against 9,532 in 1887 and 6,374 in 1886.

Loading, January 1, 1888: For United States, 15,940 bales, against 24,500 in 1887 and 6,000 in 1886; for Great Britain, 3,302 bales, against 10,500 in 1887 and 8,500 in 1886.

Local consumption has been estimated at 4,000 bales in 1887, against 5,000 in 1886 and 6,000 in 1885.

The following table will show the total amount of merchandise of all kinds exported to the United States in 1887:

Merchandise.	Kilograms.	Tons.	Value, Manila currency.	Value, United States gold.	Duty, United States gold.
Hemp	41,309,639	45,462	$6,203,261.00	$5,148,706.63	$91,927.22
Sugar	112,440,780	123,685	5,421,469.00	4,449,819.27	116,362.94
Coffee	42,567	47	7,453.00	6,185.99	105.99
Indigo	29,749	33	17,559.00	14,607.17	246.92
Hides	456,396	593	61,417.00	50,976.11	.....
Sapan wood	93,326	103	1,320.00	1,095.00	28.46
Tobacco	7,956	9	32,663.00	18,810.29	317.38
Rice	334	*735	12.00	9.96	.15
Preserves	150	*330	15.00	12.45	.....
Fruit	34	*75	14.00	11.62	.....
Hats†	.....	.....	5,286.00	4,387.38	.....

*Pounds. †Number of hats, 39,662.

A SIGNIFICANT FACT.

Of the total amount of hemp and sugar exported to the United States only 15,454 tons, or about one-third of the former, and 60,249 tons, or less than one-third of the latter, were carried by American ships. Notwithstanding the fact that America receives more than half the hemp and sugar exported from the Philippines, our showing of ships here is remarkably small—but 29 American ships entered this port last year, against 383 of other nations, exclusive of steam-vessels.

The freight rates have steadily declined during the past fifteen years, and this, they say, is almost wholly due to the fact that the ships of other nations, receiving Government support, are able to carry freight profitably at rates against which American ships can not compete. The following table will show the freight rates from the Philippines to the United States for the past twenty years:

Comparative table of freight rates to the United States.

Year.	Hemp.		Sugar.	
	Highest.	Lowest.	Highest.	Lowest.
1868	$14.50	$12.50	$17.00	$8.50
1869	12.00	10.00	15.00	11.00
1870	11.25	8.00	11.00	7.00
1871	12.00	10.00	13.50	9.00
1872	18.00	10.50	15.00	9.50
1873	18.00	12.00	22.50	11.00
1874	14.00	12.00	20.00	11.50
1875	11.00	5.00	18.00	11.00
1876	8.50	6.00	16.00	10.00
1877	10.00	7.00	14.00	7.00
1878	8.00	4.00	9.00	3.00

Comparative table of freight rates to the United States—Continued.

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Year.	Hemp.		Sugar.	
	Highest.	Lowest.	Highest.	Lowest.
1879	$12.00	$4.00	$12.00	$3.50
1880	10.00	5.00	22.00	8.00
1881	13.00	8.00	14.00	8.00
1882	10.00	7.00	13.00	8.00
1883	7.50	6.00	10.50	8.00
1884	6.00	4.00	8.00	5.00
1885	6.00	4.00	9.25	5.00
1886	4.50	3.00	6.50	3.00
1887	6.00	3.50	6.00	5.50

COFFEE AND TOBACCO.

The total export of coffee from the islands was 5,442.72 tons; of cigars, 800.49 tons; and of leaf tobacco, 4,717.94 tons. Only a comparatively small quantity of these products went to the United States.

Seventy thousand eight hundred and eighty-three and eighty-five one hundredths tons of sugar were shipped from Iloilo in ships of all nations, 41,074.23 tons from Manila, and 11.73 tons from Cebu. Iloilo is essentially a sugar port, and Cebu's specialty is hemp. No hemp was exported from Iloilo last year, while Cebu exported 6,737.0 tons. All the rice exported from the islands was shipped from Cebu. Iloilo shipped no tobacco, while 781 pounds were exported from Cebu. Besides the articles named above there were exported last year over 4 tons of pear shells, about 43 tons of gum almaciga, and a small quantity of other gums and fine woods.

IMPORTS.

The total value of all imports from all parts of the world, as given by the official report of the Government, was $16,530,000, of which $523,421 worth in Manila currency, or $434,439.43 United States gold, came from America. But these figures do not represent half the quantity of American goods imported, for the same difficulty is experienced here as is complained of by other United States consuls in the East. American goods are shipped to Hong-Kong, reshipped from there to Manila, and credited to Hong-Kong in the official reports. Other American goods are purchased in London, and are entered as imports from England. In the Government report of imports the United States are credited with about 2½ tons of flour, a ridiculously low figure when one ascertains that nearly, if not all, the flour used here comes from San Francisco. The amount stated is simply one shipment that came directly from California in an American ship. Over one hundred thousand 50-pound sacks come here every year of the same kind of flour that has been shipped from San Francisco to Hong-Kong and is reported among the imports from the latter city. Thousands of barrels of American pork, I am told by a prominent merchant, come here every

year from Hong-Kong, and yet America is not credited with a barrel of it. The same is true of canned goods, and almost every kind of merchandise shipped from San Francisco, unless it is billed to Manila direct. Perhaps the merchants will think this fact of comparatively small importance so long as the goods get on the market here and are promptly paid for, but I am sure the local government's annual report of imports would be much more attractive and readable if the United States had a more conspicuous representation on it.

Following is a transcript from the Government report showing the merchandise imported from the United States last year:

Detailed statement of merchandise imported to the Philippine Islands from the United States during the calendar year 1887.

Merchandise.	Kilograms.	Tons.	Pounds.	Value, Manila currency.	Value, United States gold.	Duties, United States gold.
Petroleum	4,029,770	4,421.74	.....	$442,175.00	$367,005.25	$36,700.50
Steel	667	.....	1,467.40	87.00	72.21	7.20
Cotton for wicks	110	.....	242.00	66.00	54.78	5.48
Fire-arms *	.....	.....	.....	132.00	109.56	10.92
Fire-pumps †	.....	.....	.....	60.00	49.80	.....
Coal	7,330,440	8,063.48	.....	41,179.00	34,178.57	.....
Beer ‡	.....	.....	.....	395.00	327.85	32.79
Shoes §	.....	.....	.....	4.00	3.32	.32
Copper	3,229	3.55	.....	667.00	553.61	18.92
Canned goods	46,149	50.76	.....	13,880.00	11,520.40	1,152.15
Flour	2,300	2.53	.....	248.00	205.84	20.62
Vegetables	117	.....	257.40	12.00	9.96	.98
Sheet-tin	187	.....	411.40	27.00	22.41	2.24
Iron	3,428	3.77	.....	443.00	367.69	34.03
Thread	235	.....	517.00	235.00	195.05	19.50
Oil-cloth	674	.....	1,482.80	269.00	223.27	22.38
Lard	2,475	2.72	.....	1,236.00	1,025.88	102.72
Furniture	.....	.....	.....	12,191.00	10,118.53	1,011.85
Machinery ‖	.....	.....	.....	285.00	236.55	.....
Paper	3	.....	6.60	1.00	.83	.10
Perfumery	706	.....	1,553.20	706.00	558.98	58.66
Leather	794	.....	1,757.80	2,540.00	2,108.20	210.89
Drugs and chemicals	.....	.....	.....	4,588.00	3,808.04	304.64
Gunpowder	110	.....	242.00	55.00	45.65	4.57
Cotton cloth	723	.....	1,590.60	1,242.00	1,030.86	103.09
Glass and glassware	2,413	2.65	.....	154.00	127.82	12.77

* Number of fire-arms, 23. † Fire-pumps, 1. ‡ 1,975 quarts. § 3 pairs. ‖ Machines, 4.

Total imports to the Philippine Islands for the calendar year 1887.

Country.	Value, Manila currency.	Value, United States gold.	Duties, United States gold.
United States	$523,421.00	$434,439.43	$39,888.39
Europe and Africa	10,102,093.00	8,384,737.19	661,037.50
Asia and Oceanica	5,904,782.00	4,900,969.06	321,668.00
Total	16,530,296.00	13,720,145.68	1,022,593.89

Total exports from the Philippine Islands for the calendar year 1887.

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Country.	Value, Manila currency.	Value, United States gold.	Duties, United States gold.
United States	$11,740,509.00	$9,744,622.47	$188,991.64
Europe and Africa	6,070,379.00	5,038,424.57	166,508.03
Asia and Oceanica	7,443,252.00	6,177,899.16	117,492.71
Total	25,254,140.00	20,960,946.20	472,992.38

Of the total exportations, amounting to $25,254,000, Manila shipped $15,994,023.64; Iloilo, $2,940,454.28; Cebu, $2,012,763.28, and Atimonan, $13,695.

HOW DO THEY DO IT?

Here is another point that may be of interest to American merchants. One of the proprietors of the largest light hardware and house-furnishing establishment in Manila told me recently that he bought American tools and some other classes of American goods in London because he could get better discounts there than he could from the manufacturers. Assuming that the London firm, because it buys large quantities of goods, receives better discounts from the manufacturer than are offered to a firm that buys smaller bills, how can it offer the best discounts to a Manila house after paying freight from New York to London? The merchant referred to admitted that American goods, as a rule, were far superior to those of other countries; but he said that his efforts to deal directly with our manufacturers had always been unsatisfactory, as they had manifested no special interest in selling their goods here. His trouble seems to have been his inability to get definite replies to his inquiries concerning discounts.

"I have a splendid, handsomely-printed catalogue," he said, "of just the goods that I want, but it contains only the list prices, with no discounts. I know there are discounts, for I get them when I buy the same goods in London, so what is the use of my bothering with the manufacturers when I can buy to better advantage and with less trouble somewhere else?"

Although one frequently encounters American goods in the bazars and shops, by far the greater proportion (nearly all of them, in fact,) have been purchased in Hong-Kong or London. Except American petroleum, which is used exclusively here and in immense quantities, as it is the only illuminating material to be had beside cocoa-nut oil and candles, and a few American buggies and carriages, there are no direct shipments of goods from the United States to the Philippines, and, apparently, no effort of any importance has been made by our manufacturers to put their goods into this market. I have heard that a year or two ago an agent for an American silver-plated ware manufactory visited Manila, but found that he could not compete with the prices offered by German and English manufacturers. This is undoubtedly true of some classes of goods, but not of all. I am satisfied that there are American manufacturers of silver-plated ware who

can make a better article of table-ware than any of the English or German goods sold here, and that it can be imported here and sold at the same price with fully as good profit. There are large quantities of Belgian enameled-ware sold at prices that seem to me fully 50 per cent. higher than American enameled and granite-ware is sold at retail in the United States. If there is any difference in the quality, I think it is in favor of the American ware. Tin-ware and all sorts of cooking utensils, I feel quite confident, could be supplied by American manufacturers as cheaply as by those of Germany, England, or any other country. The same is true of wooden-ware, tools, cotton-cloth, calico, muslin, linen, canned goods, preserves, stationery, drugs and chemicals, agricultural implements, sewing-machines, and numerous other articles that would find a ready sale. The Singer sewing-machines may be found in many homes in these islands, and as the company has established a salesroom in Manila and another in Iloilo, I infer that the market is found reasonably good, at least.

NOT A FAIR COMPARISON.

The only objection I have heard to American goods is the price, and the idea that they cost, as a class, more than the manufactures of other countries is acquired by comparing lines of goods that America never did, and, I think, never can, make and sell as cheaply as Germany, England, Switzerland, and France. I refer to toys, fancy articles, and what are known as "notions." There are also laces, silks, embroideries, etc., in the sale of which, in the East, America, of course, can not compete with Europe. Some of the stores are filled with articles that look very attractive, but are cheap in every sense of the word. They are made in Europe, sell readily at what appears to be a reasonable price, and afford a large profit. It is admitted that American goods of a similar class are much superior in every respect, but they cost more and afford less profit. The same objection is raised to Spanish goods, and as a result Germany and England have the largest share of the trade, not only in notions and fancy goods, but in many lines which, it seems quite possible, could be furnished by the United States. But European manufacturers bid for the trade and Americans do not.

PAPER BAGS WANTED.

In passing I want to call attention to the item of paper. There were imported last year 2,300.38 tons, of which 3 kilograms, or 6.60 pounds, are credited to the United States, and 2,332 tons to China. Considerable of this paper was probably made in China, the major portion of which was the coarse stuff used in the Chinese "tiendas" or shops here for wrapping purposes, but most of it was undoubtedly made in some other country and shipped to Hong-Kong, from whence it was sent here. America may have had a share of this trade amounting to more than 6 pounds.

Paper bags and good wrapping-paper and twine, such as one sees in the stores of America, are unknown here. You make a purchase at a grocery store and if the article is in a tin can or box, you are expected to take it as

it is without a wrapper; if it is something that requires a wrapper, you will get it rolled up in an old Spanish newspaper or a scanty piece of Chinese paper, something like the inside wrapper of a bunch of fire-crackers, which will tear upon the slightest provocation. It is rolled, but you get no string tied around it, and must take the chance of spilling your purchase before you reach your destination. If you ask for string, as I did once, the salesman will smile in a surprised way, elevate his shoulders, holding the palms of his hands out toward you, and reply: "No, Señor; no lo tengo." (No, sir; I haven't it.) He knows at once that you are a stranger in Manila, and his face and manner show that he pities your ignorance.

In the small Chinese tiendas and native shops pieces of the banana leaf are used for wrapping goods, and the package is tied with a blade of strong swamp grass, banana tree fiber, or thin strip of rattan. There is a mission here for the American paper bag.

A PENCHANT FOR PERFUMERY.

Florida water sells in large quantities, and the familiar bottles and labels may be seen on the shelves of every drug, dry goods, and fancy store in Manila. Allow a Chinese peddler to open his pack at your door and it is highly probably that the first thing he will produce will be a bottle of Florida water. Colognes, toilet waters, and numerous varieties of perfumes have large sales among the foreigners, and there are two quite large stores here devoted almost exclusively to the sale of that class of goods, while several of the drug stores carry quite large stocks. The majority of the people seem to have a passion for fragrant odors, and not only perfume their clothing liberally, but burn sweet-smelling gums, woods, and leaves in their homes, filling the air about them with delightful fragrance. As many of the natives keep their pigs and dogs under their houses and empty their slops there, too, there are generally several loud-breathing cesspools below, and the contest for supremacy between the odors is often vigorous and interesting.

BARRED OUT.

A few American patent medicines, notably Jaynes', Holloway's, and "Mother Sigel's Sirup," have been sold here quite largely, but can come here no more unless the manufacturers consent to comply with the provisions of a decree issued about four weeks ago, which requires that the formula by which patent medicines are made shall be printed on the outside wrapper of each package so that it can easily be read by all purchasers. This is considered by local druggists as an effectual bar to the entry of all patent medicines, as it is not probable that the manufacturers will consent to make public their formula except in very rare cases. When the supplies on hand are exhausted the medicine takers will have to find new remedies for their ailments or give up being sick.

DIMINUTIVE HORSES.

American buggies and carriages are quite numerous on the streets of Manila, and, I believe, are all shipped here by a Philadelphia firm. Light broughams, dog-carts, and victorias find a ready sale, but they must be very light, as all the horses are very small. They are very much like Australian ponies, both in size and powers of endurance. Large horses of the breeds common in the United States are not often brought here, it being popularly believed that they can not stand the climate. I have been told that quite a number of persons have tried to keep and breed the larger horses, but that the experiment has always proved a failure; that they soon become unable to work, and in a short time thereafter laid down and died. I do not understand how the little horses or ponies used by the native "caromata" drivers manage to keep alive under the treatment they receive, to say nothing of the climate. They are threshed up and down the streets from early morn until far into the night, hauling passengers hither and thither, probably only half fed, and yet apparently healthy and vigorous at all times. Some of them look a little discouraged, but the majority are in good condition. They are never used, however, for hauling freight or other heavy loads; that sort of work is left to the Chinese coolies and "carabaos" or water buffaloes. The latter animal is about the size and shape of a half-grown ox, with a hide like an elephant's, and a pair of great curved horns about 6 inches in diameter at the base, and from 2½ to 3 feet long. These beasts are hitched singly to small, low, two-wheeled drays and haul enormous loads at a most aggravatingly slow pace.

AN OPENING FOR A DAIRY FARMER.

Dairy products are exceedingly scarce and very high, and there is apparently no reason why an enterprising dairy farmer could not make a great deal of money here with a few good cows. Butter in tin boxes and glass bottles, imported from Europe, sells at the rate of $1 a pound; small Holland cheese at $1.50 each; a very inferior article of English and German cheese at from 50 to 75 cents a pound, and the Swiss cheese at from 62½ to 75 cents. One house occasionally gets an American cheese and sells it off at a good profit almost as fast as it can be cut, but the intervals between cheeses are very long, as it is less trouble to get and keep the other kinds. It is not considered wise to be too active and enterprizing in this climate.

There are a few cows owned by private families who consume the milk, and have little or none to spare; but occasionally cow's milk can be had at the rate of 50 cents a quart. Native milkmen sell the milk of the carabao at 25 cents a quart, but it has a strong, disagreeable taste, which renders it unpopular except with the natives, who have never been accustomed to any other kind. It is used sometimes for cooking by some of the foreign families. As a rule everybody, except the very few who own cows, uses the American condensed milk (Eagle brand), and it sells at retail for 37½ cents

a can. There are one or two brands of milk-powder on the market, but they are not extensively used.

Cows apparently thrive here, and I have heard of no good reason why there are not more here, nor why a dairy farm on the American plan could not be made a most profitable investment. There is good grazing, and nipa sheds to protect the animals during the rainy season could be constructed at a comparatively slight cost. Corn is very plentiful, and "palloi" or unhulled rice, the food given to horses and cattle, is comparatively inexpensive. In fact, a man with an eye to economy would raise his own corn and palloi. He could sell all the milk, butter, and cheese he could produce at the prices I have quoted.

UNDEVELOPED RESOURCES.

I have not been here a year, and, of course, I have a great deal to learn of the islands and the resources of the interior of the country, but my observations thus far, which have been as extensive as my official duties would permit, lead me to believe that the possibilities here for men of temperate, industrious habits, who are not afraid of the climate, are very promising. I may have underestimated the climatic conditions and overestimated a white man's ability to endure them; but at present I believe that the statements I have made are strictly accurate.

Little attention is paid to agriculture, and yet the land is rich and fertile, and the climate is favorable to vegetable growths of all kinds. Delicious fruits and vegetables grow wild, and nature seems to be only waiting to respond to intelligent effort and pour forth her treasures most lavishly. Every white man who comes here drops at once into trade in the cities unless he comes as an officer in the Spanish service or has a special mission that will not admit of his doing anything else. No one thinks of trying to get a fortune from the interior of the country, and the exportation of hemp, sugar, coffee, indigo, etc., is considered, apparently, the only occupation that an American or Englishman ought to engage in. Coffee is a comparatively new article of export. A few years ago none was shipped, but last year 5,447.74 tons were exported, none of it, however, going directly to the United States. About 40,000 Manila hats were shipped to the United States last year.

PROFESSOR STEERE'S EXPLORATIONS.

There are many things which, although abundant in various parts of the archipelago are seldom or never exported. Natives come into Manila with great bamboo trays on their heads loaded with the finest kind of ginger root, which they dig in the woods, where it grows plentifully, but as far as I have learned none of it is ever exported. They sell it to the small Chinese dealers, who retail it to the city natives, and the latter make a weak tea with it to drink with their rice and fish. Prof. J. B. Steere, professor of zoölogy at the University of Michigan, Ann Arbor, Mich., who has been exploring these islands for the past year, tells me that arrowroot grows in great abun-

dance on some of the southern islands, but none of it is ever exported. Professor Steere, who has been accompanied by Messrs. Dean C. Worcester, Frank S. Bourns, and E. L. Moseley, has made a number of interesting discoveries in the way of new species of birds and beasts, and, incidentally, has studied quite closely the trees, fruits, and plants of the archipelago. He is now on his way home, and I have no doubt that the report, which he contemplates making soon after his arrival, will be looked for with great interest, not only by scientific men but by merchants and traders, who will find it a mine of most valuable information. This is Professor Steere's second visit to the Philippines, and I am quite satisfied that there is no man living to-day who has explored the islands so thoroughly, or who has anything like the vast knowledge of their resources that he has acquired. He is strongly impressed by their immense wealth in rare woods, gums, plants, etc., and the undeveloped possibilities for men of intelligence, industry, and capital.

The jungles are filled with rattan of all varieties, and quantities of it are used by the natives instead of nails in building their houses, while the Chinese make pretty furniture of it, but I have never heard of any of it being exported. Cocoa-nuts are very plentiful and millions of them, formed into immense rafts, are floated down the rivers and creeks to the cities and towns where they are sold. Quite a large number are eaten in the raw state, while many are made into preserves of various kinds, but by far the greater portion are converted into oil, which is burned in the native lamps or used to grease the raven tresses of the native belles. Very few are exported. Occasionally an enterprising Chinaman will fill a ship with them, top the cargo off with a few hides and betel-nuts, and ship them off to Hong-Kong, or some other port in China, but I think they go no farther.

Fragrant woods, herbs and gums, and medicinal plants and trees grow profusely, but no one pays any attention to them, except the natives, who gather small quantities and sell them as their necessities prompt.

I inadvertently omitted to say, when referring to the habits of the natives, that the average countryman does not take kindly to labor and indulges in it only when he finds it necessary to supply some of his pressing needs. If he should happen to need a shirt, or something for his family that could not be procured without money, or desired to contribute something to his church, he would go out and gather fruit, or ginger, or pine-apples enough for the purpose. But his wants are very few and he does not feel the necessity of work. This statement does not apply to the city native, nor to those living in the adjacent suburbs, who, as a rule, are quite industrious.

IMPORTED RICE.

As an illustration of the prevailing indifference to agriculture, the fact that it is found necessary to import rice is very striking. Rice is the staff of life for the natives and takes the place of bread. There is plenty of fertile land in these islands upon which it might be cultivated, and yet last year $1,304,000 worth was imported from China and Japan to supply the market

here. I have neither seen nor heard of a farm nor a farmer since I have been here, and yet I have seen tracts of rich land that I believe an American farmer would go into ecstasies over.

Many of the natives have little patches of corn, and for roasting or boiling when young it is fully as good as the average American sweet corn. When ripe and dry it is hard and flinty, like our best red corn, but I have never seen any of it shelled for sale on the market, nor is corn meal made, as far as I know. It is, apparently, raised only for roasting, and when green it is peddled about the streets by the natives, cooked and raw, for 1 cuatro (1¼ cents) per ear, and 3 reals (37½ cents) per 100 ears at wholesale. I am told that it reaches maturity five weeks after planting, and I am sure there have been two crops here since the first of last January.

Large quantities of indigo and ylang ylang are exported, but it is an exceedingly small percentage of what might be shipped. Ylang ylang, it is asserted, is peculiar to these islands and is found nowhere else. The fragrant blossoms are hawked about the streets of Manila in large bamboo trays by native women, who sell them by the handful to ladies and gentlemen who desire to perfume their trunks and wardrobes. There are quite a number of other aromatic blossoms, leaves, and roots used for similar purposes, which grow in profusion in the interior and are sold about the streets in small quantities.

THE MANILA MANGO.

Among the many luscious fruits of the islands the mango is the most famous. It is asserted that nowhere in the East does this fruit reach such perfection as in the Philippines, and the "Manila mango" has a great reputation throughout this side of the world. It is about the size and shape of a slightly flattened goose egg (probably a little larger), with a yellowish skin, and meat a light shade of lavender. It is very juicy, and has a rich, peachy flavor, with faint suggestions of half a dozen other kinds of fruits. Of course, it can not be shipped in its natural state, but it and many other fruits might be preserved or canned, and exported to the United States and other countries quite profitably. When the mango first makes its appearance in Manila, in January, it sells for most extravagant prices. This year the early ones sold for 50 cents each, and I heard it said that some of the wealthy Spaniards paid as high as $10 a dozen for them; but after the first week or two the price drops to 25 cents each; then to $1 a dozen, and continues to decline until the market is full of them at 12 and 15 cents a dozen at retail.—MANILA, *August 1, 1888.*

ALEX. R. WEBB,
Consul.

THE SILK TRADE OF CANTON IN 1887.

[From Bulletin Consulaire Français, December, 1888.—Translation.]

The cocoons of Canton give many hatchings, and there are seven harvests a year; the first beginning generally in the early part of May and the seventh about the month of December. Formerly the production of silk-worms in Canton no more than supplied the native consumption, and the exportation of silks was relatively inconsiderable; but as early as 1868 the local consumption absorbed only the half of the annual production, and from that time the facility of communication has increased greatly the export trade. To-day the consumption is not more than 20 per cent. of the supply.

The increase of exportation has resulted in the development of production. Fields of rice have given place, in a great part of the province of Kouang-tong, and notably in the environs of Canton itself, to plantations of mulberry trees. The districts of Sam-Choui (San-Chouei), Ko-Ki-Chan (Honô-Chan), Takchoun (Tôchoun), and Pun-U (P'an-Yu), formerly with immense rice plantations, are, to-day, nothing but vast plantations of mulberry. The Chinese, it may be said in passing, do not permit the trees to develop as they develop in Europe, or in the districts of silk-raising of Tche-Kiang. Each year they cut the shoots close to the ground, and the trunk, as soon as it has attained a certain size, is immediately torn up to make place for the young roots. A certain number of spinning factories have been established by the natives in many districts, which will be named hereafter. The name *tsatlées* is given to the silks produced by these factories. These *tsatlées* are divided, according to the size of the mesh, into seven classes, which are called curio, or extra, Nos. 1, 2, 3, 4, 4½, and 5. The curio are the finest, and, accordingly, the price is higher. From these *tsatlées* is performed, for the market of New York, the operation of rewinding under revolutions of 1 m to 60 a turn. Manual labor being very dear in the United States, the buyers prefer to have the work done in China, where it costs little. These silks are known under the name of rereels (rewindings). They are divided into five classes—extra, Nos. 1, 2, 3, and 4.

Four countries take the silks of Canton—France, England, the United States, and India (Bombay). France occupies the first rank in the export trade; the silks are exported in larger quantities to this country than to London. The principal French markets for the silk of Canton are Lyons, Marseilles, Paris, Saint Etienne, and Saint Chamous. These cities receive annually more than their share of the total production. The silks destined for Europe and America are examined before purchase by specialists, known as inspectors of silk. The American house, Russell & Co., employs here two Frenchmen, of Lyons, for this purpose—Messrs. Pasquet and Pamet. It is different with the silks sent to Bombay, these being carried in bulk to a special market and the buyers being content to discuss the price with the Chinese merchants who offer them, and never inspecting the bales, as is done for Europe and America. It is to the interest of the native merchant to preserve the reputation which he has acquired in the market, and to be careful and not deceive the buyers in the quality of the merchandise. In case he should do so, he would certainly, upon discovery of the imposition, be put under the ban of the commercial houses, and would lose their patronage. I am happy to say that the important native merchants are honest in their dealings with Europeans, and that disingenuous proceedings are never perpetrated save by merchants of lesser consequence and credit.

The following table shows the importance of silk exportation from Canton:

		Piculs.	Taels.
Silks:	Raw, white	22,835	6,593,809
	Raw, opened	121	46,435
	Scraps	779	66,905
Cocoons		2,574	185,378
Refuse		12,340	869,544
Pieces of silk		7,608	3,626,806
Embroideries		253	230,883

	Piculs.	Taels.
Pongees, chaufoung	2	510
Wadding of silk	66	27,482
Silk thread	500	248,078
Ribbons	451	160,486

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NOTE. — 1 picul = 133⅓ pounds; 1 tael = $1.50.

Comparative table of silk exports from 1878 to 1887.

Year.	Manufactured.	Opened silk.	Refuse.	Scraps.	Cocoons.
	Piculs.	*Piculs.*	*Piculs.*	*Piculs.*	*Piculs.*
1878	12,547	134	5,891	3,200	1,645
1879	16,232	128	7,660	3,531	2,001
1880	10,310	230	7,136	1,852	604
1881	15,038	303	7,888	2,963	2,234
1882	16,232	273	7,805	2,347	970
1883	17,786	319	11,390	3,461	708
1884	11,866	245	8,715	1,516	90
1885	11,349	142	8,016	1,695	2
1886	19,328	78	11,221	3,779	1,978
1887	22,829	122	12,325	779	2,570

The campaign of 1887 is now opened in Europe and America under sufficiently prosperous auspices. The influence of the rise in prices, which was foreshadowed in 1886, was felt in the market of Canton, but only for a moment. The markets have not been slow in letting down gradually from the opening of the new season in silks (middle of May). From this time forward they have been maintained in a condition a little more analagous to that of the year before.

The table following gives, in piasters and piculs, the prices which have been paid for the *tsatlées* (silks of native process), the rereels (rewindings), the pun-jam (silk of larger woof of waste cocoons), the manufactures (silks produced by European spinning factories), pierced cocoons (cocoons), during the period between the months of June and December:

Quality.	June.	July.	August.	September.	October.	November.	Dec.
Tsatlées:	*Piasters.*	*Piasters.*	*Piasters.*	*Piasters.*	*Piasters.*	*Piasters.*	*Piasters.*
Curio	.....	445 to 450	.....	465 to 470	480	.....	465
No. 1	410 to 415	405 to 410	420	425	425	420	420 to 425
No. 2	380 to 385	389 to 385	400	405	405	400	395 to 400
No. 3	365 to 370	365	380	385	390	380	480 to 385
No. 4	355	350	365	370	370 to 375	360	365 to 370
No. 4½	.....	340	355	360	350 to 365	.....	350 to 355
No. 5	.....	330	.....	345 to 350	.....	.....	340 to 345
Rereels:							
Extra	.....	.....	520	520 to 525	.....	515	.....
No. 1	460	450 to 455	465	470 to 475	475	460 to 470	460 to 465
No. 2	440	430 to 435	445	450	455	450	440 to 445
No. 3	420	410 to 415	425	430	440	435	425 to 430
No. 4	405	.....	.....	.....	.....	.....	.....
Waste, No. 2 gune	93	92 to 93	92	93	.....	80 to 90	88½ to 90
Pun-jam waste	92	92	92	92	88	88 to 89	85 to 86
Rereels waste	99 to 100	128	128	128	100 to 122	.....	113 to 115
Manufactures:							
Waste	.....	92	.....	.....	.....	.....	.....
Second class	480 to 485	.....	580	.....	.....	.....	520
Third class	.....	.....	540 to 555	.....	.....	.....	480
Pierced cocoons	.....	.....	.....	88	91 to 92	.....	.....

[1 piaster = 1 Mexican dollar.]

Considerable business has been done in the spinning-mills, and the silks produced by European factories, principally for the market of Lyons. The increase of production and of exportation of these manufactures is the characteristic trait in commercial operations in silks during the year 1887. A comparison of totals of exportation this year with those of the year preceding shows a difference of 2,241 piculs in favor of 1887. The diminution to be remarked in the exportation of waste silks, or wads of silk, is due to the plush, in the making of which the scraps of silk are used, and which is becoming less and less the fashion in Europe.

G. H.

CUSTOMS DUTIES OF BRAZIL.

I have the honor to communicate the approval by His Majesty the Emperor of a bill passed by Parliament, containing the following clauses, to wit:

"The Government is authorized to establish a sliding scale for duties on foreign articles competing with those manufactured in factories already operating in the Empire, that employ native raw material, accompanying the rise in exchange above 22½*d.* per milreis (1$000); to increase the duty on cotton and jute fabrics, so that native manufactures of these materials may not suffer from competition; to revise the custom-house tariff in relation to imports from the United States, in conformity with the treaty which may be negotiated with that nation, for the purpose of obtaining advantages at least reciprocal for articles of natural production imported by that country; to revise the tariff for the purpose of reducing the duties on chemicals used for preparing manures, and to exempt from duty and from the 5 per cent. surtax the following chemicals, when intended for agricultural purposes: Superphosphate of lime, nitrate of potash, sulphate of ammonia, sulphate of iron, silicate of potash, sulphate of copper, bi-sulphate of carbon," etc.

As exchange is now at 27⅛*d.* per milreis (1$000), the effect of the first of the clauses will be to produce an increase of over 20 per cent. in the duties on articles affected by it. As far as American merchandise is concerned, a remedy against the injurious effects of this and the second clause may be found in that which follows; for, should we succeed in negotiating a commercial treaty in sufficiently advantageous terms, the provisions of these clauses would not only be inoperative against us but would actually redound to our benefit, as any increase in duties not affecting us would give us a decided advantage over the nations competing with us for Brazilian trade.

There will probably be in the coming year such a dearth of provisions in this country as to cause suffering, owing not only to the drought now prevailing in the province of Ceara, but also to the failure in many localities to plant sufficient food crops. In these circumstances it is possible that Brazilian statesmen will be disposed to regard favorably the idea of reducing or even abolishing the duties on American breadstuffs.

Altogether, it seems to me that we now have an opportunity such as seldom occurs, for extending our trade; for, should our products obtain a firm foot-hold in Brazilian markets, it will greatly facilitate their introduction into other markets of South America.—RIO DE JANEIRO, *November 28, 1888.*

H. CLAY ARMSTRONG,
Consul-General.

NOTES ON SOUTH AFRICA.

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One gets but little idea from books of the territorial extent or the commercial importance of this almost unknown country — unknown at least to the average American. The area of the colony at the time of the British occupation was about 120,000 square miles; now it covers 300,000 square miles, with a population of nearly 2,000,000. It extends over sixteen degrees of longitude and ten degrees of latitude, capable of large and varied agricultural products, magnificent pastures for the grazing of cattle and sheep, and with vast riches yet to be opened by the patient research of her sons.

Its capital city, Cape Town, has, in Table Bay, one of the most beautiful harbors in the world, whose safety has been recently augmented by the construction of a magnificent breakwater, with ample dock room, in which the largest steamers can enter at all states of the tides, and from which they can discharge their cargoes directly into cars. The dry-dock facilities are all that could be desired, and ships in distress need no longer hesitate to put into the port for repairs. To guard this important harbor, old fortifications are being reconstructed and new ones have been begun, in which will be mounted the best and most approved modern ordnance.

On the west coast there are no important harbors for a long distance from the Cape; but on the east side they are frequent, of growing importance, and large sums of money are being annually expended, under the direction of competent engineers, in their improvement. The first port reached on this side at which we have a consular agency is Port Elizabeth, a city of rapidly-growing commercial importance, the citizens of which are noted for their enterprise and business energy, and with which we have no inconsiderable trade, amounting in value in 1887 to half a million dollars. It is 460 miles by water from Cape Town, to which it is also connected by railway. The weekly steamers from England discharge and receive cargoes here, both outward and homeward, and intermediate steamers make frequent calls, as they also do at East London and Port Natal, further up the coast.

East London, where is situated our second agency, is a prosperous and thriving city, and a line of railroad has been extended from it to the Orange River, on the border of the Orange Free State, between which and the port close commercial relations exist. It lies at the mouth of the Buffalo River and seems to be destined to be one of the chief natural outlets for the trade of the Free State. The dangerous bar which obstructs the mouth of the river and has been such a hindrance to the trade of the town, obliging large vessels to lie in the open roadstead in an exposed situation while discharging and loading cargoes, has been dredged to such depth that a steamer of 850 tons and a bark of 545 tons, drawing 15 feet 6 inches, have recently passed the channel and ascended the river to the wharves, hailed with all the pomp and ceremony that usually attends the completion of a great undertaking.

There is no question but this enterprising outlay for the improvement of the harbor will add materially to the trade and prosperity of this section of the colony.

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Natal, our next and northernmost agency on the east side in this consular jurisdiction, is 850 miles by water. As previously said, this colony enjoys the same shipping facilities as the other parts just mentioned. The colony of Natal, of which the Durban, or Port Natal, is the principal outlet, comprises an area of 21,000 square miles, with a population of perhaps half a million. Like her sister colony, the Cape, she is reaching out her railroads to secure her share of the profitable business of the Free State and the Transvaal, which, since the remarkably rich discoveries of diamonds and gold, is certain of a rapid and continuous growth.

I may be pardoned if I touch slightly on a portion of the east coast outside of this consular jurisdiction. I allude to Delagoa Bay, now the terminus of the regular steam-ship line that connects the eastern coast of Africa with the British home government. Postal and other communication are frequent, and the general trend of all business, trade, railways, etc., all tend from this arc of a circle, I may say, to the interior; of which arc Cape Town is at one and Delagoa Bay at the other extreme. So much for the coast ports and business.

On the northern border of Cape Colony, and 647 miles from Cape Town, to which the railroad gives first-class service in thirty hours, is Kimberly. Situated in the rich diamond district, from which it is estimated that from 1864 to 1885 over $200,000,000 worth of the precious gems have been exported, and that an annual production of $15,000,000 to $20,000,000 in value are now produced. During the month of October just passed 279,677 karats of rough diamonds were exported, the declared value being $1,547,161. When one considers that only three years ago the last 80 miles in the railway line from Cape Town to Kimberly was opened, the marvelous progress of this section is apparent. The population of the town and vicinity of the mines must be 20,000. Kimberly is on the main route to the gold fields from the Cape, as well as the diamond center, and hither come the people of all nationalities in their eager search for wealth, of which nature is so prodigal here; and it is not surprising that many adventurous Americans should have cast their lot in this wonderful land of such promise.

The Orange Free State has an area of 75,000 square miles, with a population of over 75,000, which is rapidly increasing. It is generally a pasturage country and admirably adapted to grazing purposes. It would seem singular if this section of South Africa, with rich gold fields so near her border on the north and wondrous deposits of diamonds contiguous to her western limits, should not be found, after careful prospecting, to be rich with one or both of these gifts of nature. Its capital, Bloemfontein, is about the same distance from Cape Town as is Kimberly. A glance at the map will show what close relations Port Natal will sustain to the Orange Free State in the near future, when the railroad from the former, now close to the border, shall have been extended into the territory of the latter.

More especially will this be conceded when it is understood that the duties levied by the colony of Natal are about one-half of those laid upon imports by the Cape Colony. While the railway line to the interior is much shorter, the water carriage is increased by 850 miles over that of the Cape. An effort was made earlier in the year to equalize tariffs by means of a customs union, to which Natal would not give her consent. An arrangement of this kind will probably be effected in the near future. Whatever may be done, however, it would seem to be "manifest destiny" that Natal should absorb a large share of the trade of the Free State and the southern portion of the Transvaal. It is interesting to note that Natal now shows in her trade returns that the United States follows England, and stands second in commercial relations.

Directly north lies the Transvaal, or South African Republic, between 22° and 28° south latitude and 25° and 32° east longtitude. The area of the state is about 120,000 square miles, with a rapidly increasing population, allured by the astonishingly rich deposits of gold to be found within her borders. Rich as these mines have been proved to be, when it is recollected how recent has been the discovery of gold in this section, and how little real scientific prospecting has been done, it can readily be believed that even richer prospects are in store for her. In a letter just received from an American doctor in Zoutspanburg he writes: "This is one vast gold field * * * * a fine, healthy country, and affords a splendid field for our countrymen with small capital and brains. You should point out to them the fine field there is here, especially for practical miners." The shipment of gold from the Cape for last month was 17,856 ounces, valued at $295,133. Value since January 1, 1888, $1,970,185.

Bechuanaland comprises all that territory between the Atlantic coast and the Transvaal, over ten degrees of longtitude, and stretches from the Cape Colony to the Zambesi. Being now a protectorate of Great Britain it comes under the jurisdiction of this consulate. From its present known wealth in gold that recent explorations have brought to light, it will assuredly attract thousands to the already considerable number that are now in the field. All reports that reach us in Cape Town are of the most encouraging nature, and no doubt is felt in the minds of those most conversant with the subject that this territory will rival, if not become the superior to the Transvaal in the richness of its mines. From explorations already made and reported upon, I am of the opinion that the alluvial ground will be found to be wide and rich.

Nothing remains to open up this vast region with its wealth of minerals but the extension of the railway, which, I have already observed, is now at Kimberly. The survey for this extension is now completed for a long distance, and material is now on its way from England. Geographically considered, this road will be the main artery to the interior of south Central Africa, and by lateral branches to the east and west an immense section of country will be opened, now almost practically unknown, except by the car-

avan trade, to the commerce of the world. Of its political advantage there can be no question, for it will tend to fuse colonial interests and to the consolidation of South African unity. A recent writer has said: "By the establishment of the protectorate over the country of Bechuanaland, and north to the Zambesi, the old intrigues between the Transvaal Government and Germany have been put an end to, and England can afford to watch with coolness and equanimity the gradual consolidation of South Africa." The racial antagonism of the Boers (Dutch farmers) is being rapidly eliminated from practical politics, and the extension will tend, more than anything else, to its final extinction.

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Through Bechuanaland runs the great trade route to the Zambesi and the interior, a toilsome, weary march for caravans of over 800 miles. What will be the future of this great territory when the iron horse shall have supplanted the many-yoked bullock wagon one can only conjecture; but it can be easily conceived that the primary effect will go far to pacify and hold in subjection the many tribes within its influence, and will have a powerful effect in the trade of the upper country. English predominance on the Zambesi would most certainly be guarantied; an English wedge would be driven through the upper country, effectually cutting off the German territory on the west from the Portuguese possessions on the east, effectually preventing any coalition of the two for the closing of the rich Zambesi valley to British trade. It will also provide a new base of operation in the valley for the further extension of railways, trade, and influence. Whether Bechuanaland shall be handed over to the Cape Colony and, by annexation, become an integral part of this colony, or whether it shall remain simply a protectorate of the Empire, English power and influence in Bechuanaland and Matableland will be assured, and in the extension of this influence Cape Colony will take the lead. Whatever of material advantage in a commercial view may occur to the other sea-ports, Cape Town will still retain its supremacy as being the seat of the colonial government, and a residential city whose situation and manifold advantages will tend to attract the wealth and culture of the colony. In a paper of this nature a more extended reference to this city might be out of place, but if a line of packet steamers should be established between this and an American port I should take pleasure in presenting to my countrymen the many advantages of this place as a health resort, amid magnificent scenery, and the delightful character of an ocean voyage from the United States.

To return to the railway question, a line from Protoria in the Transvaal, tapping the trunk line at Kimberly, would open up both the Orange Free State and the Transvaal to the trade of the Cape, and make healthy competition with the line from Port Natal or Delagoa Bay. This will undoubtedly be done in the near future, as negotiations for such extension are already well advanced.—CAPE TOWN, *November 17, 1888.*

GEO. F. HOLLIS,
Consul.

REPORTS

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FROM THE

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FOREIGN WEIGHTS AND MEASURES, WITH UNITED STATES EQUIVALENTS.

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Denomination.	Where used.	United States equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Alexandria	7.6907 bushels.
Arratel or libra	Portugal	1.011 pounds avoirdupois.
Arroba	Portugal and Brazil	32.38 pounds.
Do	Spain and Buenos Ayres	25.36 pounds.
Do	Spain (wine)	4.26 gallons.
Artal	Morocco	1.12 pounds avoirdupois.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Candy	Bombay	560 pounds avoirdupois.
Do	Madras	500 pounds avoirdupois.
Cantar	Turkey	124.7036 pounds avoirdupois.
Catty	China	1.333 pounds avoirdupois.
Do	Japan	1.31 pounds.
Do	Java, Siam, Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centner	Bremen	127.5 pounds.
Do	Brunswick	117.5 pounds.
Do	Darmstadt and Zollverein	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Vienna	123.5 pounds.
Cuadra	Argentine	4.2 acres.
Fanega	Mexico	1.54728 bushels.
Do	Peru	140 Castilian pounds.
Feddan	Egypt	1.03 acres.
Gramme	Metric	15.432 grains avoirdupois.
Hectoliter	do	26.417 quarts.
Kilogram, or kilo	do	2.2046 pounds avoirdupois.
Kilometer	do	0.621376 miles.
Koku	Japan	5.13 bushels.
Last	Belgium and Holland (dry)	85.134 bushels.
Do	England, for dry malt	82.52 bushels.
Do	Prussia	112.29 bushels.
Libra	Castilian	7100. grains troy.
Do	Chili	1.014 pounds avoirdupois.
Liter	Metric	1.0267 quarts.
Livre	Guiana	1.0791 pounds avoirdupois.
Maund	Bengal	82.285 pounds avoirdupois.
Do	Bombay	28 pounds avoirdupois.
Do	Madras	25 pounds avoirdupois.
Do	Persia	27.32 pounds avoirdupois.
Meter	Metric	39.37 inches.
Do	Metric (cubic)	1.308 cubic yards.
Do	Metric (square)	1550.0 square inches.
Oka	Egypt	2.7235 pounds avoirdupois.
Do	Hungary	3.0817 pounds avoirdupois.
Do	Turkey	2.83418 pounds avoirdupois.
Picul	Borneo and Celebes	135.64 pounds.
Do	China and Sumatra	133⅓ pounds.
Do	Japan	130 pounds.
Do	Java (Batavia)	135.10 pounds.
Do	Hemp of Manila, Philippine Islands	139.45 pounds.
Do	Sugar of Manila, Philippine Islands	140 pounds.
Pie	Argentine Republic	0.9478 feet.
Do	Castilian	0.91407 feet.
Pic	Egypt	21¼ inches.
Pik	Turkey	27.9 inches.
Quarter	England	8.252 bushels.

FOREIGN WEIGHTS AND MEASURES—Continued.

Denomination.	Where used.	United States equivalent.
Quintal	Brazil	130.06 pounds avoirdupois.
Do	Buenos Ayres	101.42 pounds avoirdupois.
Do	Castille, Chili, Mexico, Peru	101.61 pounds avoirdupois.
Do	Metric	220.47 pounds.
Tael	Cochin-China	590.75 grains troy.
Tan	Japan	0.25 acres.
Tonde (ton)	Denmark	3.94783 bushels.
Vara	Castilian	0.914117 yard.
Do	Curacoa, Cuba, and Peru	33.375 inches.

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VALUES OF FOREIGN COINS.

As adopted by the United States Treasury Department January 1, 1889.

Country.	Monetary unit.	Par of exchange or equivalent in terms of U.S. gold dollar.
Argentine Republic	Peso	$0.96,5
Austria	Florin	.33,6
Belgium	Franc	.19,3
Bolivia	Boliviano	.68
Brazil	Milreis of 1,000 reis	.54,6
British possessions in North America	Dollar	1.00
Chili	Peso	.91,2
China	Haikwan tael	1.20
Cuba	Peso	.92,6
Denmark	Crown	.26,8
Ecuador	Sucre	.68
Egypt	Pound (100 piasters)	4.94,3
France	Franc	.19,3
German Empire	Mark	.23,8
Great Britain	Pound sterling	4.86,6½
Greece	Drachma	.19,3
Guatemala	Peso	.68
Hayti	Gourde	.96,5
Honduras	Peso	.68
India	Rupee of 16 annas	.32,3
Italy	Lira	.19,3
Japan	Yen (Gold)	.99,7
	Yen (Silver)	.73,4
Liberia	Dollar	1.00
Mexico	Dollar (silver)	.73,9
Netherlands	Florin	.40,2
Nicaragua	Peso	.68
Norway	Crown	.26,8
Peru	Sol	.68
Portugal	Milreis of 1,000 reis	1.08
Russia	Ruble of 100 copecks	.54,4
Spain	Peseta of 100 centimes	.19,3
Sweden	Crown	.26,8
Switzerland	Franc	.19,3
Tonquin	Piaster	.72
Tripoli	Mahbud of 20 piasters	.61,4
Turkey	Piaster	.04,4
United States of Colombia	Peso	.68
Venezuela	Bolivar	.13,6

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CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

N. S.—No. 2.—FEBRUARY, 1889.

AGRICULTURE AND PROTECTIVE MEASURES IN FRANCE.

The year closes in France upon a commercial and agricultural situation better in some respects than that of twelve months ago, and interesting chiefly by reason of the present aspects of national legislation upon economic questions. Here, as in most other countries, the struggle to maintain profitable values of domestic products against foreign competition and at the same time to provide export markets for the fruits of surplus production, has led to a sharp conflict of interests in respect to protective tariffs and commercial treaties. The more obvious features of the situation may be briefly summarized as follows:

THE AGRICULTURAL RESULTS OF 1888.

The effects of the cold, rainy summer upon the wheat crop of France, the reduction thereby of its quantity and injury to its quality, have been described in recent reports from this consulate. The consequent deficit in breadstuffs has been and is still being met by largely increased wheat imports to which the United States, by reason of the high prices which now prevail in American markets, are contributing only a small proportion.

In respect to wine, the other great agricultural staple of France, the season has been much more propitious. Notwithstanding the cool, damp weather, which, until the middle of August, caused general apprehension lest the grapes in all except the most favored situations might not ripen, the vintage has been, both in quality and quantity, one of the best that has been gathered in recent years. It amounts to 30,102,600 hectoliters, as against 25,063,000 in 1887 and 28,536,000 in 1886. The increase is particularly notable and gratifying in southern France, where the ravages of the phylloxera first became serious, and where the preventive remedies, and above all the reconstitution of the lost vineyards by replanting with American vines was first and most extensively practiced.

That which has been confidently predicted during the past three years has now been approximatively realized. The vineyards of France have been restored, if not yet to their former area at least to nearly their normal productive capacity by the planting of American vines, which, by virtue of their greater vigor both as direct producers and grafting stocks for favorite native varieties, have doubled the product of many vineyards in southern France. Nowhere, perhaps, will these facts be found more strikingly illustrated than in the departments of Herault and Gard, which form part of this consular district. For many years the department of Herault had been one of the most prolific in France in the production of ordinary red wines of high average quality. It was among the first to be invaded by phylloxera, which, favored by a dry season, almost destroyed the vineyards of the department in a single year. But at Montpellier, the capital of Herault, there is located one of the most efficient agricultural schools in Europe, and the agricultural enterprise and intelligence of that district are far above the average. Montpellier and its vicinity took an early and advanced position on the whole question of replanting the devastated districts with American vines. Experiments with every practicable variety that could be obtained from our vine-growers, new methods of culture, grafting, pruning, and fertilizing were entered upon with a spirit and intelligence almost phenomenal in this country. Hundreds of wine-growers abandoned the attempt to preserve their French vines by means of submersion, sulphuring, and other costly and uncertain processes, and at the first symptom of the fatal blight uprooted whole vineyards which were still productive and planted the soil with American vines. Montpellier became the mart and center of the American grape-root supply, and the new vineyards of Herault were among the first to reach the extraordinary productiveness which has now been realized. From 2,995,126 hectoliters in 1886 the wine product of that department rose to 3,746,989 in 1887, and this year has touched the remarkable figure of 4,508,000 hectoliters. In Amde the yield has risen from 1,896,843 hectolitres in 1887 to 2,861,000 in 1888. In presence of a result like this all the doubts and hesitation which have so long prevailed elsewhere are vanquished, and the Progrés Viticole, organ of the wine-growing interest in southern France, says triumphantly:

France can, therefore, produce enormously of wine. Our future vintages will at least equal the most profuse ones of former years. The present achieved results render that a certainty, and it will be almost wholly to the American vine that we owe this triumph. It is that which enables us to reconstitute our vineyards under the most diverse conditions. Its value to-day is undeniable; its superiority perfectly demonstrated. It is even apparent that the vines of the New World, planted in a soil well prepared, carefully cultivated, and grafted with varieties well adapted to the location, will give, other things being equal, a larger product than the native vines of former years. It is the year 1888 which gives us this assurance; it is this year which marks the definite, absolute triumph of the American vine. Who would have believed, when we were in the despair of the period of destruction by phylloxera, that a resurrection so prompt and certain awaited our ravaged vineyards? Who would have thought that the new ones could be created on such a solid and enduring basis? What a distance we have traversed during the past ten years.

But there is a reverse to this glittering medal. The years of diminished production and high prices of native wines developed enormous imports of wines from Spain, Italy, Greece, and Algeria, and, worst of all, stimulated the manufacture of *piquettes*, or raisin wines, made from dried grapes imported from Greece and Turkey. These being cheap and easily made, have become a substitute for native wines for consumption by the peasant and industrial classes, so that now, when the genuine wine product has been restored, there is no longer a profitable home market for it. All the more ordinary qualities of French wines are now cheaper than at any time for many years; and the farmers, impoverished by years of waiting and planting, are holding on to their brimming tuns and puncheons for a rise in value, which does not come. In the hurry of the recent vintage, thousands of farmers were forced to sell part of their new wine for whatever it would bring, from sheer lack of casks and room in which to store it, and these forced sales at nominal prices produced a depression from which the market has not yet recovered.

LEGISLATIVE REMEDIES.

It is a characteristic of French people of all classes, a natural result of their education and history, to look to a paternal government for the remedy for every general misfortune and grievance. The circumstances of the past ten years have united the agricultural classes of France under the banner of protection to home products by high and increasing duties on imports, and this idea is to-day dominant in French politics. The decree forbidding the entry of American pork products was the first concession to this spirit. The French swine grower could not compete with the farmers and meat packers of the United States, and although American meats were at first excluded under a pretense of impurity, which has long ago been abundantly disproven, no argument or influence has ever been able to secure the withdrawal of that edict.

The tariff on wheat and flour has been twice advanced during the past five years until it now amounts to a tax of 25 per cent. on the bread of the French people; but when, two months ago, the short home crop and largely increased import inspired a demand from the commercial and industrial classes that the duty on breadstuffs should be suspended or modified during the period of such crisis, the farmers and their deputies rose in opposition, and their protest prevailed.

Some measure of the same nature is now demanded to remedy the depression in wines. The importation of Italian wines, which amounted in value to 89,680,720 francs during 1887, was suddenly cut off in March of the present year by the rejection of the new treaty of commerce between Italy and France, but this has only resulted in a corresponding increase in the imports from Algeria and Spain.

Meanwhile there arose during the past autumn the question of ratifying a proposed commercial treaty with Greece. The problem presented was peculiar and many sided. Many of the inhabitants of southern France are

of Greek origin, the commerce of Marseilles is largely in the hands of Greek merchants, and the two countries, if not politically and commercially in close sympathy, are free from actual jealousies and resentments. Frenchmen, as a rule, would gladly favor the interests of Greece as against those of Italy or any other member of the triple alliance. Theoretically, the friendship and prosperity of both countries would be promoted by a liberal, generous treaty of commerce, and this the Greek Government formulated and proposed. But at Paris two obstacles to its acceptance promptly developed. Article 11 of the treaty of Frankfort compels France to concede to Germany all privileges which might in future be vouchsafed to the most favored nation, and then, moreover, there was the question of dried grapes and raisin wines. The whole wine-growing population of France rose in protest against the further admission of Greek raisins at the nominal duty of 2 francs per 100 kilograms, and demanded that the tariff should not only be advanced to 20 francs, but that the manufacture of *piquettes* should be surrounded with such restrictions as would practically exterminate it.

It is generally conceded that on this head the protectionists were able to make, from their standpoint, quite a plausible case. In 1875 the total importation of dried grapes into France from Greece and the Levant amounted to 8,223,000 kilograms. In 1887 this import had grown to 100,000,000 kilograms. A hundred kilograms of these grapes, soaked in warm water until fermentation begins, will produce from 10 to 12 hectoliters of so-called raisin wine, which, with the addition of coloring matter, glucose, and coarse alcohol made from figs, dates, carobs, or other material, becomes a cheap, intoxicating, and more or less deleterious substitute for wine. So that the dried grape import of 1887 was capable of producing 10,000,000 or 12,000,000 hectoliters of *piquettes*, a quantity equal to half the entire native wine product of France for that year, and which not only reduced the market value of the genuine wine, but degraded and poisoned the people and helped them along in that growing appetite for intoxicating stimulants, which is now becoming a real danger in France.

Thus, morally and economically, the agricultural party made so strong a case that when the Greek treaty came to a vote in the Chamber of Deputies on the 13th of December it was defeated by a vote of 268 to 257, which represents very closely the balance of the two parties in the present assembly and indicates the probable course of French legislation upon all similar questions during the life of the present chamber; for, in this country as elsewhere, men's political opinions are largely determined by their interests. In France the commercial and manufacturing classes uniformly favor either low duties or free-trade in all that concerns food imports or raw materials. The agriculturists, on the other hand, recognize the fact that they can no longer compete unaided with their rivals in new and more productive countries, and they not only demand higher duties on all imports of food and drink which can be grown at home, but they insist that all special treaties of commerce between France and other nations shall be abandoned as fast as they lapse by limitation.

France has at present commercial treaties with Austria, Belgium, Great Britain, Spain, Portugal, Sweden, and Switzerland. That with Italy expired, as already stated, several months ago, and the protectionists in both countries have thus far defeated all efforts to renew it. The treaty with Spain will expire in 1892, and unless the dominant sentiment in France changes before that time it will, in all probability, meet a similar fate.

"Cultivate sympathetic relations with foreign nations, but not at the expense of our national interests," is the watch-word of the ruling party in French legislation to-day, and its advocates argue that the logical effect of wholesale stock and wheat growing in North and South America and Australia, combined with cheap and rapid water transportation, is to force the older nations of Europe into a centralized, defensive attitude, in which protection to domestic products is an essential condition of national existence. However true or false this may be, the essential fact is that it now prevails and must be taken into account by the governments of such other nations as may in future seek to establish closer and more advantageous commercial relations with France.—MARSEILLES, *December 28, 1888.*

FRANK H. MASON,
Consul.

AMERICAN GRAPE-VINES AND THE PHYLLOXERA.

Dr. Géza von Horvath, of the Hungarian experimental station at Farkard, for the purpose of devising means to stop the depredations of the phylloxera, has published some observations with respect to the ability of American grape-vines to withstand the pest, which I have seen reproduced in the German press, and as what he says may be of interest in certain quarters in the United States, I herewith give the substance of it. Dr. von Horvath is said to have been experimenting for seven years past with American vines, and has given to the public all that he has learned of a positive nature regarding them, and his remarks compressed are substantially as follows:

From year to year the ravages of the phylloxera become ever greater, and the appearance of the pest in all the wine-growing districts of Austria-Hungary is only a question of time. The devastation of vineyards by the insect goes on unceasingly, while completely wasted vineyards mark where it has raged.

When it first made its appearance the wine-growers would not admit the greatness of the danger which threatened them, and received the admonitions of experienced persons with an incredulous smile, and treated the preventive measures of the Government as of no account, or at least as superfluous, but they have since come to a different conclusion from sad experience, and are filled with serious apprehension for their vineyards, and are looking around for a means with which to resist their implacable foe. One of the means to this end most often heard spoken of as meeting with practical success is the culture of American vines, and talk about the value of the American vines, their resistibility to the insect, the character of their fruit, the permanence

of the improvement brought about by them, and other questions connected with this subject may be said to have become the order of the day, and they have become the objects of the most conflicting opinions.

Some regard all kinds of American vines as exempt from the phylloxera, or, at least, as capable of resisting the insect, while others are of the opinion that none of the American vines are able to maintain permanent resistance. Then, again, some praise up one variety as especially adapted for the purpose, while others talk up another. Some think that the best thing to do is to graft German cuttings on American vines, while others have no confidence at all in the grafting, but are for the direct cultivation of the American vines, but this direct cultivation is opposed by many on the ground that the American grapes are bad in flavor and impart an unpleasant taste to their wine, or do not pay for their cultivation.

In view of such diverse and conflicting opinions it is extremely difficult for wine-growers to really ascertain what is to be expected of the American vines in their struggle with the phylloxera, and Dr. von Horvath's object in publishing the result of his studies and investigations is to aid them in solving the question.

The first question naturally asked is, what degree of resistance do the American vines actually offer to the phylloxera? Beyond all doubt that variety is the most resistive whose roots will not permit a lodgment of the insect on them, and such a variety, says Dr. von Horvath, is undoubtedly the *Vitis rotundfolia;* that is, the Scuppernong, for this can be asserted with positiveness of this grape. The roots of this grape will grow in a soil infected by the phylloxera without being the least injured by the pest, and there is never a trace of the insect to be found on them. But, unfortunately, this is all lost on the European wine-grower, as the wine of this grape is unpalatable to him; and, furthermore, European wines will not graft well with it, so that, as a basis for grafting, it can consequently not be profitably employed. Moreover, this grape comes from a southern climate and loves a warm soil.

With respect to all other varieties of American grapes and their offshoots it must be said that there is not one of them whose roots are entirely free from infection by the phylloxera. Their resistibility is, therefore, various. Some resist always and everywhere with certainty; others can do so only under certain circumstances, while many kinds of American grapes are fully as subject to injury from the phylloxera as the European.

It is no easy task to ascertain and define the exact degree of ability possessed by the different sorts of American grapes to withstand the ravages of the phylloxera. To do this properly much time and patience are required—careful observation and a great deal of experiment, coupled with an unbiased mind. Experiments in making previous trials have not been sufficiently governed by these considerations, and that is probably the reason why so many American grapes have been extolled as free from attack by the phylloxera that have afterwards turned out to be also subject to the insect.

Sorts which used to be regarded as perfectly able to cope with the pest have proved, after a few years of trial, to be victims to it. Without doubt there are certain varieties of American grapes that have shown themselves by twenty years of trial able to withstand the phylloxera under all circumstances, but there are some that will resist in certain localities only, and will not do so in others. The character of soil and locality of vineyard have, therefore, much to do with their value as resistive agents, and they are consequently unreliable. The soil particularly plays an important part, for it has been observed that in soils adapted to their nature they will offer resistance to the phylloxera, but will not in those not suited to them. With regard to resistibility to the phylloxera the American grapes, Dr. von Horvath says, can be divided into the following categories:

(*a*) Perfectly resistive are the *Vitis riparia*, *rupestris*, *æstivalis*, *cordifilia*, and *cinerea*, as well as the wild stocks from which they sprang. At their roots the phylloxera can live in but small quantities, and to them do but slight damage. Their resistibility is in no degree dependent on their adaptability to soil and climate.

(*b*) Very resistive is the York Madeira (Nador Isabella), which, even in the very poorest soil, does not lose its resistibility, because the phylloxera, although it may dwell in large numbers at its roots, is unable to inflict much damage on them. In France the *Vitis solonis* is considered equally as good a grape against the phylloxera, but Dr. von Horvath does not share in this opinion. The *Vitis solonis*, he says, does very well in many places, but in some, where the soil was dry and did not answer the requirements of its nature, he knows it to have gone down under the attacks of the insect.

(*c*) Good in their resistance are the representatives of the *æstivalis* group, especially the Herbemont, Jaquez, and Cunningham, as well as the Vialla, which maintain their resistibility in almost all kinds of soil, and vegetate quite luxuriantly; and it has seldom happened that they have shown an inability to resist the phylloxera on account of improper soil.

(*d*) Less resistive are those varieties which will withstand the phylloxera only in soils suited to their nature, and which on almost any soil will succumb in time to the pest. Such are the Clinton, Taylor, Elvira, Triumph, Othello, and Concord.

All varieties not above mentioned either do not withstand the phylloxera at all, or have not yet been sufficiently tested as to their ability to do so. The object in using the American vines is not to cultivate them exclusively, but by grafting European cuttings upon them to obtain strong roots from the American vines and fruit from the European. To improve a vineyard in this way costs a great deal of money, requires a great deal of care, and is attended with considerable failure.

The upholders of the American vines claim that grafting will last twenty to thirty years, and even longer when properly done. Dr. von Horvath takes issue with them here, however, and says the American vines have not been experimented with in Europe long enough yet to claim this length of time

for them, for it was not until 1871, in France, that the idea of using the American vines first sprung up, and the oldest graftings are now not more than ten to eleven years old, and that many of the graftings go to ruin in four to eight years, as numerous instances in France will testify.

As these facts could not be denied, and as the wild stock from which the *Vitis riparia* sprung—the so-called *Riparia sauvage*—was used in making the graftings, those interested, says Dr. von Horvath, have claimed that the failure was due to the fact that the soil in which the American species in question was placed was not adapted to it; that the engrafted cuttings in consequence did not get sufficient nourishment, and so died off; that the *Riparia sauvage* would not thrive in all kinds of soil, and was adapted, therefore, only to certain kinds, and that some other sort would have to be used where it would not do well. Then recourse was had to the Jaquez grape, which had done very well in France, prospered everywhere, and nowhere retrograded, but the Jaquez, says Dr. von Horvath, while a very good grape for wine, has not been much employed as a stock vine to graft upon, and the graftings made with it are much too young yet to establish its fitness. There are places, he says, where the Jaquez, notwithstanding all that is claimed for it, goes to ruin in four to six years, just as rapidly as the *Riparia sauvage*. The same experience he met with in grafting with the *Vitis solonis*—Taylor, and Clinton. On the average vintages from four to eight years only are to be expected from the American vines when engrafted with the European.

The direct cultivation of American vines for wine, without grafting with European varieties, does not meet with favor among European wine-growers, because no one accustomed to the use of European wine takes easily to wine from American grapes; but the wholesale destruction of the European vines by the phylloxera would render the direct cultivation of the American grape for wine necessary, and, as Dr. von Horvath expresses it, "he who does not own a horse must be content to ride a jackass, or plod along on foot." He thinks, however, that in time American varieties of grapes may be found not only resistive of the phylloxera but producing a superior grape to those American now known. The greater part of the American wine has what is known in Europe as a fox taste, to which Europeans can with difficulty become accustomed, but there are some varieties which are free from such taste, and can be of great service to the wine producer, such as the cultivated varieties of the *Vitis æstivalis*, especially the Herbemont and Jaquez.—MAYENCE, *December 20, 1888.*

JAMES H. SMITH,
Commercial Agent.

RICE CULTURE IN CENTRAL CHINA.

Rice is largely cultivated in all the provinces of this consular district; it is the leading agricultural product of some of them, and the chief article of food of a large majority of the people of China. Its importance as an article of food can only be properly estimated when we consider that fully one-fourth of the human race chiefly subsist upon it.

Great care and unremitting labor is bestowed upon its cultivation throughout China from the time it is sown in beds, prior to transplanting, until it is harvested. A bountiful harvest is hailed with joy; it produces prosperity in all branches of business, while a short crop is the precursor of hard times, and entails much privation and suffering upon the laboring classes.

The mode of cultivation is the same in all portions of the Empire, differing only in some minor details. The time of planting the crop varies according to the latitude. In some portions of the country north of the Yang-tsze, the beds or patches of ground in which the plants are grown are prepared for the seed as late as the middle of April, and the work of transplanting done as late as the middle of May. In the extreme southern provinces the crop is planted at a much earlier period. Two crops are raised each year in many of the provinces, though in this province (Hupeh), in the vicinity of Hankow, it is frequently the case that the farmer, after the crop of rice is harvested, does not plant the second crop, but plants the field in vegetables. Sometimes a crop of wheat or barley is first grown, followed by a crop of rice. The farmer does not at all times realize the most profit by this alternation of crops, but his land is not so much impoverished by this method, and his outlay for manure is necessarily less.

Rice, in this province, in the vicinity of Hankow, grows from 3 to 5 feet high, and when standing in the field, immediately preceding harvest, has somewhat the appearance of oats, though it usually has a less number of branches from the main stalk.

In addition to careful and thorough cultivation, the most powerful agents in producing a good rice crop are plenty of water and a liberal application of manure. The fields are flooded from the time of the first ploughing until nearly harvest and manure bountifully applied. The soil, though very fertile, requires to be supplied with manure, I am of opinion, more on account of the inferior methods of tillage than anything else. The land is not broken sufficiently deep, and that is the primary reason why many really fertile fields require manure. But any attempt to convince a Chinese farmer that a modern plow would be the means of producing a more abundant harvest and cause a less expenditure in the application of manure would be time thrown away. He prefers to follow in the old, well-beaten track that has been followed for centuries by his ancestors.

SIZE OF FARMS IN CHINA.

Land is held in small tracts, as a general rule, and the word farm in China has a far different signification from what it has in the United States. A farm often contains not more than 3 or 4 mao,* and sometimes less; but in some sections of this province (Hupeh) holdings of from 100 to 150 mao are not uncommon, and in rare instances larger tracts are owned.

* Land is measured by the mao, and in this province 6 mao are about equivalent to 1 English acre. The word mao has the same meaning and signification as the English word acre, in its primitive sense, and the German word acker, and is used to designate a field or measure of land. The mao is larger in some provinces than in others, just as the acre varies in area in the United Kingdom. The following is the table for land measurement in China: 4 chio = 1 mao; 1 mao = 16.73 square rods; 100 mao = 1 ching; 1 ching = 16.7 acres.

The owners of the large tracts do not cultivate them, but lease them and receive rent in kind, usually about one-fifth of the crop when the tenants supply everything.

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AGRICULTURAL IMPLEMENTS IN USE.

The agricultural implements used by the farmers of China are of the rudest construction, and of the same kind and pattern that were in use centuries before the Christian era No modern farming machinery or utensils of any kind are used by the natives in any portion of the Empire. One may travel hundreds of miles in the rural districts and never observe any change, no progress in any direction. The methods of tilling the soil in all respects are just the same as they were hundreds of years ago. Labor is abundant and very cheap, hence no thought is given to modern methods of agriculture. The farms are of such limited area and labor so easily procured at such astonishingly low rates that, in the estimation of the Chinese farmer, improved implements are not needed. He doubts the expediency of changing the old methods, when able-bodied, industrious farm-hands can be obtained at from $8 to $12 per annum.

There is a great prejudice in this province against anything foreign, and it would be almost impossible to introduce any kind of modern labor-saving implements.

PREPARATION FOR SOWING THE SEED IN BEDS PRIOR TO TRANSPLANTING.

A small plat or patch of ground, of sufficient area to produce enough sprouts to plant the intended crop, is first well manured, and then thoroughly broken by the spade or plow, generally by the spade if the field to be planted is not too large, and after being finely pulverized by a common hand-rake is ready for the seed. If the crop is to be a large one, requiring a field of from 25 to 100 mao, the bed is made ready for the seed by harrowing. The paddy (unhusked rice) in then sown broadcast, and the ground flooded with water to the depth of from 2 to 4 inches.

The transplanting beds in the vicinity of Hankow are prepared from the middle of March to the 1st of April, and the crop is planted at any time from the 15th of April to the middle or last of May. In very early seasons the preparation of the beds and the planting of the crop occurs somewhat earlier. Before the seed is sown it is placed in water and soaked until it commences to sprout, which occurs in three or four days. The plants or stalks are ready for transplanting in about thirty days from the time of sowing, and are then from 5 to 8 inches high.

MODE OF CULTURE.

The ground is broken twice by a common Chinese plow, of very rude construction and primitive pattern, drawn by a water buffalo or common Chinese ox, guided by a ring in his nose attached to a hempen or bamboo rope. The yoke is generally made of bamboo, sometimes hemp, and the

shafts or traces are of the same material. The plow is a clumsy-looking affair made of wood and shod with iron at the point. It is the mere apology for a plow, and turns up the soil only to the depth of 4 or 5 inches. An American farm-hand would not use one, and a well-to-do planter would not allow one to remain on his plantation.

Where the field to be tilled is of small dimensions, it is usually broken by the spade, hoe, or mattock. Sometimes it is the case that two or three generations of the same family own and cultivate the same tract of land. It has probably descended to them through many generations. In such cases, unless the holding is large, no outside labor is employed. None is necessary, for every member of the family, both young and old, can be profitably employed at certain seasons in the culture of rice. After the first plowing the field is inundated with water and then broken again, after which it is harrowed two or three times, or until the soil is thoroughly pulverized. The harrow is equally as rudely constructed as the plow. A very common kind is made of a heavy piece of wood from 8 to 12 inches square and from 4 to 6 feet long, and to which is attached an upright frame-work by which the driver guides it, and by pressing upon the upper cross-piece causes it to sink to sufficient depth. In this kind there is but a single row of strong wooden teeth. Those of both triangular and square shapes are in frequent use. The pattern varies according to the ingenuity of the farmer, for, as a general rule, they are home-made.

When the ground is properly prepared, and the shoots or sprouts are of sufficient growth, the transplanting of the crop begins. The plants are carefully drawn from the bed, placed in baskets and conveyed to the field. They are planted three or four shoots in the same place, and about six inches apart, and in rows from eight to fifteen inches apart. Those who do the transplanting do not leave the field, but are supplied by others who bring them the plants fresh from the bed. Two men can transplant about five mao a day. Tea is served several times during the day to the laborers in the field.

The Chinese farmer places a high value upon fertilizers, and the ground is liberally supplied with manure before it is broken, and liquid manure is frequently applied near the roots during the growing of the crop. Where the water supply is abundant the fields are flooded several times during the season, and the growing rice is kept well watered until nearly harvest time. China abounds in rivers and small streams, and has a net-work of numberless canals from which the rice-fields adjacent are irrigated. Where fields are remote from a natural water supply wells are dug and reservoirs constructed, from which the water is drawn by buckets attached to the old-fashioned well-sweep. From the time of transplanting until nearly harvest the laborers are in the field stirring the soil and removing the weeds. The work is not only laborious, but is always unpleasant on account of the odor that arises from the mixture of manure, soil, and water. It requires about two and one-half bushels of grain to sow an English acre, and the yield in this province is from eight to twelve fold, according to the fertility of the soil.

In about ninety days after transplanting the rice is ready for harvesting. It is cut with a sickle, bound into sheaves, and stacked. The sheaves or bundles are carried to the stack by coolies and stacked in a manner similar to the way in which grain is stacked in the United States when no machinery is used. Sometimes a large farmer owns a small rough cart in which he hauls the sheaves to the stacking ground. The cart is constructed of rough wood. It has shafts and solid wooden wheels, and when heavily laden is drawn by two or three bullocks driven tandem.

THRESHING AND CLEANING.

No improvement has taken place for centuries in the methods used for threshing and cleaning grain. Threshing is done either by hand with a flail, or the rice in the straw is placed on a threshing-floor and oxen driven over it.

It is then winnowed by pouring it from uplifted baskets when the wind is sufficiently strong to separate the paddy from the chaff, or by a fanning-machine, similar in construction to the wheat fan used in the United States before the introduction of improved machinery for cleaning grain.

The straw is used for making sacks and bags, thatching roofs, making rain-coats for farm laborers, and as food for cattle.

The chaff and husks are used in packing crockery ware, and for various other purposes. When mixed with bran it makes good food for cattle.

After being threshed and separated from the chaff, it is ready for the husking mill. There are several methods for taking off the husk or outer siliceous coating. In this vicinity it is generally done by hand, by placing the paddy in a wooden or stone mortar and beating it with a wooden pestle. Two hands by this mode can husk about 3 piculs per day.

Water is used as the motive power in many parts of the province, but I have never seen a water-mill either for grinding grain or husking rice in this vicinity. Laborers are numerous; they can be hired for very low wages, and machinery for expediting labor is but slightly esteemed. The work performed by horses and mules in the United States is performed by coolies in China.

The farmers sell the surplus of their crops to the local rice dealers, and all that is not required for the local markets is sent to the large cities.

All the rice raised in this province is required for home consumption; and when there is a short crop the supply falls far short of the demand, in which case it is imported from other provinces. Although this province contains a population of about 35,000,000, the rice supply would doubtless be sufficient were it not that immense tracts of fertile land bordering on the Yang-tsze river can not be devoted to rice culture on account of being annually overflowed. The floods usually come before the rice-fields are ready for the sickle. All such lands are utilized in raising crops that ripen early.

It is impossible to give exact statistics of the production or consumption of rice in this consular district, as no reliable record is kept.

I am informed that it is usual to import from other provinces about one-fifth of the quantity needed for Hupeh.

Formerly tribute rice was sent to Peking from this province, about 90,000 piculs being exacted every year; but for many years money has been forwarded in lieu of rice. The custom is of ancient origin, and it is for the use of the Imperial household, for the soldiers, and for distribution in years of famine.

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PROBABLE YIELD FOR UNIT OF LAND IN AN AVERAGE YEAR.

Good land, when the season is favorable and the crop well cultivated, will yield about 5 piculs, *i. e.*, in two crops, per mao each year, which, when husked, amounts to about 3 piculs of clean rice. Farmers near Hankow estimate the area of their rice-fields by teu, or peck, of ground, probably because it takes about a peck of seed to sow that much ground.

It requires 10 shing to make 1 teu, and 10 teu to make 1 tan. Shing is a Chinese measure about equal to 1 English pint. It formerly was made to hold one catty, and is a very common retail measure in China. I have not been able to ascertain the exact superficial area of a teu, but am of opinion that it contains about the same quantity of land as a mao. Farmers claim that what they call a teu will produce in two crops about 5 piculs of unhusked rice, and that is the estimate placed upon the product of a mao.

THE AVERAGE CONSUMPTION IN A FAMILY.

Among the poor, who eat but little besides rice, the amount daily consumed may reasonably be placed, all round, at about 1 shing, or English pint, of unhusked rice to each person. A child would eat less, an adult would eat more, while a man with a good appetite, who labors hard all day, might eat 2 shings per day. Vegetables and either pork or fish are generally eaten with rice, and then the quantity consumed is much less.

An industrious, able-bodied Chinese laborer is by no means poorly fed. He gets an abundance of rice and a liberal allowance of fish, vegetables, and pork. Especially may this be said of the coolies of Hankow.

Rice properly cooked is both a nutritious and delicious dish. When prepared by an experienced Chinese cook it is placed before you, not a pulpy mass, robbed of its nutritious and palatable qualities by being boiled in a deluge of water, but each grain is separate, distinct, and white as the fresh-fallen snow.

AVERAGE PRICE OF RICE.

The price of rice varies considerably from year to year, 2,000 cash being a low price at Hankow for 1 picul of inferior rice. In the country it can be bought at a low rate. The price is lowest just after harvest, and rises from that time until the next crop is gathered. As a general rule it appears to rate each year from 2,000 to 2,600 cash per picul for an inferior grade, and from 3,000 to 3,600 cash for the best quality of rice. A Mexican dollar is equivalent now to 1,080 cash, and the Mexican dollar, according to the esti-

mate placed upon it January 1, 1888, by the Secretary of the Treasury, is worth 75.9 cents in gold. It will thus be observed that a family of six persons, subsisting almost exclusively upon rice, can live at a cost of about 20 cents (Mexican) per day. When vegetables and fish are added the cost is not increased, for a correspondingly less amount of rice is consumed. Almost every farmer, be his holding large or small, has a little patch of ground devoted to the cultivation of vegetables for family use.

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COST OF CULTIVATION.

Two laborers can cultivate 20 mao (about 3½ acres) per year, the average yield of which would be about 100 piculs of paddy or 60 piculs of clear rice. The price of good field-hands, when furnished with food and lodging, ranges from 12,000 to 15,000 cash (equivalent to $7.50 to $10.50 in gold) per year. Day laborers receive from 60 to 80 cash and food per day.

IMPORT AND EXPORT OF RICE.

Rice is annually imported, and formerly, when vessels were laden with it alone, no tonnage dues were charged. Its exportation is prohibited by law. Rule 3 of the Chinese customs tariff, *inter alia*, says: "The export of rice and all other grain whatsoever, native or foreign, no matter where grown or whence imported, to any foreign port is prohibited."

It is an important factor, however, in the internal commerce of the Empire. Immense quantities of it are shipped to this city from all portions of Hupeh and adjoining provinces.—HANKOW, CHINA, *October 1, 1888.*

B. J. FRANKLIN,
Consul.

PHOSPHATE MINES AT REDONDA.

The island of Redonda, where the phosphate mines in question are found, is situated about midway between the islands of Montserrat and Nevis, and about 25 miles to the southwest of Antigua, in latitude 26° 6′ and longitude 61° 35′. It is a dependency of Antigua, and one of the numerous islands belonging to the Leeward Islands group, and under the jurisdiction of the British Government. Its discovery dates from the second voyage of Columbus, in 1493. In Irving's Life of Columbus the following words are found:

> Weighing anchor on the 10th of November, Columbus steered toward the northwest, along this beautiful archipelago, giving names to the islands as they came to view, such as Montserrat, Santa Maria la Redonda, Santa Maria la Antigua, and San Martin. Various other islands, lofty and well-wooded, appeared to the north, southwest, and southeast, but he forbore to visit them.

Although Columbus, in his enthusiasm, gave the island the high-sounding name of Santa Maria la Redonda, after some cathedral, probably, geographers reduced it considerably by calling it Redonda; but in this matter-of-fact generation it is known in its own neighborhood as the "Rock."

A full survey of the island has never been attempted. It is estimated to be 1 mile in length, a third of a mile in width, and about 1,000 feet in height. It stretches north and south, and presents a very barren, bold, rocky, rugged appearance. The eastern side is somewhat rounded, and more deliberate in reaching the sea; but the western side, with the exception of a steep ravine, is a sheer precipice of nearly 1,000 feet in the highest part. Its shores are rock bound, and offer but one desirable place for landing, at the southwest part, near the foot of the ravine alluded to. The Rock is encompassed by bold water, and a stone can be easily cast from the shore into 20 fathoms of water. The mines are situated on both the northerly and southerly ends of the island.

Phosphate alumine was discovered at Redonda about 1865, by Dr. Field and Henry A. Arrindell, both Americans; the latter a naturalized citizen, and later a consular officer at Antigua. A license to mine the phosphate was obtained from the British Government by these parties in October, 1865. The license was granted for twenty-one years at the rate of £20 per annum. About 10,000 tons were mined and exported to the United States in a short period; but the speculation proved a ruinous one for both parties and operations were soon discontinued. The license was surrendered in December, 1882, and a new one granted to the present company (the Redonda Phosphate Company) in January, 1883. It extends twenty-one years, and the terms are, that a royalty be paid at the rate of 6 pence per ton on all phosphates exported, and not less than 100 pounds to be paid for each half year. It may be surrendered at seven or fourteen years on giving six months' notice to the governor of Antigua.

The Redonda Phosphate Company is an individual one, and is in the hands of Messrs. John Thompson, William Doly, and Charles Humphrey, who reside in Scotland. No shares have been issued; and no amount of capital announced. The shipments of phosphate by the present company began in the latter part of 1885, and have amounted in all to about 21,000 tons, valued at $117,810, free on board. Of this quantity 4,850 tons have been shipped to the United States and were invoiced at $27,270, free on board, at the rate of $5.61 per ton; the remainder was shipped to the United Kingdom. There are 2,000 tons of the rock on hand ready for exportation at this date.

On account of the mines being situated on the top of this precipitous island, a system of wire cables and iron buckets has been instituted in order to lessen the difficulty of placing the phosphate rock aboard ship.

The system at the south of the island connects the wharf and landing with the mines and buildings above. It extends up the ravine before referred to, and is 700 feet in length, with a gradient of 60 degrees. The system consists of two 1½-inch steel-wire cables, stayed above and below. Suspended from these are two large iron buckets, connecting with blocks, which run on the cables. The buckets are connected by another wire cable, which runs in a large wheel at the top. Water is used for the ballasting, and

is kept in a cistern at the top, holding 800 gallons, and which is pumped from the sea below by a steam-engine stationed at the water's edge. The phosphate is sent down with a bucket and dumped into a box, which is swung by a crane and dumped into a lighter and put aboard ship. The operation is simple and most expeditious, and a vessel is rarely delayed in taking in her freight.

The system at the north of the island, where most of the mining is done, is 1,140 feet in length, and has, it seemed to me, a steeper gradient than at the south. The foot of this system is stayed into the rock in the bottom of the sea, in two fathoms of water, and some little distance from shore. The phosphate is dumped from the bucket into the lighter direct.

Freights to the United States in sailing vessels have been obtained at $2.80 per ton. I could not obtain the amount paid for transportation to Great Britain.

The number of mines varies from time to time. When I visited the place in November all operations had been stopped and the miners sent home for a holiday. In the busy season, when shipping is active, about ninety hands are employed, of which fifty are probably miners proper. The labor is obtained from the islands of Montserrat and St. Martins, and is negro labor entirely. From $6 to $7 per month is paid them, and they are found both food and lodging. The staff consists of a superintendent, manager, and book-keeper.

On the southern end of the island, and at a height of about 600 feet above the sea, the company has erected a number of buildings, consisting of a large house for the staff, shops, store-houses, boarding-houses, and others. These buildings are mostly of iron, and every precaution has been taken to save the rain-fall by a system of pipes, tanks, and cisterns in connection with them. The company is now in possession of a stock of rain-water amounting to about 60,000 gallons.

The mining is confined to the surface, and the good rock is found in veins. The drilling is done entirely by hand-drills, and the rackarock explosive is preferred to all others. An apparatus is kept on hand to test the amount of the phosphoric acid contained in the rock, as the rock sold is guarantied to contain not less than 30 per cent. of acid. Some of the rock contains 35 per cent. phosphoric acid. No data could be supplied to determine the chemical constituents of the rock in question. It is known to contain a large percentage of iron, however. The supply of phosphate is reckoned by experts to be inexhaustible. — ANTIGUA, *December 22, 1888.*

CHESTER E. JACKSON,
Consul.

RAW MATERIALS ADMITTED FREE OF DUTY INTO AUSTRIA-HUNGARY.

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I transmit herewith a list of raw materials and other products which are admitted free of duty under the tariff of Austria-Hungary in force since June, 1887. In connection with this list of articles free of duty I desire to call attention to the several manufactories in operation in this Empire, in which the raw materials are employed in producing the several manufactures for home as well as for foreign consumption.

Although the industrial and manufacturing classes of this country are divided in their opinion as to the effect of a protective tariff upon manufactures on the industries of the Empire, there seems to be but little if any difference of opinion as to the desirability and expediency of abolishing all duties upon raw materials. The Government, as well as the majority of Parliament, are certainly in favor of remitting all raw and auxiliary materials free of duty and were undoubtedly influenced by the practical experience of a long series of years when they adopted the free-list of the tariff of 1887.

It seems, furthermore, that the cheapness of raw material, caused by its free importation, alone enables the Austrian manufacturer to compete successfully with the American exporter in the Southern and Central American markets, and to sell his wares at trade centers next door to the American factories, in spite of the disadvantage of transportation half way around the globe.

What other explanation can be found, for instance, for the exportation of Austrian furniture to Rio de Janeiro, when we know that the labor bestowed on furniture is at least as cheap in the United States as in Austria, because the American manufacturer employs machinery, while the Austrian furniture is made by hand? On comparing the tariff of the United States with that of Austria-Hungary, the true cause of this successful Austrian competition will at once become apparent. The former imposes a high duty upon cabinet woods, plate glass, marble, curled horse-hair, etc., all of which articles are free of duty under the Austrian tariff.

LIST OF RAW MATERIALS AND PRODUCTS ADMITTED FREE OF DUTY UNDER THE TARIFF OF AUSTRIA-HUNGARY OF 1887.

Table grapes, pine-apples.
Fresh fruit and vegetables.
Lemon juice.
Dried herbs.
Fillies running with mares.
Live game.
Deer, chamois, and wild boar, alive or dead.
Milk.
Beehives with wax or honey or live bees.
Hides and skins, green or dried, salted or limed, but not further prepared.
Hair of all kinds, raw or prepared, colored or curled, etc.
Hog bristles.
Bed feathers and feather quilts.
Ornamented feathers not prepared.
Firewood, willows, tan, and tan cakes.
Cabinet wood, staves.
Sawed wood, European and foreign, except veneers.
Charcoal, turf, hard coal, and all artificial fuel composed of these materials.

Cane, split and unsplit.
Canes unfinished.
Cocoa-nuts and shells.
Horns, hoof, and claws of all kinds.
Tortoise shell.
Meerschaum, mother of pearl, and other muscle shells.
Whalebone, unfinished.
Coral, unfinished, also bored, but not cleaned or polished.
Stones, hewed or sawed (marble, etc.).
Ores, also mechanically separated or dressed.
Coloring woods in blocks.
Catechu (Japanese earth), kino, lac dye.
Bark, roots, leaves, blossoms, gall-nuts, etc., also cut, ground, or crushed for coloring or tanning purposes.
Cotton, raw, bleached, colored, or ground, also cotton waste.
Flax, hemp, jute, and other wearing material not specially mentioned, raw, broken, or bleached.
Cocoons, unspun.
Floret (flirt) silk, also twisted, raw, or bleached.
Paper pulp, bleached or unbleached; manufactured out of rags or wood-fiber. Caoutchouc and gutta-percha raw or purified.
Common basket work, as packing, or wash-baskets, if not colored, stained, varnished, or polished.
Common roof-tiles, and draining and other pipes, if unglazed.
Tin, crude, also old, broken, and as waste; copper, nickel, metal; Tornback and other metals and metal mixtures, if crude; old, broken, or as waste copper, and metal rollers, and plates, engraved or unengraved, if for use of inland textile factories.
Gold, silver, platina, and precious metals, crude; also old and broken, and as waste.
Coins, medals composed of precious metals.
Scientific instruments, astronomical, mathematical, surgical, etc., etc., without reference to material of component parts.
Notions and fancy goods.

Chemicals.

Borax, crude, acid of borax, Chili saltpeter, crude; sulphur in pieces and sticks, or ground, sulphur blossom, antimony; tartar, crude and refined; tartar acid, lime, phosphorus and phosphoric acid, fertilizing acids, waste of manufactories for fertilizing purposes.

Pictures.

Steel and copper engravings, wood cuts, photographs, chromos on paper or canvas, etc.
Paintings on wood, canvas, metal plates or stone.
Statues, bas reliefs and part relief of stone of at least five kilogr. weight; also, statues, busts, and figures of animals, of metal or wood, of at least life size.
All fertilizers, natural and artificial, of every kind and description. All waste of all kinds of manufacture, as, for instance, bran, wine yeast, rags, paper cuttings, waste rubber, glass, etc.
The raw materials, chemicals, etc., enumerated in the foregoing free-list are used in the numerous industrial establishments of this Empire, which manufacture the following products:
Surgical and scientific instruments of all descriptions.
Bronze and metal wares, principally ornamental.
Furniture, wood and upholstered.
Machines, locomotives, etc.
Steam and tramway cars.
Carriages and wagons.
Wooden ware.
Stone and earthen ware.
Porcelain and decorated China.
Glass-ware of all descriptions.
Woolen and cotton textiles.
Leather and rubber goods.
Hair brushes.
Feather goods and ornamental feathers.
Chemicals.
Pearl buttons, common and ornamental.
Hardware — scythes.
Fire arms and ammunition.
Paper.

For the purpose of comparison with the American tariff, I beg leave to transcribe herewith the rates of duty on veneers under the tariff of Austria-Hungary, viz:

(*a*) Plain veneers, not inlaid, unfinished, 150 florins = 60 cents on 100 kilograms = 221½ pounds.

(*b*) Colored, stained, or polished, 300 florins = $1.20 on 100 kilograms = 221½ pounds.

Inlaid veneers, 1,200 florins = $5.00 on 100 kilograms = 221½ pounds.

VIENNA, *January 8, 1889.*

EDMUND JUSSEN,
Consul-General.

EXPORTS OF GRAIN FROM CANADA.

GOVERNMENT HOUSE,
Ottawa, Saturday, January 12, 1889.

His Excellency in council, in pursuance of the powers vested in him by subsection (*f*) of section 245 of chapter 32 of the Revised Statutes of Canada, entitled "An act respecting the customs," has been pleased to order, and it is hereby ordered, that when wheat or grain grown in Canada is taken to the United States to be ground and the produce thereof in flour or meal returned to Canada, such produce may be returned free of customs duty, provided the owner thereof resides near the frontier and more than five miles from any Canadian grist-mill at which such wheat or grain could be ground, and that he observes and complies with the following rules:

(1) He shall report to the nearest customs officer the exact quantity of wheat or grain which he is taking out; and such officer shall enter in a book to be kept for that purpose the name of the owner, the date of the transaction, the quantity in bushels and fractions of bushels so to be taken out, and the name and location of the mill and the proprietor thereof where the grinding is to be performed.

(2) He shall report inwards in like manner the exact quantity of flour or meal and other product of said wheat or grain when he returns the same to Canada, and make a solemn declaration to the effect that such flour or meal and other product is the actual produce of the wheat or grain taken from Canada, and no other.

(3) The officer receiving such reports shall verify the truth thereof to the best of his ability and enter the particulars in the aforesaid book, and shall require the owner to append his signature to such entries in attestation of the correctness of the same.

(4) If it be found that any additional quantity of product has been returned more than that which the quantity of wheat or grain should properly produce, or if it be ascertained that any change has been made therein by the substitution in whole or in part of foreign wheat or grain, or the product thereof, for the Canadian wheat or grain represented to have been taken out to be so ground, or if any other fraudulent act has been done in reference thereto, then the product, or the alleged product, so returned shall be seized and forfeited.

JOHN J. McGEE,
Clerk, Privy Council.

ABOLITION OF EXPORT DUTIES ON CERTAIN ARTICLES FROM JAPAN.

IMPERIAL ORDINANCE NO. 81.

The following articles may be exported free of export duty on and after January 1, 1889:

Drugs (camphor excepted), prepared medicines, dye-stuffs, colors, glue, isinglass, candles, Japanese ink and similar articles, ink pads, washing powder, soap, tooth-powder and blacking, medical and scientific instruments, perfumery and articles for the toilet.

Woven goods, worsted goods, plaited goods, thread for embroidery, braiding and netting, fishing lines, catgut, cords, and rope.

Waste paper.

Timber, blocks and boards (manufactured), metal wires, nails, tin-foil and sheet metal, gems, stamp-blocks, glasses, amber, mica, asbestos, stones, earth, sand, and deposits of thermal springs.

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Ashes, cement, coke, charcoal-balls, lamp-black, charcoal, and fuel.

Wild cocoons, wild cocoon silk, cotton, flax, bark, roots, ears of grain, grain stalks, flowers, and gum of plants or trees, *kechima*, bamboo wares, bamboo bark, palm fiber, and leaves of sago palm.

Persimmon juice, bird-lime, bran, moxa, oakum, and powdered gall-nuts.

Cereals, vegetables, fruits, garden and potted trees, saplings, and seeds.

Foods made of grain, vegetables, fruits, stems, roots, etc., and canned and bottled foods.

Mushrooms (*Shiitake* excepted).

Confectionery, spirits, vinegar, soy, oils, prepared spices, and oil-cake.

Beasts, birds, insects, eggs, meats, fat, cheese, butter, and honey.

Bone, horns, feathers, fur, shells, tendons, teeth, hoofs, fish roe, whale-bone, coral, pearls, live fish, *Katsu-obushi* (dried bonito).

Sea-weed (cut *kombu*, *kanten* jelly, weed used for making *tokoroten* excepted).

NOTE.—In the event of any re-imposition of duty, the fact shall be announced six months in advance.

RICE AND SUGAR IN NEW CALEDONIA.

RICE.

The climate and large tracts of land are found most suitable for the cultivation of rice, but up to the present not more than 200 tons yearly have been produced, and this is found to be of a superior quality, and sells freely in our market at $64 per ton. I am informed by Mr. Laurie, one of the largest cultivators here, that mountain red rice and swamp rice grow with facility, and that it is at present only grown on the east coast. The locusts have been the great enemy of this industry. Our consumption amounts to about 800 tons per annum, which, with the exception of newly-grown rice, comes from China and India via Sydney, the demand being principally in ration rice for natives and malabars. It sells here on an average of $60 per ton, and is preferred in small mats or bags of 56 pounds. The Government annually contracts for a minimum of 55 tons and a maximum of 80 tons.

SUGAR.

We have splendid sugar lands, and some fifteen years ago large sums were spent over this industry, but it was never successful, and to-day several ruined mills are to be met with. The Government is now the only producer and sells the annual product of about 70 tons in the open market. The last sales realized $64 per ton, the sugar being a light yellow. The annual demand is between 450 and 500 tons, and is nearly supplied from Queensland and Fiji, but some Maritius sugar reaches us, mostly of a very inferior quality. The white sugar, loaf or cut, comes from Europe, and American machine-cut sugar is common in our market.

The following are the prices: Fiji and Queensland light yellow, from $80 to $90 per ton; refined white, in mats, $140 per ton; foreign machine-cut and loaf sugar, $180 per ton.

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In addition to the quantity sold by the Government, they produce sufficient for their own consumption, meaning convict rations, etc.—NOUMÉA, *October 8, 1888.*

WILLIAM E. MORGAN,
Vice-Commercial Agent.

THE SUGAR BOUNTIES CONVENTION.

[From the London Economist.]

Two Blue Books on this subject have just been issued in continuation of earlier publications—Commercial Nos. 13 and 15, 1888. The former contains, in a Parliamentary form, the records of the conferences held in 1888, which appeared in the Gazette last September. The latter contains correspondence on the negotiations in connection with these conferences. This correspondence shows that the powers evinced much indifference, and that Austria, Belgium, France, and Holland, more especially, made many difficulties. It does not appear that any of the outstanding countries, Brazil and Egypt being those of chief importance, have as yet acceded to the convention of August 31, 1888, nor is any light thrown on the present disposition of France, or on the probable action of Austria and Belgium, which countries signed with specified reservations. The position of Canada, and possibly of some other colonies, is doubtful.

The next stage in this question is the meeting of a special commission in the spring to examine and report as to whether the legislation of the states, parties to the convention, is sufficient to give effect to its provisions. It is somewhat strange that in view of this engagement, which raises the point of the prohibitive or penal clause, Mr. W. H. Smith put aside any discussion of the convention during the recent session of Parliament. It is evident that the signatory powers attach chief importance to the adoption of that engagement by this country, and it is hardly likely that they will take much trouble to legislate until they possess some indication whether or not the policy of the convention is really adopted in this country. But even if its policy obtains the assent of the different legislatures to be consulted, it is doubtful whether, considering the jealousies of several of the powers concerned, and the indifference of others, a general agreement will be arrived at with respect to the regulations under which the convention is to be put in force. The several powers criticise freely the administrative systems of their neighbors, and seek to compel the adoption of their own by the other countries. Past discussions do not encourage any confident expectations that a general agreement will be come to, and if one or more of the signatory powers break away—a result not at all unlikely when the special commission enters upon practical details—the whole convention will fall.

But whatever may be the fate of the convention, and as our readers know we are not at all enamored of it, it must be admitted that the conduct of the negotiations has been creditable to our foreign office and delegates. Each successive Blue Book shows good management of the case in hand. The services of the delegates have been recognized by the Government in a special letter of thanks, and as good service is deserving of reward they will doubtless receive some more tangible form of acknowledgment. The West India committee, as well as other bodies connected with British sugar industries, express in letters to the foreign office very proper appreciation of the exertions used on their behalf, and various commercial associations and trades councils have likewise recorded resolutions of thanks.

AMERICAN CITIZENS IN CHINA.

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As it may be a matter of interest to know the number and occupation of our citizens resident in this Empire, I inclose a return thereof, which I have compiled from reports submitted to me from our several consuls. With the exception of Shanghai the classification is complete as to occupation.

Return of American citizens resident in China, compiled from consular reports, 1888.

Consular jurisdiction.	Number.	Adults.		Children.		Occupation.			
		Males.	Females.	Males.	Females.	Diplomatic and consular.	Missionaries.	Mining engineers.	Chemists.
Shanghai	400	Not classified.				5	.....	.....	.....
Ningpo	44	22	11	7	4	2	35	.....	.....
Foo-Chow	51	18	20	6	7	2	42	.....	.....
Amoy	41	Not classified.				8	20	.....	.....
Canton	75	do				3	65	.....	.....
Chinkiang	77	do				2	69	.....	.....
Hankow	49	do				2	44	.....	.....
Chefoo	87	31	32	13	11	.....	79	.....	.....
Tien-Tsin	186	63	57	Not classified.		4	152	6	1
Newchwang	12	6	2	.....	4	.....	.....	.....	.....
Total	1,022	140	122	26	26	28	506	6	1

Consular jurisdiction.	Occupation.							Remarks.
	Mercantile.	Machinists.	Miners.	Chinese customs service.	Professors.	Sea-faring.	Unclassified.	
Shanghai	.....	.....	.....	.....	.....	50	345*	
Ningpo	2	.....	.....	5	.....	.....	.....	Including Wenchow.
Foo-Chow	4	.....	.....	3	.....	.....	.....	
Amoy	9	.....	.....	4	.....	.....	.....	Including Formosa.
Canton	1	.....	.....	6	.....	.....	.....	Including Swatow, Kiung-Chow, and Pakhoi.
Chinkiang	3	.....	.....	3	.....	.....	.....	Including Wuhu and Nankin.
Hankow	2	.....	.....	1	.....	.....	.....	Including Kinkiang.
Chefoo	.....	.....	7	1	.....	.....	.....	
Tien-Tsin	2	3	.....	5	2	11	.....	Including Peking.
Newchwang	.....	.....	.....	.....	.....	12	.....	
Total	23	3	7	28	2	73	345	

* As registration is not compulsory, it is impossible to classify all occupations.

PEKING, *November 22, 1888.*

CHARLES DENBY.

TOBAGO.

I have to report that the annexation of Tobago to Trinidad takes effect January 1, 1889. This small, fertile, and healthy island is situated 20 miles northeast of Trinidad, in latitude 11° 9′ N. and longitude 60° 12′ W. It has an area of 73,313 acres, only 10,000 of which are under cultivation.

The population in 1881 was 18,051, engaged in the cultivation of sugar, cocoa, and coffee.

In 1885 the exports were £38,437; imports, £30,758; revenue, £10,826; expenditures, £12,031.

There are two towns, Scarborough (the capital) and Plymouth, each having a good harbor. At Scarborough the Royal Mail steamers for Southampton await their time to sail bi-monthly from Trinidad.

Tobago has the honor of having been inhabited by a celebrated shipwrecked mariner, as described by the genius of Defoe; and many travelers visit the island out of curiosity to see the famous Crusoe Cave, that is said to have been the abode of him and his tamed cannibal, "Friday."—TRINIDAD, B. W. I., *December 29, 1888.*

MOSES H. SAWYER,
Consul.

STATE OF TRADE IN SOUTHERN BRAZIL.

The Senate of the Empire, on the 6th instant, approved of an addition to an appropriation budget, which caused much enthusiasm among the people of the province, and especially in the city of Rio Grande do Sul. In a previous report, which I had the honor to transmit to the Department of State, on the subject of the improvement of the bar of Rio Grande do Sul, I gave the main terms embraced in the tenders of the Government for propositions to improve the bar. The addition approved of by the Senate is to the effect that if no propositions are received within the time which is embraced in the tenders, then the Government may make the improvement on its own account.

This is regarded as the first step, even by gentlemen of the bar commission, taken by the Government looking to a removal, or rather improvement, of the bar, as certainly private capital will not seek an investment of that kind under the terms of the Government's tenders. The action of the Senate, if not due to, is responsive to the petitions and representations sent to the Princess Regent from time to time by the different commercial associations of this province, calling attention to the decline of trade in and around the large cities of the eastern part for want of proper outlet to the sea, which could only be secured by an improvement of the bar, and finally charging the Imperial Government with a want of interest in the welfare of the province and gross neglect upon the part of its officials.

Should the Government undertake the work at once, after the expiration of the extended time for tenders (February 6, 1889), it will require six hun-

dred days to complete it, as observations made by the bar commission show that there are only about sixty days on an average in each year when the work can be carried forward on and outside the bar. The work, therefore, on that basis, would extend through ten years of time. There is no doubt, however, that the channel would be much improved in a short time after operations began and shipping in Rio Grande much increased.

By the decree of emancipation of May 13th last, there were freed 723,419 registered slaves in Brazil, valued at $242,612,608, of which only 8,422, valued at $2,973,681, belonged to the province of São Pedro do Rio Grande do Sul. The meat consumed by these slaves was almost entirely exported from this province—dried beef, called *xarque*, prepared at the large *saladeros*, or killing establishments, by stripping the flesh in large sheets from the carcass of the slaughtered animal and then hanging it on wooden frames to cure. As the negro has been rationed with this kind of meat almost all his days, it is now a question, since his freedom, if there will be as great a demand for it as heretofore; if not, this year will show the fact, as the killing season is just beginning.

In the event that the demand for *xarque* should materially decrease, cattle breeders must look for other means to dispose of their cattle, or of preparing their meat for market.

If the bar was opened so as to admit steamers drawing from 16 to 20 feet of water, there is no doubt but a large and profitable trade in frozen meat could be established here; but as all the refrigerator vessels must be large so as to make paying voyages, such a business, under the present state of the bar, is impossible. Cattle breeding is the chief industry of the province; at least 1,000,000 are killed annually, and should the demand and price of dried beef decline it would be a serious blow to the people.

The amount of all dried beef exported from this province last year, 1887, was 20,108,780 kilograms, being considerably less in weight than the exports of some previous years, but exceeding in value, reaching the sum of $3,472,537. There is a general complaint of the scarcity of money, and the people are slow to accept the prices offered for cattle, hides, corn, mandioca, and for other products, as they have declined somewhat in two years, but not so much, as a matter of fact, as the people, who are unused to the effect of the fluctuations of exchange upon a paper currency, imagine. In 1886 dry hides were worth here 750 reis per kilogram; horse-hair, 900 reis per kilogram; new hides, 570 reis per kilogram; and hair, 660 reis per kilogram, an apparent decline in two years of 24 per cent. in the price of hides and 26 per cent. in the price of hair. In estimating the above rate of decline in prices, I simply made a comparison of the price received in paper money without considering the rate of premium in gold at the time.

In 1886 the correct sight rate of exchange on London in this city was 24¼ pence to the milreis, or about 44½ cents; now the sight rate is 26½ pence to the milreis, or 53 cents, and if the price of goods would decrease as the gold value of the paper currency increases there would be no cause for

complaint, but instead, nowithstanding the steady decline in the premium rate of gold for several years, prices remain much the same. The Government has made some deductions in rates of tariff, not because gold was becoming cheaper, but to render smuggling a less profitable business in the province.

When exchange was 22¼ pence on London, the American gold dollar was worth here in paper 2,220 reis, while under the present sight rate of 26½ pence it is only worth 1,864 reis in paper; in the first instance gold bears a premium of 21.3 per cent. and in the second 1.9 per cent., being really a decline in the value of gold of 19.4. It is rumored that gold is now being purchased here and in Europe with a view to speculation or future business. When the banks sell their bills they are almost always bought with paper currency, and the ninety-day rate in London being 27 pence (54 cents), gold and paper are equal in value. A number of bills are probably bought in London with a view of holding the gold there and remitting it back to Brazil when paper is at a discount.

This extensive purchase of bills, taking the benefit of the high rate of exchange, has no doubt withdrawn much money from circulation in this country, and should exchange remain firm for a few months much of it will be remitted back; but for the present it has placed large sums of money in the banks, where it will probably remain for a while, unless it can be sent north and used profitably in discounting bills drawn against shipments of coffee and sugar to the United States and England.

The commercial possibilities of that section of this province along the west shore of Lagou dos Catos, in which are situated the three largest and most important cities—Rio Grande, Pelotas, and Porto Alegre—are very great under favorable conditions, such as an improvement of the bar, but under present conditions it is impossible to say. Pelotas, a thriving city of 24,000 inhabitants according to a recent census, is the chief point in the province for the *saladeros*. Of the total value of all the different exports of this province which exceeded $5,000 in value, the amount of which was $9,766,653 in 1887, the value of $5,053,486 was exported from Pelotas, being the greatest in value since 1879, when it was only slightly exceeded, gold being at a premium of 17.4 per cent. Most of this value was for animal products (dried beef, hides, nerves, glue stock, and curled hair), as there were 302,288 head of cattle slaughtered in the *saladeros* of Pelotas for export that year, being about the average number per annum for ten years past.

This place has good advantages for shipping. A railroad, the Rio Grande and Bayé, runs west about 150 miles; besides, it has communication with the sea by the Lagai dos Patos and all the cities along it, being distant 30 miles from Rio Grande and about 170 from Porto Alegre by sailing route.

Most of the vessels which cross the bar of Rio Grande go in as far as Pelotas, and many as far as Porto Alegre, after discharging part of their cargo in Rio Grande, those ports being accessible for vessels drawing 8 or 9 feet of water when the wind is southeast and favorable.

At the head of the lake, or rather just above the mouth of the River Guhyba, is Porto Alegre, the capital of the province, containing 44,000 inhabitants. This river is formed by the confluence of the rivers Jacuhy, Cahy, Sinos, and Gravatahy, drawing, with their tributaries, at least one-half of the great hydrographical basin which falls into Lakes Patos and Mirim. The city is situated chiefly on an elevation on the east bank of the river, overlooking the low, flat country to the west for a considerable distance. The country below and back of the city is rather hilly, though not mountainous. The hills are bare of timber and produce grass, but the soil is said to be unproductive for cereals. There is a strange feature about these hills that no doubt would prove an interesting subject of study for a geologist. Around their tops, and far down their sides in some instances, are large, round boulders of hard, gray rock, similar to granite, lying on the face of the earth.

The "pedras bremeas," or white rocks, is a column composed of these same rocks, about 50 feet in height, which rises above the water in the middle of the lake, about 5 miles below the city. The Government has a powder deposit in this small rocky place which is a very curious as well as beautiful sight.

In the city of Porto Alegre there are 14,000 Germans and of German descent, and 2,500 Italians. This place is regularly built, well paved, kept clean, and has street-car lines, telephones, gas, and electric lights. The valleys which lie along the river near the city when uncultivated are covered with a dense growth of small brush and trees, also bamboo, resembling very much the forests along the River Amazon. The country around the city produces an abundance of oranges and lemons, and the weather becomes very warm in summer, because it is inland, low down on the river, and has no sea breeze. The city is in latitude 30° 1′ 57″ S., and has the advantage of lake outlet to the sea via Pelotas and Rio Grande, is the terminus of a railroad penetrating the center of a large German colony at New Hamburgh, 26 miles distant. The steamers of eleven different lines, of from 10 to 80 tons burden, leave its docks regularly for all accessible points up the different rivers, putting into the Guahgaba, one of which makes regular connection at Tacnary, on the Tacnary River, about 40 miles northwest of Porto Alegre, with the trains on what is called the Porto Alegre and Uruguayana Railroad.

While there are a number *saladeros* on those rivers, yet it is safe to say that the chief of the exports from Porto Alegre are products of agriculture and wine. Among the products of agriculture are notably black beans, called *frijao*, farinha de mandioca, corn, corn meal, and potatoes. Farinha de mandioca is largely shipped from Porto Alegre. The word farinha means flour in Portuguese, and the farinha de mandioca of commerce is a coarse meal made from the mandioca root, which is extensively used throughout the whole country as an article of food.

Of the articles exported from Porto Alegre which exceeded in value $5,000 in 1887, the value of $2,363,990 was credited to the exports of that

city, which has control of the surplus produced by the large Italian colonies of Antonio Prache, Caixsas, Alfredo Chaves, Conde d' En, Dona Isabel, Silvei ra Marti's, and some other small ones, containing 48,665 persons. There are, however, over 70,000 Italians in this province, and they are generally very industrious, coming from the north of Italy, while a few who come from the southern part generally leave the agricultural colonies and engage in selling lottery tickets and blacking boots or some other equally dignified occupation.

These colonies had last year in cultivation 124,408 hectares, equal to 308,658 acres; estimated value of the products exported, $156,996. This, of course, does not include what was sold in the local markets. Their location is a great disadvantage to them, being northwest of Porto Alegre; up those rivers at least twelve hours' journey by steamer, and some of them as much as 75 miles from navigable waters, with almost impassable roads over which they are obliged to cart the products of the hard labor to market, where they realize next to nothing for it. For instance, a sack of beans, which is worth $1.30 in market, costs $1 in freight to get it there, leaving these poor people with only 30 cents for their labor of producing the beans and carting it 75 miles over bad roads.

At such disadvantages have the immigration commissioners of the Government placed these people, it is almost impossible for them to gain much money. In a recent conversation in the city of Porto Alegre in regard to these colonies with Mario Compagnoni Marefoschi, lately appointed Italian consul for this province, he stated that he had little hope for the future of the principal Italian colonies here unless the Government provided them with proper roads at least, and if the Italians properly understood the advantages afforded immigrants by the Argentine Republic over those of Brazil, immigration from Italy here would cease.

Whether immigration was assisted by the Government to supplant the slave in the agricultural development of the country, who must be emancipated by the very force and pressure of public opinion in a short time, or from a desire to increase the resources and commerce of the country, it is certain that while the slave was obliged to toil for food and clothes, the Italian especially insists on having money for his labor, and when he fails to realize it becomes dissatisfied with his situation. The German Government discourages any further emigration to this country, although the German colonies are as a rule much more favorably treated.

In the year 1887 there entered the province as immigrants 5,328 persons, of which 4,353 were Italians, 537 Germans, 288 Portuguese, 35 French, 52 Austrians, and 31 Spanish, and during this year 486 foreigners became naturalized citizens of Brazil, of which 213 were German, 126 Italian, 60 Portuguese, 16 Austrians, 1 French, 9 Uruguayans, 7 Spanish, 6 Danes, 6 Swiss, 6 Dutch, 6 Paraguayans, and 1 Argentine.

The amount of imports into this province, as I have stated in a previous report, is not to be had within any degree of certainty, the origin of goods in many instances is no longer kept up, and in many instances goods for-

warded from one city to another are termed exports, foreign goods in transit, etc. The German houses, which are most numerous in the eastern part of the province, are decidedly in the lead with German goods, the chief merit of which is cheapness, at the expense of quality.

There is a complaint among some merchants of falsification of trade-marks of certain well-known and popular articles of foreign manufacture. The trade-mark Indian head of a certain brand of American brown cotton sheeting is extensively imitated. I am informed by a thoroughly reliable English merchant in this city that a certain dealer in Pelotas has a stencil plate the exact imitation of the genuine Indian head, with which he puts the mark on any grade of brown cotton he sees proper, or that suits the purpose of his trade, no difference where the cotton was manufactured. This is not only done in Pelotas but elsewhere in the province.

When I was in Porto Alegre I came across a small article of American manufacture, which is wide and favorably known, not only in the United States, but in foreign markets, especially here, called Mason's shoe blacking. This article is so closely imitated by the label on the lid of the box as to amount to a complete deception, unless a buyer was very well acquainted with the genuine article. The wording on the original genuine label is in Spanish, except the name Jas. S. Mason on bottom line, and a fac-simile of Mason's signature underneath it. On the other label the same style of letter is used and the same words of the Spanish language employed for outside line, when the French language is resorted to in the line under the illustration on the label in order to get the word *maison*, and only differs from the word Mason in the addition of one letter. Underneath this is the name of the importing house, with the word *and* and an abbreviation for Company again in the Spanish language. It is a skillful play on language, and the use of part in French subserves their purpose well. If the Spanish language had been employed the word *maison*, or house, would have been *casa*. The use of the illustration, which constitutes the trade-mark to a great extent, and the employment of the word *maison* instead of the Spanish word *casa*, shows the intention to deceive. They may have evaded the penalties of the Brazilian law, providing for the registration of trade-marks and punishment for their imitation, by substituting New York for Philadelphia as the place of manufacture. I am not prepared to give an opinion on this point, as I have not seen the full text of the decree of December 31, 1887, approving a law of October 4, same year, relative to the registration of trade-marks. The genuine box from which label was taken weighed 87 grammes and the imitation 66 grammes, yet I find the same price for each in Porto Alegre—the equivalent of 8 cents.

The chief of American goods sold in Porto Alegre are kerosene oil, flour, Collins' axes, and some stoves for cooking purposes. It is provided by law that each city may levy a tax equal to $250 on each commercial traveler who sells goods by sample. This is not only an unwise and obstructive policy for these people to follow, but results in a complete evasion of the law by the salesman sending his samples from city to city addressed to some merchant,

who takes charge of them, has them opened in his place of business, and for the time the commercial traveler is supposed to be in the employ of the merchant as a clerk. English, German, and Portuguese houses do the business very largely of the province, and, of course, push the goods made in their respective countries to the very best of their ability.

Only such American goods are sold here as are known to be superior to all others, because there are no merchants here interested to any great extent in American fabrics. There are American goods that could be sold here, but so long as our manufacturers are content to allow others to occupy the field, we can not expect a trade to be established for their goods without effort.

This country, we might say, is in the infancy of its development, and in a few years, filling up from here to Patagonia with the swarming thousands from Europe, opening up the resources of the country, it will prove of great value to those who have established a trade.—RIO GRANDE DO SUL, *November 14, 1868.*

LEBBEUS G. BENNINGTON,
Consul.

MUNICIPAL EXPOSITION, RIO GRANDE DO SUL.

On Sunday, the 30th day of September last, an exposition—art and industrial—opened in Rio Grande do Sul under the direction and management of its council, which was largely attended by the residents of the city and those of the surrounding country, closing on the 4th day of November.

The principal condition of exhibition was that the articles sought to be exhibited should be produced or manufactured in the municipal district. This condition, of course, operated as a limitation on the number, which was about 500. In the department devoted to art there were many things very worthy of notice, among them fancy needlework of all kinds, pictures in ink, crayon, and oil, photographs, and carvings in wood, all of which bore evidences of much skill in their respective arts, being equal in appearance and points of excellence to exhibits of similar kinds in other parts of the world.

In the industrial departments the exhibits were few, but none the less interesting, giving some idea of the extent and capacity of those things that go to make up a city or a country. One thing of particular notice was national wine, made from what is known here as *ova americano*, which is manufactured in considerable quantities, especially on the Ilha dos Marinheiros, an island lying in front of this city, about 1¾ miles from the anchorage in Lagon dos Patos, having a superficial area of about 7,000 acres, of which, however, one-half or the whole interior is a barren, sandy waste, while a wide strip of land all around the shore is of the most fertile kind, producing grapes and market vegetables of all kinds in great abundance and high degree of perfection. There are ninety places on this island where wine is made. In the municipal district there was made last year 2,100 pipes, containing 105 gallons each, worth $40 per pipe, most of which was made on

the island. In five years the wine-making industry has increased from 950 pipes in 1883 to 2,100 pipes in 1887, and of the amount made last year 1,800 pipes were sold outside the district.

The grape, introduced on this island as early as 1835 and perhaps earlier (the exact history of its introduction seems to be unattainable), is of a variety closely resembling the *Americano isabella*, if not the same, producing a wine exactly the same in color, and resembling closely in taste and flavor the French claret bottled at Bordeaux.

In the section devoted to leather there were two exhibitors, one of which was awarded a medal of progress at Philadelphia in 1876—Costa, Eymael & Cia. The exhibits were few but good, consisting of fine calf, sole, saddle, and harness, both black and fair, tanned by the cold ooze process made from a bark procured in the northern and western part of the province. The sole-leather was especially well made, being the same in appearance and weight as that known as "Baltimore oak tan" in the United States. There are many facilities here for tanning, but the business is conducted on a limited scale.

The preserving of fruits, vegetables, meat, and fish is a growing industry in many parts of South America, especially in the region of the Rio Plata at Buenos Ayres. In Rio Grande there is a small place owned by a Frenchman, who had some of his goods on exhibition. They are said to be of fair quality, some of which he exports to Montevideo. His establishment has an annual capacity of from 60,000 to 100,000 cans, large and small. The price canned goods command here would be considered very high in the United States, but they are generally very good. The French have the lead in fine and fancy canned and bottled goods, with some others following, however, very closely. For instance, there is a canned peach in the market and here put up at Buenos Ayres, which is equal to any in everything requisite to a first-class article, but a can of the same size sold in the United States for 25 cents sells here for the equivalent of $1. American canned goods are not popular here now, because some time ago much of them were found to be soft and mushy in the can when opened for use, had been either cooked too much or had become too ripe before the fruit was canned. Canned fruits, in order to meet with any sale in these markets must be preserved so as to retain shape and original flavor as far as possible. I know personally that there are establishments in the United States that can fruits equal in quality to the best I have seen of French, Portuguese, or Italian brands, and I believe some trade could be secured for American goods of a proper kind.

I have observed that unscrupulous tradesmen endeavor sometimes to impose inferior articles on foreign markets. This not only avails nothing for the man who does it, but works a lasting injury to others, and affects the general reputation of all goods of the same class. American canned fruits could certainly be sold for less money here than the current retail prices, with profit to the seller.

In the department containing finished pieces of steam machinery and castings there are a few exhibits from the foundry of José Joaquin Dias.

The work and finish of the iron and steel was good and the castings smooth, a small one of bronze being especially well done and beautifully polished. This establishment is small, but does the repairing for many of the Government and other steamers in this port. The largest furnace has a capacity of 3,000 kilograms, and there are smaller ones for finer metals. The turning machines are Whitworth's pattern.

The largest brewery here had a large exhibit of its products in bottles, artistically arranged and covered with flash labels, but the beer is of a most inferior quality. The brewery has a capacity of 450,000 bottles per annum, retailing at 16 cents per bottle; but even at this price the greater number of German and English residents drink imported beer, ale, and stout at 54 cents per bottle in preference to the national beer.

A soap factory had some soap on exhibition, chiefly one kind, molded in large, long bars called *artigas*, for laundry purposes only. This establishment has an annual capacity of 60,000 arrobas, or 160,000 pounds, selling here its coarsest article at 5 cents per pound wholesale. Perfumed soap for toilet purposes is very costly here. It is almost all imported, and the tariff being at least 24 cents per pound, a cake of soap costing 20 to 25 cents in the United States sells here for not less than 75 cents to $1.

The section devoted to the fabrics of Rhiengantz & Co., who were also awarded a medal of progress at Philadelphia in 1876, was the most prominent and attractive feature of the entire exposition, containing eighty-six exhibits of articles of manufacture. As I have noted in a previous report, the woolen-mill was established in 1874, the first in the Empire, and the cotton-mill in 1880. These mills employ a total of 400 operatives, including women and children, who receive the sum of $100,000 in wages per annum, producing fabrics and materials worth $367,675 consisting of shawls, ponchas, flannels, cassimeres, cloths, blankets, and several grades of brown cottons. The rate of wages established for its operatives in the woolen-mill at the present time is as follows: Superintendent, $2,400 per annum; foreman of weavers, $75 per month; first assistant foreman, $50 per month; weavers (men and women), $20 to $45 per month; carding master, $125 per month; assistant carder, $45 per month; spinning master, $47.50 per month; dyer, $125 per month; assistant dyer, $1.10 per day; foreman finisher, $70 per month; engineer, $70 per month. The rate paid in the cotton-mill is as follows: Superintendent, $24.20 per week; carding, spinning, and weaving masters, each $19.36 per week. Carders and weavers receive the same wages in this mill as in the woolen-mill. All repairing is done in the company's shop on the premises by a mechanic at $1.10 per day. Boys ten years of age and upwards who work in the mills are obliged to attend for four hours each day a school kept open on the premises; during the time allotted to work they are employed in the mills at from 15 cents per day upward, according to age and strength. Girls who are able to reel and wind yarn receive from 20 to 40 cents per day. The hours of labor vary, being not less than eight nor more than ten hours per day, according to the

time of year. In the school for boys there are at present fifty pupils in attendance.

Both mills consume six tons of Cardiff coal per day, which costs here from $15 to $18 per ton. All foremen in the woolen-mill are German. The superintendent, Mr. Broadbent, is an Englishman, and has brought the fabrics of the mill up to a high degree of excellence since he assumed charge.

The wool used by the mill is from this province (São Pedro do Rio Grande do Sul) and is of three grades, known as *grossu*, *mestica*, and *merino*, or coarse, medium, and fine, worth the equivalent of 8, 9, and 10 cents unwashed, which loses in washing and carding from 45 to 55 per cent., making the raw material cost the company at the rate of 16, 18, and 20 cents per pound in the roll ready for spinning.

Blankets made of the medium grade of wool weighing 1,200 grammes sell at the company's deposit for the equivalent of $2.59 at the present rate of exchange, the raw material for the same costing 48 cents ready for spinning, leaving a margin for labor, coloring, and profit of $2.11. Flannels, black, blue, and of other colors and shades, suitable in weight for spring and fall wear in the Middle States of the United States, weighing 240 grammes per yard, 30 inches in width, sell at $1.45 per yard, the raw material costing, ready to spin, 10 cents per yard. In the higher-priced and finer goods the profit is not so great, and they compare favorably with those of English and French make sold in the markets here. This company has a contract with the Imperial Government to furnish the blankets, overcoats, and cloth for the uniforms of private soldiers for the army stationed in this province.

The material used in the cotton-mills is brought from Pernambuco, and costs here about 11 cents per pound. The retail price of the company for brown sheeting, smoothly and evenly woven, weighing 240 grammes per meter, 33 inches wide, is the equivalent of 16 cents; cost of a yard, 14½ cents. The heavier goods are of narrower width and are about the same price. The growth of the manufacture of this class of cotton goods here has seriously interfered with the sale of brown English and American cottons, and although the company has not yet achieved that high degree of excellence of American manufacturers, yet I see a rival in it which will soon override all cottons offered in the markets from England and the United States. It is an acknowledged fact that in brown and bleached muslins there are none that surpass the United States. American bleached cottons always find a sale here to a certain extent, especially the double-width sheetings, but the price being about 70 cents per yard very much limits its sale.

In conclusion I will say that the wool and cotton mills of Rio Grande do not produce the only articles that in any way affect the sale of woolen and cotton goods of foreign make, and so successful has this company been that last year it paid a dividend of 16 per cent. to shareholders, besides making extensive improvements. — RIO GRANDE DO SUL, *November 11, 1888.*

LEBBEUS G. BENNINGTON,
Consul.

RICE AND SUGAR IN PERSIA.

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RICE.

Rice growing or in the husks is, in Persian, shaltûk and shâlî; rice divested of its husks is beimj. The Arabic terms for rice—ruzz and uruzz—are also occasionally used, and from them it derives the word razzaz, meaning a vendor of rice.

Rice is cultivated in all parts of Persia, wherever water is abundant. It thrives well near the rivers and perennial streams, in the hot lowlands at the head of the Persian Gulf, all over the plateau of Persia, at altitudes varying from 1,000 to 8,000 feet above the level of the sea, and best in the lowlands forming the southern littoral of the Caspian. It may be said that all districts in Persia which possess a river or a perennial stream produce rice. A great part of Central Persia, and almost the whole southern littoral, extending from the head of the Persian Gulf to the frontier of Independent Beluchistan, are devoid of rivers and do not produce rice.

Some districts have small streams and produce only sufficient rice for their own consumption; others produce less than they consume; others are intersected by important rivers and produce rice in great quantities, enabling them to supply other parts of Persia and to export to foreign countries.

Some of the great rice-producing districts are: (1) The districts of Fars, which are intersected by the Kara-Aghâch River and its tributaries, by the rivers which flow into the lakes of Nairîs, and by the Shâpûd and Khisht rivers, which, like the Kara-Aghâch River, flow into the Persian Gulf. (2) The district of Lenjân, near Ispahan, with more than 200 villages; it is watered by the Zâyendehrûd River and supplies nearly the whole of Central Persia. (3) The districts of the northwestern province of Persia (Azerbaijan), which are intersected by the Kizil-Uzain and the Ajî-Chaî and their tributaries, and those on the lake of Urûmîak, particularly in the neighborhood of Marâgha. (4) The southern littoral of the Caspian, consisting of the Province of Gilan, Mazanderan, and part of Ashâbâd, intersected by numerous rivers, which flow from the northern slopes of the great Elburz Range down to the Caspian. (5) The district of Meshhed, in Khorasan, watered by the Kashafrûd, the river of Meshhed.

The most important of these districts is the fourth. The greater part of the cultivation of Gilan and Mazanderan is of rice, and those provinces are on that account very insalubrious in summer. The traveler Chardin observed, about 220 years ago, that one of the modes of expressing one's hatred to an enemy was to wish him to be made governor of Gilan, as that province was most subject to malignant fevers, and the more modern traveler, Holmes, said of Mazanderan, "Old women, mules, and poultry enjoy good health when all other animals pine away in sickness." No one has been able to give me any information as to the yearly produce of rice in Gilan and Mazanderan, but there is no doubt of its being very considerable.

The district of Sistan, on the eastern frontier of Persia and adjoining Afghanistan, is well watered, but grows very little rice.

The district of Bam, too, has abundant water, but a scanty population, and most of the water runs to waste. The rice plant is raised from seed and is transplanted, as in Bengal, from one to two months after the Nôrûz, or vernal equinox, and is reaped in about a hundred days after.

The kind of rice which does not require inundation, the mountain rice (*Oryza montana*), is, I believe, not cultivated in Persia on account of the small rain-fall, and I do not remember having seen it. The rural part of the population, with the exception of the inhabitants of the great rice-producing districts, consumes less rice than the urban population, and the nomads consume very little, some none at all.

Rice is divested of its husk by small hand mills of stone and is then further cleaned by a machine called dang. This machine is moved by water-power in Mazanderan and Gilan, in Senjân, and some other districts, but in towns generally in a more primitive manner. The machine consists of a heavy beam of wood, which swings vertically on a fulcrum like a see-saw, and is armed at one end with a hollow steel cylinder a foot long and fixed at right angles to the longitudinal section of the beam, at the other end with a counterpoise. The machine works as follows: Four or five men jump on to the end of the beam with the cylinder; their weight makes the beam descend and the cylinder at the end is forced into the rice. The rice is kept in a tank about four or five feet in diameter and four feet in depth and constructed in the ground, its aperture flush with the surface, and is mixed with coarsely-powdered rock-salt to increase friction. The men then jump off the beam on to a platform at the side and the counterpoise at the other end of the beam raises the end with the cylinder. The fall of the counterpoise is arrested by a block of wood, and as soon as the men hear the thud of the counterpoise on the block they again jump on the beam, go down with it, and jump off it. The work requires neither intelligence nor skill, but is very fatiguing, and it is a matter of astonishment that it is so badly paid. The five men on the beam receive for twelve hours' work per diem, during which they go up and down 120 times per hour, 2½ krans (that is, one-half kran, or at the present rate of exchange a little less than 7 cents, each) and their mid-day meal. The superior qualities of rice are generally cleaned twice. For the first cleaning the charge is 124 to 138 cents per khawâr (649 pounds), for the second cleaning 62 to 82 cents. Many families clean their rice at home by putting it, together with rock-salt, into a stone mortar and pounding it with a wooden pestle. This practice is principally followed in the south of Persia and in the province of Arabistan, at the head of the Persian Gulf. The work is always done by women, and the families of small communities generally combine. In the villages in the south one may often see, and more often hear, ten or twelve women preparing the rice for the next day's consumption. Each woman wields a long and heavy wooden pestle; one woman, generally the most muscular, who acts as leader of the gang,

begins to sing and step round the big stone mortar; all the others then sing and follow the leader, all keeping accurate time with their feet and with the pestles, which they crash into the rice about every third note. It takes the gang about half an hour to clean 32½ pounds of rice.

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The best rice produced in Fars is the Champa, with a long grain, which was introduced from India, where it was originally cultivated at Peshawer. Another kind grown in Fars is the Shahu, with a round grain similar to the Girdeh of other districts. The Ispahan districts produce principally the round rice called Girdeh (from gird, round). The best quality of Mazanderan rice is that called Amberbu (amber-odored), with a small oval grain. The next quality is the Sadre, with a long and thin grain somewhat like the Champa of Fars; the next the Girdeh, with a round grain. Other kinds are the Shahrek, which is an inferior Amberbu; the Zardeh (from zard, yellow), a yellow-colored rice also called Selimbegi and Zardmayeh; the Raihani, a strongly-scented but inferior rice (from Raihan, sweet basil), and the Charmeh (*i. e.*, leathery, from charm, leather). The much-esteemed Amberbu now rarely appears in the market, the Sadre having almost completely taken its place. Of the other kinds only the Sadre and Girdeh are exported; the others are kept for home comsumption. The best Gilan rice is the Akuleh, which has its name from the Akuleh district, where it was first cultivated; great quantities of it are also grown in Azerbaijan. The best rice of Azerbaijan is that of Maragha. A rice famous during the last century, but now never heard of, is that of Jemalbariz, to the south of Kerman.

It seems quite impossible to obtain any correct figures regarding the yearly produce of rice in Persia. There are no statistics whatever regarding agriculture, and the population can only be estimated. The natives can only make guesses, and their guesses vary so much they are of no value. From my personal estimates of the population, my observation of the economic condition of the inhabitants and information from the best sources, I have tried to obtain some figure more or less approaching the truth, and this I have done in the following manner:

Rice is an important staple of food of the inhabitants. Calculated per head of the population, most rice is consumed by the Mazanderan (the Mazanderanis), but it must not be supposed, as some travelers wish it to be done, that the Mazanderanis eat rice only. It is true that they eat little or no bread, and it is commonly reported that a Mazanderani can not digest bread, and would die if he were to eat bread only for a couple of days*; but they eat with the rice sufficient quantities of other food containing more nutritive matter than rice does — for instance, butter, cheese, meat, beans, peas, vegetables, etc. The food of the Mazanderani consists of rice, various stews made of condiments, meats, fresh and salt fish, game,† butter, onions,

* Conolly's Overland Journey (vol. 1, page 18) says: "So little do the people use wheat and barley that it is a saying among other Persians: 'An unruly Mazanderan boy threatens his mother that if his wishes be not complied with he will go into Trak and eat bread.'"

† Game is very abundant in the Caspian provinces and extraordinarily cheap. Pheasant, woodcock, partridge, goose, duck, teal, snipe, and quail are valued at from one to three cents each.

garlic, walnuts, and pomegranate juice, and of lettuce, milk, cheese, treacle, and various fruits. Rice, with a curry or stew made of pheasant or woodcock, walnuts, pomegranate juice, butter, and garlic is the famous dish of Gilan and Mazanderan, called Fisnisass.

LABORING.

Laboring men and a large number of women consume each about one-fourth Tabriz man (1.62 pounds).* We may safely calculate that a third of the population of Mazanderan consists of laboring men and of women eating the full proportion of rice, and assuming that Mazanderan has 200,000 inhabitants (it has certainly no more), the daily consumption of rice in the province may be estimated at 216,332 pounds (⅓ 200,000 × 1.62 + ⅔ 200,000 × 0.81). More bread and meat and less rice are consumed in Gilan and in the towns of Persia, and the average consumption of rice per head of the population in Gilan and in the towns has been estimated at one-eighth Tabriz man (0.81 pound) per diem for a third of the population and at half that quantity for the remaining two-thirds. The population of Gilan has been estimated at 150,000, and that of the towns at 1,900,000. These figures give a daily consumption of 1,107,000 pounds (⅓ 2,050,000 × 0.81 + ⅔ 2,050,000 × 0.405).

The rural as well as the nomad population of Persia live principally on bread and the average consumption of rice by the rural and nomad population has been estimated at the rate of one-sixteenth Tabriz man (0.405 pounds) per head per diem for a third of the population, and at half that rate for the other two-thirds. The rural population has been estimated at 3,600,000 and the nomad population at 1,000,000. These figures give a daily consumption of 1,405,000 pounds (⅓ 5,500,000 × 0.405 + ⅔ 5,500,000 × 0.2025).

The three added together and multiplied by 365 give the yearly consumption of rice in Persia at 457,600 tons. About 300 tons of rice are imported annually from India by way of the Persian Gulf ports, and deducting this quantity from the above total we get the yearly produce consumed in Persia 457,300 tons.

In comparison with the quantity from the above total consumed that which is exported is inconsiderable, amounting to hardly 20,000 tons per annum. The principal rice export is from Meshed-i-Sav and Enzeli, the ports of Mazanderan and Gilan, to Russia and amounts to 15,000 or 20,000 tons. A small quantity (50 tons) also enters Russia by way of Ashabad and Azerbaijan. Turkey takes a little (100 tons) from Azerbaijan and Kennanishah, and the Arabian ports on the Persian Gulf get some (30 tons) from Fars. Of the quantity exported from Khorastan to the Turkomans nothing is known. It must, however, be very small. Adding 20,000 tons as the quantity exported to the total consumed, we get for the total yearly produce 477,300, or say in round numbers 500,000 tons, and this figure I think near the truth.

* Man or mann is a Persian weight. The man of Tabriz is equal to 6.49 pounds; the Shah man is double and a Raiman four times 6.49 pounds, or 12.98 and 25.96 pounds. A Khawar is 100 Tabriz man, or 649 pounds.

Regarding the Gilan produce we have some figures in the British consular reports of Reshd, the capital of Gilan. They vary, however, to such an extent as to make them almost unworthy of consideration. One report says that an acre of land under rice cultivation yields 1,100 shamans of rice, that is 14,178 pounds. This is quite incredible. The yield of the richest fields of India never exceeds 2,500 pounds per acre, and the average yield is much below that figure:* The greatest yield per acre in the United States is, I think, about 6,500 pounds of paddy, giving rather more than half that quantity of rice.

From other consular reports I have put together the following table:

Year.	Total quantity produced.	Value of export to Russia.	Value of export to the interior of Persia.	Total quantity exported.*
	Pounds.			*Pounds.*
1871	389,400,000	£10,869	£80,500	8,771,620
1878	292,050,090	23,076	40,380	27,689,900
1879	167,560,000	65,384	76,920	15,179,098

*Calculated from value, and average price per pound for the year.

By deducting the quantity exported from that produced we ought to get the quantity consumed, and doing this we get for 1871, when the interior of Persia suffered from famine, as the quantity consumed in Ojitan, 380,628,380 pounds; for 1878, a year of great plenty, 264,360,100 pounds, and for 1879, the year of increased export to Russia, 92,380,902 pounds. By further calculation we find, from these figures, that each head of the population consumed 7 pounds of rice per diem in the famine year, and only 4⅛ and 1¾ pounds in years of plenty. As we have seen above, only a third part of the population consumed a full proportion of rice, or, in other words, half of the rice consumed in the country is consumed by a third of the population, consisting of laboring men and strong women; and as the third of the population of Ojitan is 50,000, and half of the quantity said to be consumed is 521,408 pounds per diem, we get for every laboring man or woman a daily consumption of over 10 pounds of rice and for every child over 5 pounds, which, I need hardly say, is utterly impossible. The ratio of daily consumption would be lowered by assuming the population to be greater than 150,000; but to make the 1871 figures agree with the quantity of rice any human being could possibly eat, we would have to assume a population of considerably over 1,000,000, while the highest estimates do not exceed 200,000. It is also noted that some of the rice which is exported from Gilan is of Mazanderan origin. This would still more increase the quantity left for consumption in Gilan, and again proves the figures to be incorrect.

Regarding the prices of rice in Persia, we have some figures in the Reshd consular reports; my private notes have given me some information, and

*According to the above-quoted blue book the average yields per acre were: In Oude, 793 pounds; in Bengal, 700 pounds; in Ajmere, 800 pounds; in the central provinces 1,600 pounds; in Massore 1,287 pounds; in Burmah, 1,466 pounds. A number of crop experiments undertaken by the Bombay Government, under the most favorable conditions, resulted in a yield of 2,463 pounds of rice per acre.

the Echo de Perse, the now defunct French newspaper of Teheran, gave me the prices at Teheran for the year 1887. I have gone through a file of the Persian Teheran Gazette, in the hope of finding the prices of rice in the provinces, but have found only a few quotations for wheat and barley and none for rice. As the last twenty numbers of the Gazette, published during the last nine months, repeat the phrase, "Prices of grain are still falling," I conclude that grain is at present remarkably cheap in the provinces.

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The following are some of the prices I have been able to obtain:

	Cents per pound.
Bushire, on the Persian Gulf, 1887	2⅛
Shiraz, capital of Fars	2
Ispahan, capital of Central Persia	1⅞
Resht, capital of Ojitan:	
1871	5
1872	1¾
1875	1 7/10
1876	1⅛
1877	1¼
1878	1 1/100
1879	4½
Teheran, capital of Persia:	
March, 1886	2⅛
March, 1887	3¼
April, 1887, to March, 1888	2 7/10
April, 1888	*2 9/10
April, 1888	†2 7/10
April, 1888	‡2½
April, 1888	⁂2¼

SUGAR.

Regarding the produce of sugar in Persia, there are no data whatever, and I am unable to make even an estimate. The following notes may, however, be of interest:

The sugar-cane was introduced into Persia, from its original home in Bengal, probably at a very remote period, and I am inclined to follow the opinion of Sir George Bindwood and others, who, in spite of the assertions of the learned Salmasius, of Springelbe, to the contrary, accept the conclusions of common sense and ascribe a knowledge of the sugar cane to the ancients.‖ The first indisputable mention of sugar by a western writer is

* First quality, twice cleaned.

† Second quality, twice cleaned.

‡ Second quality.

⁂ Once cleaned, round rice.

‖ The notices of Theophrastus (a sort of honey extracted from reeds); of Nearkhos, quoted by Strabo ("reeds in India yield honey without bees"); of Eratosthenes, also quoted by Strabo ("the roots of large reeds of India and Arabia"); of Pliny ("Arabia produces saccharon—sugar—but that of India is the most esteemed"); of Lucan ("in the well-known line with Indians on the Ganges 'guinque bibunt tenera dulce ab arundine succos'"); of Adian ("a kind of honey pressed from reeds"); of the anonymous author of the Periplus in the first century ("honey of a reed, called sugar"); of Alexander Aphrodiensis ("sugar is a concretion of honey in reeds"), he can hardly, as Salmasius and his followers asked, refer merely to the Tabashir of the East, a siliceous deposit found in the joints of the bamboo (bamboo is certainly not a tenera arunda), but evidently refer to the sugar-cane, its juice, and raw sugar.

that by Moses Chorencrisis, in the fifth century, who describes the sugar-cane as he saw it growing on the banks of Karun River, which joins the Shott-et-Arab, at the head of the Persian Gulf. In the olden times, and as late as the fourteenth century, the sugar-cane was much cultivated in Susiana, the country intersected by the Karun River, and principally near Ahwaz and Jundi-Shapur. Susiana was then one of the principal intermediate commercial stations between the present towns of Dizful and Shushter, and had its water from the Karun River by means of canals cut from the right bank some distance above Shushter, and from the Diz River by canals cut from the left bank, near the town of Dizful. With the decline of Jundi-Shapur, in the thirteenth century, the canals were neglected, and the cultivation of sugar-cane necessarily ceased. Ahwaz was a flourishing town about 50 miles below Shushter. The water of the Karun was there raised to the height of the banks by a great dyke, the famous Bond-i-Ahwaz, across the river, and with the destruction of the dyke the country became a desert. The present Ahwaz is a small village of about fifty houses on a mound which covers the ruins of a part of the former town. Hundreds of millstones or wheels formerly used for squeezing the juice out of the sugar-cane are lying about in all directions.

Persian historians do not ascribe the ruin of Ahwaz to the failure of the water supply, but to scorpions. They say an Indian merchant (up to the seventeenth century a great part of the merchants established in Persia was composed of Indian Banians), with the view of raising the price, bought up all the sugar he could and stored it for a year or two. When he opened his stores all the sugar had turned into scorpions, not into the comparatively innocent scorpions which we meet with on the Persian plateau, but into jerarehs, pab, yellow things, drawing their tail along the ground instead of carrying it over their back like respectable scorpions generally do. These jerarehs are very venomous. It is said that their sting kills a man instantly, and that they cut a thick felt carpet in two by merely drawing their tail over it.* Millions of jerarehs came out of the sugar store; all the inhabitants of Ahwaz fled, and the city has remained a desert from that day. There is still current in Persia a proverb which says: "At Ahwaz sugar-cane produces jerareh scorpions;" and one of the Persian poets, referring to the ringlets of his mistress, says "they are as deadly as the jerarehs of Ahwaz."

The art of refining sugar was invented in Susiana and Babylonia probably in the ninth or tenth century. The Indians learnt the art from the Arabs, and as late as the thirteenth century sugar refining was not generally known, and we read in Marco Polo that the inhabitants of China could make sugar before the reign of the Mongols (before 1270), but that they only boiled and skimmed the juice and produced a sugar resembling a black paste. But

*There is some exaggeration in this. I have seen many jerareh scorpions in Susiana; they had many chances of cutting my carpets, but never did so; and a servant of mine who was stung by one ten years ago is still alive.

when Kubilai Khan became Emperor of China some man of Babylonia went to Ungue and there taught the refining of sugar by means of the ashes of certain trees.

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Some of the old geographers and travelers speak of the cultivation of sugar-cane at Siraf, on the Persian Gulf, but Hu Haukal (943–976), Abulfeda (1273–1331), and others, who visited Siraf, call it a place excessively hot, without cultivation, and with very little water; and from what I have seen of the place myself (I visited the ruins in 1886), I do not think sugar-cane could have been cultivated there, at least not in any great quantity. Siraf was a city small in extent, but, as the principal mart of the Persian Gulf during the middle ages, very rich, and sugar from Susiana no doubt largely entered into its commerce. Abu Said Hassan, a native of Siraf, about the year 850, certainly did say that "the sugar-cane of India was very much like that grown at Siraf;" but Eastern writers are not always precise in their statements about localities, and I fancy his Siraf sugar-cane was that of Susiana.

The only district in Persia where sugar-cane is now cultivated is Mazanderan, which, as was stated above, is also the principal rice-producing district, and I believe that it was there introduced at a very late period, perhaps only during the last century. Travelers in Persia during the seventeenth century, Della Valle, Tavernier, Herenot, Clearius, and others, do not speak of its cultivation in Mazanderan, and the great Persian medical dictionary, Makhzan el Adviyek, written one hundred and twenty years ago, does not mention the Mazanderan sugar. Ritter says: "Sugar has been produced in Mazanderan in recent times, and has also been exported, but bad measures on the part of the Government have decreased the cultivation." Fraser says: "Most sugar-cane is cultivated in the districts of Barfurush, Sâri, and Ashraf, three towns of Mazanderan. The sugar-cane in Mazanderan requires twelve months to ripen, but the canes are small and poor, few being ever found thicker than a man's finger, and the produce is of very inferior quality, being dark and moist. Both these defects, in all probability, arise from want of skill in the cultivation and preparation of this valuable plant. The sugar is mostly consumed in the province, a considerable portion, however, is exported to Gilan and some to Russia."

I have been informed that the canes are planted in slips with two or three joints, in February or March, and ripen about eight or nine months after, having then a height of about 5 feet. One mill turns out, per diem, about 200 pounds of juice and about 60 to 70 pounds of sugar. The juice, therefore, yields 30 to 35 per cent. of sugar, which does not coincide with the assertion of some travelers that the cane of Mazanderan is very watery and poor, for Ure, in his "Dictionary of Arts, Manufactures, and Mines," gives the average yield of sugar from the juice of the Indian cane as being equal to 20 per cent. of the juice. Conolly, in his "Overland Journey to India," says a great quantity of coarse sugar is grown in Mazanderan and exported. British Consular Reports for Astrabad give the value of sugar exported from

Mazanderan in 1879 as equal to £577, and in 1881 £670. A report quoted by Mr. Hubert (in No. 113, Consular Reports 1887) states that 1,700 maunds (83 tons) of sugar was made in Gilan in 1871.*

I have failed to obtain any information as to the quantity of sugar produced, consumed, or exported; all the authorities I have been able to consult told me that sugar was produced and exported in great quantities, but nothing more. Only raw sugar is manufactured in Mazanderan. There are no sugar refineries. The raw sugar is sold at the place of manufacture in the villages at from 1⅛ to 2¼ cents per pound, and in the markets of Sari and Barfunish at from 2¼ to 4½ cents per pound, according to quality.

In some towns of Persia, principally Yezd and Tapahan, Jaru raw sugar was, up to a few years ago, refined and made into loaf sugar. The loaf sugar made in Persia was seldom perfectly crystallized, and was on that account very soft; it was also more or less impure and dirty, the loaves not having been properly washed, and the green sirup not having been completely removed. The imported foreign loaf sugar becoming very cheap, sugar refining in Persia ceased to be profitable. The general Persian word for sugar is "shakar," the sugar-cane is "udi-i-shakar," while refined sugar is "kand," a loaf of sugar is "kelleh i-kand," *i. e.*, head of sugar, sugar candy is "nabat." Persia is famous for its sugar candy. This is made in the ordinary way but is left t crystallize on strings in a bowl of earthenware or china. The strings are kept at the bottom of the bowl by a piece of lead and at the top by strips of wood; when taken out of the bowl it retains its shape and is called "kasch-i-nabat," *i. e.*, a bowl of candy.

I think sugar-cane would thrive well in some districts of Persia and Southern Persia, at altitudes of from 1,000 to 3,000 feet above the level of the sea. The plain of Bugh-i Mailik, east of Shushter, at an elevation of 2,600 feet; that of Shapur, west of Shiraz, elevation 2,500 feet; those of Finift and Rudbar, south of Kerman, 2,000 to 3,000 feet; and some others seemed to me to be very favorable spots for the cultivation of the sugar-cane. During the fourteenth century there were sugar plantations producing sugar in the Caus valley, from Badakshan down to Balkh and Bokhara, at a mean elevation of 1,800 feet, and under latitude 37° N., and during the Emperor Raber's reign, about the year 1524, it was cultivated together with the banana at Kabal, the present capital of Afghanistan, at an elevation of 6,200 feet, but does not seem to have yielded any sugar.—TEHERAN, *September 24, 1888.*

A. HOUTUM SCHINDLER.

* Unless Gilan here stands for Mazanderan we have here the only notice of sugar-cane being produced in Gilan. The calculation of maunds into tons also is not correct, 1,700 Tabriz maunds being equal to 49.1 tons, and 1,700 Shah maunds to 58.2 tons.

CONGRESS OF THE CENTRAL AMERICAN STATES.

[Transmitted by Minister Hall.—From the La Gaceta, of Costa Rica, December 11, 1888. Translation.]

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Supplementary treaty to the general treaty of peace, friendship, and commerce, and the extradition convention, signed at Guatemala the 16th day of February, 1887, between the Republics of Costa Rica, Guatemala, Honduras, Nicaragua, and Salvador.

The Governments of Costa Rica, Guatemala, Honduras, Nicaragua, and Salvador, desiring to remove the obstacles which prevent the establishment of an international Central American code, which shall be uniform for all the sister republics, and shall direct them towards that union, as suggested by the general treaty of peace, friendship, and commerce, and extradition convention signed at Guatemala the 16th of February, 1887, and the first-mentioned treaty having been approved by the National Assembly of Salvador with the suppression of the following:

The last paragraph of article 2, relative to the remote case of a rupture between two or more of the Republics;

Article 6, which concedes to Central Americans who desire to become naturalized in any of the republics, the same rights as natives;

Article 7, which limits the term of residence to be required of Spanish-Americans and other foreigners for naturalization in Central America; and

Article 28, relating to a common diplomatic representation in foreign countries, and to an agreement as to treaties with other nations, concessions to steam-ship companies, railways, etc.

And the Constitutional Congress of Costa Rica having approved the extradition convention suppressing article 13, relating to the provisional detention of a criminal in the country wherein he has taken refuge, upon a telegraphic or postal communication from the government in which he is to be tried.

And desiring, on the other hand, to establish rules for terminating the disagreements which may arise between the high contracting parties; to mark out the line of conduct which, in the event of a rupture between two or more of them, the others are to follow; to assure the inviolability of the alliance, and that the meetings of the Central American Congress may be more frequent; have concluded to reconsider the mentioned treaty and convention, already ratified by the legislatures of Costa Rica, Guatemala, Honduras, and Salvador, and it is to be expected will soon be ratified by the Congress of Nicaragua, have appointed their plenipotentiaries as follows, to wit:

The Government of Costa Rica, His Excellency the Licentiate Señor Don Ricardo Jimenez.

The Government of Guatemala, His Excellency the Licentiate Señor Don José Farfan, jr.

The Government of Honduras, His Excellency the Licentiate Señor Don Jeronimo Zelaya, Minister for Foreign Affairs of that Republic.

The Government of Nicaragua, His Excellency General Isidro Urtecho.

The Government of Salvador, His Excellency Doctor Francisco E. Galindo.

The four last named having respectively the character of envoys extraordinary and ministers plenipotentiary of Guatemala, Honduras, Nicaragua, and Salvador, near the Government of Costa Rica, who, having communicated to each other their respective full powers, found to be in good and due form, have agreed to the following articles:

ARTICLE 1. The high contracting parties considering that the term of four months for the selection of an arbitrator, as provided in Article 1 of the general treaty of peace, friendship, and commerce, is too long and desiring to harmonize that article with the present treaty, agree to amend it, as follows:

"ARTICLE 1. There shall be perpetual peace and loyal and sincere friendship between the Republics of Costa Rica, Guatemala, Honduras, Nicaragua, and Salvador. If, unfortunately, any difficulty should occur between two or more of the said Republics, a settlement

shall be sought, and, if not obtained, the question shall be submitted to an arbitrator. In order that the selection of an arbitrator may never be an obstacle to the fulfillment of this stipulation it is agreed, that should the plenipotentiaries of the contending governments to the Central American Congress which shall have cognizance of the question (as provided in article 4, interpolated in the present treaty) not come to an agreement for the designation of an arbitrator within a reasonable time, which shall not exceed thirty days, which the mediating plenipotentiaries may designate, the same shall be drawn for from among the governments of the following nations: The Argentine Republic, Chili, France, Germany, United States of America, Great Britain, Mexico, Spain, and Switzerland. The first drawn shall be the arbitrator; if not accepted, the second shall be taken, and if the second declines the appointment, then the third of those drawn shall be the arbitrator."

ART. 2. The high contracting parties, recognizing that a rupture *de facto* between two or more sister republics which have bound themselves to decide their differences by arbitration might occur in case of rejection of the mediation of the other republics not directly compromised therein, and what would be still more grievous, after having been decided by an unappealable arbitral award, to the detriment of the most vital interests of Central America, and that if such a rupture should occur without uniting for the mediation of the sister governments, it would also be in violation of treaty stipulations, agree to suppress the final paragraph of article 2 of the general treaty of peace, friendship, and commerce signed in Guatemala on the 16th of February, 1887, which prescribes for such cases the neutrality of the governments not directly interested in the conflict.

ART. 3. Inasmuch as the general treaty of peace, friendship, and commerce does not establish fixed rules for terminating the differences which may arise between the high contracting parties, and it being necessary also in the event of such a rupture in fact between two or more sister republics to designate the line of conduct which the others, not directly compromised in the conflict, should observe, as also to prohibit the alliances of sister republics against sister republics, the high contracting parties agree to interpolate in the general treaty of peace, friendship, and commerce, immediately after article 2, the following articles:

"ART. 3. In the event of a disagreement between two or more of the Central American contracting republics, which may endanger their good relations, it shall be the duty of the contending governments (without prejudice to the obligations imposed on them by the foregoing article) to communicate the disagreement to the sister republics not directly compromised in the question without delay and before soliciting the decision or mediation of any foreign power. But if the Central American Congress should be in session the contending governments shall bring the question directly to its notice for the purposes expressed in article 5 (interpolated).

"ART. 4. The governments not directly interested in the differences upon receiving official notification of the disagreement between two or more of the high contracting parties, or the same having become notorious by the exchange of correspondence relative to the conflict between them shall immediately convoke an extraordinary meeting of the Central American Congress, or shall anticipate the ordinary meeting, and shall agree upon the place at which the Congress shall hold its sessions.

"ART. 5. The republic which considers itself aggrieved shall present to the Central American Congress, through the medium of its plenipotentiary a memorandum setting forth the ground of complaint. The plenipotentiary of the republic against which the memorandum is formulated, shall present another of explanations; if in the latter there should also be complaint, the plenipotentiary who has taken the initiative shall reply.

"With reference to these documents, the plenipotentiaries of the republics not directly interested in the question, shall deliberate upon the means of conciliation which may seem most equitable and effectual, and, as mediators, shall submit them to the consideration of the contending republics, and shall endeavor to obtain a reconciliation.

"If this should not be realized the mediating plenipotentiaries shall recommend to the contending republics the election of an arbitrator by mutual agreement, and if this should be

impossible, after the expiration of the term prescribed in article 1 (reformed), the mediating plenipotentiaries shall carry out the drawings referred to in the same article, and shall communicate the result to the plenipotentiaries of the contending republics.

"The same proceedings shall be observed when two or more of the republics consider themselves aggrieved, or there may be two or more republics against which the memorandum of complaint shall have been formulated.

"ART. 6. The Central American code will be held to have been infringed by the government which violates the settlement agreed to, which does not respect a pronounced award, which unjustly invades foreign territory, evading the rules and means hereinbefore designated, which violates the first paragraph of article 5 of the original treaty of peace, friendship, and commerce relative to the suppression of organized factions against an allied government, or article 7 (interpolated), which prohibits alliances that might be made effective against any one or more of the allied Central American republics.

"In either of such cases the republics not directly interested in the question shall have the right to intervene, even by force of arms, with the view of causing the agreement or award to be respected, or to aid the one unjustly attacked. In such case the governments not directly interested in the question shall come to an understanding, and those which determine to intervene with arms shall operate jointly.

"Under no pretext and for no cause shall either of the republics have the right to make common cause with the government which shall have violated the Central American code, in any of the forms expressed in the first paragraph of this article, nor to lend any moral or material aid in carrying out such object.

"ART. 7. No one of the contracting republics shall have the right to form alliances within or outside of Central America, general or special, offensive or defensive, permanent or provisional, expressed or tacit, which are intended to have effect or which might produce effect, in regard to one or more of the allied republics of Central America. This stipulation is without prejudice to that established by the second paragraph of the foregoing article (interpolated) against the government which violates the Central American code. But two or more of the contracting republics may form closer alliances than by this treaty to resist powers which are not Central American.

"If any one of the contracting republics should sign treaties of alliance with foreign powers it shall be understood that the terms of such alliance shall never prevail against nor to the prejudice of the fraternal alliance of Central America."

ART. 4. The high contracting parties, recognizing that the National Assembly of Salvador could not accept the principle that the naturalization of Central Americans in any of the contracting republics gives them all the rights of native citizenship, because opposed to the constitution of the Republic, and that the same difficulty would be presented in the adoption of the principle by the Congress of Nicaragua; recognizing moreover, that the constitutions of both Republics have nearly assimilated the rights of naturalized Central Americans with those of native citizens, agree to suspend the observance of article 6 of the general treaty of peace, friendship, and commerce.

The principle therein established shall form a part of the Central American code whenever Nicaragua and Salvador shall have amended their constitutions by adopting it.

The Government of Salvador binds itself to solicit of the Assembly the reconsideration of article 6 of the general treaty of peace, friendship, and commerce.

ART. 5. Nicaragua and Salvador recognize the fact that until they shall have amended their constitutions, as they are bound to do, the other sister republics have the right to restrict, as regards Nicaraguans and Salvadorians, the principle that the naturalization of Central Americans in any of the republics of Central America places them on an equality with native citizens, and that those restrictions may be carried out by conceding them the rights only which the constitutions of Nicaragua and Salvador concede to naturalized Central Americans in their respective territories.

ART. 6. The high contracting parties, recognizing that, for the observance in all the republics of Central America of the 7th article of the general treaty of peace, friendship, and commerce, it would be necessary to make constitutional reforms which are of no importance at present, inasmuch as owing to the small number of immigrants the naturalization of Spanish-Americans and other foreigners is of rare occurrence, while, on the other hand, there are sufficient facilities for such naturalization in all of the contracting republics, and that the article referred to, which makes the conditions for obtaining citizenship uniform, although inspired by a spirit of Americanism and fraternity, does not directly promote a fusion of Central American interests, with a view to the formation of its union as one political body, agree to consider the said article as suppressed.

ART. 7. The high contracting parties, desiring that the periodical meetings of the Central American Congress shall be more frequent, agree to reform article 26 of the general treaty of peace, friendship, and commerce, as follows:

"ART. 30. With the object of discussing periodically those matters which are of common interest to all of the contracting republics, and for the adoption of expedient measures, a congress of plenipotentiaries of all of them shall meet every year, and, if practicable, its installation shall take place on the 15th of September, the anniversary of independence.

"The congress shall give its attention to the making of such new treaties as experience shall have suggested as necessary or useful for the development of the great interests of Central America, in reforming those which in practice have proved dangerous or prejudicial, and in discussing such matters of general interest as any of the plenipotentiaries shall present.

"The meetings of the congress shall take place by turns in each republic in the following order: Salvador, Honduras, Nicaragua, Guatemala, and Costa Rica, and the first meeting shall be on the 15th of September, 1889."

ART. 8. The high contracting parties, recognizing as ineffectual the obligation relative to a collective diplomatic representation of Central America, and that, relating to an agreement as to granting concessions to steam-ship companies, railways, etc., inasmuch as its laxity permits the governments to comply or not with the obligation; while on the other hand the constitutions of all the Central American republics confer upon the executive power the necessary authority to unify the diplomatic representation in such cases as, and whenever it may be found expedient, and also leaves him at liberty to agree with the other sister republics in regard to concessions to companies formed for every kind of enterprise; the stipulation, therefore, contained in article 28 of the general treaty of peace, friendship, and commerce becomes unnecessary, and they agree to suppress it.

ART. 9. The high contracting parties recognizing that it is not usual that the provisional detention of a person charged with crime should precede an authenticated demand for his extradition, even in following out the idea of considering Central America as one sole judicial territory; that the adoption of that principle would entail difficulties in view of the great extent of the country, making a prolonged detention, a month even, obligatory as stipulated, at the termination of which the documentary evidence might prove insufficient, or the requisition might not arrive in time, thus resulting in the release of the person detained, and affording him the means of insuring his immunity, in the event of the documentary evidence being reformed, or the subsequent arrival of the requisition, agree to suppress article 13* of the extradition convention signed in Guatemala on the 16th of February, 1887.

ART. 10. The general treaty of peace, friendship, and commerce, signed in Guatemala on the 16th of February, 1887, by all of the plenipotentiaries of the high contracting parties shall comprise thirty-five articles, which shall be numbered in their order, omitting the final paragraph of articles 2, 7, and 28, and interpolating the five new articles subjoined to article

*Article 13 of the extradition convention of the 16th of February, 1887, between the five Central American Republics is as follows: "ART. 13. In urgent cases the provisional detention of the person charged with crime may be solicited, always by the diplomatic channel and judicial requisition, upon telegraphic or postal communication. The provisional arrest shall be made in the form and in conformity with the legislation of the country of refuge, but it shall cease, if within the term of one month from the date upon which it takes place the requisition mentioned in the preceding article shall not have been formulated."

3 of the present treaty. And the extradition convention signed in the same city, on the same day, by the same high contracting parties, shall consist of seventeen articles, which shall be numbered in their numerical order, omitting the only article suppressed.

It is declared that when, in the present treaty, articles of the general treaty of peace, friendship, and commerce, or of the extradition convention are cited, the reference is to the enumeration in the treaty and convention as they signed at Guatemala, and that when the reference is to the amended or interpolated articles of the present treaty, the amendment or interpolation is adverted to in parenthesis, and is to be understood as relating to the enumeration newly adopted in the foregoing paragraph.

ART. 11. The present treaty shall be submitted for the requisite ratifications, and these ratifications shall be exchanged in the city of Guatemala in the term of two months after the last ratification shall have been effected.

Each government shall, to that effect, notify the others of the ratification on its part as soon as verified.

The non-ratification of this treaty by one or more of the contracting republics does not release those who shall have ratified it, and among the latter it shall be held firm and valid.

In faith of which the plenipotentiaries have signed the present treaty in five originals, and have affixed thereto their seals.

Done in the city of San José de Costa Rica the 24th day of November, 1888.

RICARDO JIMENEZ. ISIDRO URTECHO.
JOSÉ FARFAN, JR. FRANCISCO E. GALINDO.
JERONIMO ZELAYA.

National Palace, San José, December 5, 1888.

Whereas the foregoing treaty is conformable with the instructions given to the plenipotentiary of Costa Rica, let it be approved in all its parts and brought to the knowledge of the constitutional congress.

A. DE J. SOTO.

MANUEL J. JIMENEZ,
Secretary of State for the Department of Foreign Relations.

IMPORTS INTO GERMANY FROM THE UNITED STATES.

The following table shows the percentage of duties collected in Germany on the more important articles obtained from the United States as compared with values in 1886, a specified return of duties not having been published for 1887:

Articles.	Value of imports.	Duty collected.	Percentage.
Animals:	*Marks.*	*Marks.*	
Cows and bullocks	25,098,000	587,700	2.35
Horses	69,111,000	1,452,300	2.11
Oxen	5,309,000	396,500	7.47
Sheep	208,009	6,200	2.98
Barley	45,653,000	5,331,900	11.68
Bark for tanning	8,210,000	.....	.....
Bristles and substitutes	8,381,000	Free.	.....
Chemicals, drugs, dyes, etc.:			
Bone black	3,119,000	Free.	.....
Catechu	3,107,000	Free.	.....
Cinchona bark	8,216,000	Free.	.....
Dye woods	8,302,000	Free.	.....
Dye extracts	3,910,000	Free.	.....
Indigo	17,903,000	Free.	.....
Lime, chloride of	790,000	187,600	23.75
Potash	431,000	22,300	5.17
Resin of fir (turpentine)	4,984,000	Free.	.....

Table showing the percentage of duties collected in Germany, etc. — Continued.

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Articles.	Value of imports.	Duty collected.	Percentage.
Chemicals, drugs, dyes, etc.—Continued.	*Marks.*	*Marks.*	
Soda, crude and crystallized	67,000	20,270	30.25
bicarbonate of	211,000	13,500	6.40
calcined	145,000	37,170	25.63
Tartar	3,591,000	Free.	.....
Clay ware	3,151,000	481,600	15.28
Porcelain ware	504,000	120,000	23.81
Coal:			
Pit	28,163,000	Free.	.....
Brown	15,114,000	Free.	.....
Cocoa (in beans, raw and burnt)	5,903,000	1,291,000	21.87
Chocolate and manufactures of cocoa mass, etc	1,875,000	374,600	19.98
Coffee and substitutes	138,485,000	49,904,000	36.04
Cotton:			
Unmanufactured	175,346,000	Free.	.....
Carded, combed, and dyed	2,304,000	Free.	.....
Yarn	56,497,000	5,269,000	9.33
Manufactures of	19,252,000	1,924,000	9.99
Clocks	70,000	22,800	32.57
Watches	6,473,000	505,800	7.81
Copper:			
Crude or scrap	10,126,000	Free.	.....
Wrought or rolled	387,000	25,700	6.64
Wire (unplated)	151,000	16,500	10.93
Telegraph cable	33,000	2,800	8.48
Wire (plated)	3,000	1,600	53.33
Coppersmiths' and braziers' articles (coarse)	3,947,000	95,600	2.42
Stones and stone wares	30,801,000	403,600	1.31
Fancy articles	22,173,000	1,289,000	5.81
Farinaceous substances and preparations:			
Starch, farina powder, and arrowroot	368,000	88,500	24.05
Starch (gum)	52,000	17,900	34.42
Fertilizers:			
Guano	8,658,000	Free.	.....
Bone powder	2,303,000	Free.	.....
Superphosphates	2,834,000	Free.	.....
Fish:			
Salted, cured, etc	3,820,000	154,600	4.05
Canned	757,000	206,000	27.21
Herrings	30,162,000	3,388,000	11.23
Crabs (fresh)	14,144,000	Free.	.....
Flax	32,833,000	Free.	.....
Hemp	19,887,000	Free.	.....
Jute	9,680,000	Free.	.....
Jute and manila hemp yarn	1,398,000	94,500	6.76
Linen yarn	19,955,000	962,000	4.82
Sewing thread	2,687,000	79,000	2.94
Manufactures of jute, flax, hemp, etc., except rope-makers' articles	33,269,000	699,100	2.10
Fruits:			
Tropical (bananas, lemons, oranges, etc.)	4,392,000	739,600	16.84
Dried (plums, prunes, apples, pears, etc.)	8,709,000	1,248,500	14.34
Furs and fur skins	43,996,000	36,600	0.08
Glass and glass ware	8,107,000	893,700	11.02
Hair (human)	120,000	10,500	2.50
Hats	1,070,000	82,500	7.71
Bonnets	339,000	34,000	10.03
Others not specified	202,000	16,600	8.22
Hides and skins	135,393,000	Free.	.....
Hops	3,664,000	245,000	6.69
India rubber and gutta-percha	16,163,000	Free.	.....

Table showing the percentage of duties collected in Germany, etc.—Continued.

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Articles.	Value of imports.	Duty collected.	Percentage.
	Marks.	*Marks.*	
India rubber, manufactures of	2,318,000	195,000	8.41
Iron and steel:			
Manufactures of	25,409,000	3,585,000	14.11
Pig-iron	6,595,000	1,649,000	25.00
Bar iron (wrought)	2,959,000	402,000	13.59
Sheet (plate)	1,158,000	195,000	16.84
Iron wire	1,139,000	89,000	7.81
Fancy manufactures of wrought-iron ware	3,938,000	181,000	4.60
Coarse manufactures of wrought-iron	7,459,000	96,000	1.29
Railroad vehicles, etc	820,000	87,000	10.61
Jewelry	8,183,000	127,000	1.55
Leather:			
Manufactures of	39,494,000	1,751,000	4.43
Gloves	5,425,000	76,000	1.40
coarse	1,805,000	123,000	6.26
fine	8,836,000	323,000	3.66
Sole-leather	3,682,000	567,000	15.40
Glove-leather	5,246,000	186,000	3.55
Malt	13,814,000	2,029,000	14.61
Malt liquors	3,276,000	642,000	19.60
Oils and fats	91,078,000	275,000	0.30
Paints:			
Perfumery	916,000	65,400	7.14
Colors	66,000	12,300	18.64
Ultramarine	30,000	6,300	21.00
Paper and manufactures of	6,599,000	494,000	7.49
Provisions:			
Butter	6,341,000	969,000	15.28
Cheese	7,511,000	1,036,000	13.79
Eggs	24,528,000	962,000	3.92
Seeds (not medicinal):			
Rape-seed	10,925,000	742,000	6.79
Linseed	12,421,000	Free.	.....
Clover-seed	12,127,000	Free.	.....
Salt	530,000	262,300	494.91
Silk, and manufactures of	194,622,000	3,325,000	1.77
Raw silk	100,550,000	Free.	.....
Manufactures of half-silk articles	24,808,000	254,100	10.24
Laces, blondes, and embroideries	10,770,000	643,000	5.97
Soap and perfumery	2,001,000	279,000	13.94
Spices	9,806,000	297,400	30.33
Spirits (distilled) and spirituous compounds	5,285,000	374,700	70.90
Sugar	1,339,000	873,000	65.05
Tea	3,040,000	1,615,000	5.31
Tin and manufactures of	13,564,000	13,000	0.10
Tobacco and manufactures of	64,792,000	35,585,000	54.92
Tobacco leaf	54,377,000	30,287,000	55.70
Cigars and cigarettes	9,396,000	1,151,000	12.25
Wines and cider (in casks)	29,438,000	14,616,000	49.65
Champagne and other sparkling wines (in bottles)	3,343,000	1,258,000	37.63
Still wines (in bottles)	1,113,000	345,000	31.10
Wood and other carving stuffs and manufactures	121,365,000	8,378,000	6.90
Lumber and timber	74,420,000	675,200	9.07
Manufactures of cabinet ware and house furniture	6,658,000	484,200	7.27
Wool, manufactures of	395,960,000	2,330,200	0.59
Zinc and manufactures of:			
Zinc in pigs	18,631,000	Free.	.....
Manufactures of zinc	1,497,000	36,000	2.40

F. RAINE,
Consul-General.

NAVIGATION, COMMERCE, AND INDUSTRIES OF THE ARGENTINE REPUBLIC.

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The Argentine Republic, as never before, appears to be on the high road to national prosperity. The "boom" which I referred to in my last annual report has become even more pronounced and decided. In every department of industry and trade an increased impulse is everywhere perceptible. The spirit of progress and speculation seems to pervade the whole country. A general push, more emphatic than ever before in the history of the Republic, is the order of the day and the programme of the future. There may be some weak points in the movement, but it is neither artificial nor fictitious; it seems to be real and genuine. Look where we will, in every direction we see the signs of progress; and they are too general to be illusive and too emphatic to spring from any other source than a mighty current, which is bearing the country along with a force which the minor impediments of bad financial management and a persistent disregard of the laws of trade can not weaken.

THE ARGENTINE "BOOM."

The impulse, which commenced here in Buenos Ayres, is now felt all through the different provinces. New farms, new estanceas, new industries, new railways, new public works, new banks, are cropping out in all directions; and with the increasing immigration of new laborers from Europe and the constant accession of new capital from abroad seeking profitable investment here, the development which is now going on may be considered as almost marvelous. All classes of the people are aroused to the possibilities of the new departure. Many, perhaps, are being carried beyond the bounds of prudence into new avenues of speculation, and some may be overwhelmed in the mad race after riches; but the movement is onward, unmistakably onward. The continuance of the suspension of specie payments, the decree of the Government making paper a legal tender for the payment of debts, and the constantly increasing volume of irredeemable currency which the new national banks are putting into circulation, make it easy to float the most extravagant schemes for "getting rich" quickly; and the whole community is almost off its head in the midst of the excitement which everywhere prevails.

PEACE AND PROGRESS.

What greatly adds to the business impulse and spirit of development which nowadays more than ever characterizes the people, is the political quiet which pervades the country. Revolutions and attempts at revolution are matters of the past. All through the extent of the Argentine Republic the guaranties of the constitution now have the sanction of the people and the laws are permitted to be peacefully executed. Labor is more and more respected and honored, and capital finds ready investment with more confidence than ever before. No one any longer thinks of or fears internal commotions or civil

disturbances. The Argentine citizen's love of country no longer manifests itself by trying to get forcible possession of the Government, but rather by seeking to increase the wealth and production of the Republic. The new President, in his late message to the Argentine Congress, sees in all this "good grounds for congratulation and for new and noble hopes." He says:

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My policy has been peace, toleration, and conciliation. The fullest liberty for the expression of public opinion and the free exercise of personal rights is the most eloquent phase of national life. The National Government at last is respected throughout the interior, the different provinces thereof giving it frequent proofs of support and confidence. A comparison with times unfortunately not very remote shows palpably the immense progress which has been made materially and in the working of the institutions under which we live. Until quite recently the political chapter in public documents like this was simply an index to all the horrors of civil war, attempts on the lives and properties of citizens, and a catalogue of outrages on an oppressed people by ignorant leaders, bred in the desert, with an outward semblance of civilization, but none the less arbitrary and to be dreaded. Young men of the present generation can remember how the most trivial local disturbances gave rise to bloody struggles, exile, and a complete abandonment of all labor, the scourge spreading from province to province, the only means of finally conquering the insurgents being force and death. Abroad, the very name of the nation was a synonym for anarchy, thus preventing all chance of economic life and credit for the country and destroying all stimulus for labor by the incessant state of uneasiness. How great were the burdens of those troublous times, when compared with the bright and hopeful present as the measure of our progress!

INTERNATIONAL DIFFICULTIES.

During the past year the relations of the Argentine Republic with the different nations of Europe and America have continued to be of the most friendly character. The boundary question between Chili and the Argentine Government still remains unsettled, but the negotiations for determining the line which divides the two countries are quietly proceeding within the stipulations of the 23d of July, 1881. The settlement of the limits controversy between the Argentine Republic and Brazil was referred to a joint commission, which, with a technical staff of assistants, has been at work for more than a year in the exploration of the disputed territory in the Misiones. The only doubt which arose was in reference to the identification of River San Antonio Guazia, sustained by the Argentine commissioners and resisted by the Brazilians, and it is thought that an understanding has now been reached on the subject. In regard to the boundary question with Bolivia, nothing has been done during the past year, both Governments maintaining the existing *status in quo* in the most friendly manner.

THE TERRITORIES.

The national territories, whose provisional organization I have referred to in former reports, continue to give signs of development and vigorous growth. The influx of population into these incipient provinces or states, the opening up of new estanceas, the establishment of schools, the organization of courts of justice — all those things point to the fact that it will not be many years before the four territorial governments into which Patagonia is divided, to-

gether with those of the Chaco and Misiones will be knocking for admission into the Argentine Union on terms of equality with the original fourteen provinces.

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IMMIGRATION.

According to the official returns the number of immigrants arriving in this country during the year 1887 was 137,426, against 93,116 in 1886. Already, however, for the eleven months of the present year the number of arrivals reaches 128,797. The Government has been making more than ordinary efforts to foment emigration from Europe to the River Plata, and the late Congress voted the cost of fifty thousand passages to be advanced to agriculturists and artisans to enable them to come here. Dr. Navarro, the commissary of immigration, is now in Europe to complete arrangements for putting the embarkation of emigrants on a better basis.

There is no doubt the efforts of the Argentine Government thus to induce immigration are having a grand success with the poor classes of Europe, who are without work and without hope; and the change they make in coming here is for the better. Their condition here, no matter how inadequate the wages, no matter how miserable socially, morally, and politically they may find themselves here, is far in advance of what they have left behind them. There is no doubt that they can all find work, and, by hard struggles, manage after awhile to become more comfortable in their surroundings, but under such circumstances and self-denials as would not only discourage but quite overwhelm with despair any one who had been accustomed to the higher plane of civilization in the United States. It is on this account that I once more entreat our American citizens not to try their fortunes down here. They will find everything so different and so primitive in the interior of the Argentine Republic, compared with what they have enjoyed at home, that they are sure to be thoroughly disappointed; and, if they come without the means of returning, as too many of them do, they will soon find themselves utterly destitute, begging the charities of a people whose language they can not speak. Such distressing cases come under my observation every few days, and tax all my efforts to assist them even temporarily. With the immigrants from the overcrowded shores of the Mediterranean the situation is altogether different. They not only find their countrymen here in large colonies, but they are so similar in language and habits with the people of the country that they at once are able to make themselves understood and soon imperceptibly assimilate with the native population.

RAILWAYS.

There continues to be a great movement throughout the Argentine Republic in the construction of railways. So great are the number of new concessions granted by the National Congress and by the different provincial legislatures that I find it impossible to name them all. Up to the meeting of the last congress there were national concessions for seventeen different lines, of which thirteen enjoy the guaranty of the Government. These guarantied

lines represent a total length of 7,961 kilometers (4,975 miles), and the aggregate length of the other lines 1,272 kilometers (795 miles), making a total of 5,770 miles. Among them are the following, viz: The Chaco and Tartagal Railway, the Reconquista and Formosa (Chaco) Railway, the Bahia Blanca and Villa Mercedes Railway, the San Juan and Salta Railway, the Chumbicha, Tinogasta and Andalgala Railway, the Goya and Monte Caseros Railway, the Resistencia and Metan Railway, the San Cristobal and Tucuman Railway, etc. A line from San Juan to Cabra Corral, in Salta, is being surveyed, as also one from Mendoza to San Rafael; also, the line from Cobos to Salta via Lagunilla, and several others of less prominence.

The following roads are in the course of construction, to wit: The extensions of the Northern Central, the road now being opened beyond Tucuman as far as Chilcas. The branches from Dean Furnes to Chilicito, and from Chumbicha to Catamarca have the road-beds completed and the track laying has commenced. Beyond Chilcas towards Salta and Jujuy the work is still progressing, but there are many engineering difficulties to overcome, and not much has yet been accomplished. The line from Buenos Ayres to Mercedes, which is a link of the Transardine Railway, is now completed and opened to traffic, thus giving a through line from Buenos Ayres as far as Mendoza. Work continues to progress on the link from Mendoza towards Valparaiso, Chili, some of the track having already been laid, and by the end of the year it is expected that the Uspallata Pass of the Andes will be reached. For the construction of the railway from Monte Caseros to Corrientes and Posadas in the Misiones the necessary materials are now being received, and the work has commenced. The new line from Rosario, via Sunchales, to Tucuman is being rapidly pushed forward, and the rails are laid for fifty or sixty miles beyond Sunchales.

The last session of the Argentine Congress, in response to the recommendations of the President, made a very firm stand against the granting of any more charters or concessions with government guaranties, and the fact that numerous applications were made for new lines without such guaranties shows that the condition of the country is now so promising that capital is ready to embark in such enterprises without government aid.

MARTIN GARCIA BAR.

One of the causes which render the interior navigation of the Argentine Republic difficult and expensive is the existence of bars and other obstacles in the channels of the rivers. One of the most important of these difficulties is the bank which sets across the La Plata River near the island of Martin Garcia, and the series of bars in the Uruguay River. At the former, sometimes in season of low water as many as fifty vessels are estopped from passing further up the river, and have to await at anchor for a tide sufficiently high to float them over. It is now proposed to organize a commission, in connection with the Uruguayan Government, for the construction of certain works which would remove these obstructions to navigation. The Argentine Government will probably take the initiative in the matter.

PORT WORKS.

The Government mole at the city of Concepcion, on the Uruguay River, has at last been completed, together with a bridge and custom-house, at a total cost of $410,000. An iron mole is also in course of construction at San Nicolas, on the Paraná River, and works for the improvement of the channel in front of the town have been surveyed. The works for the improvement of the port of Rosario have recently been stopped, for the reason that recent changes and deviations in the channel of the Paraná have required some modifications in the plans. From what I learned on a recent visit to Rosario it would appear that a bar is forming along the city front that bids fair, unless wing-dams are properly constructed above the city, to send all the water to the other side of the river, thus rendering the port quite useless. The National Government proposes, if possible, to avert such a misfortune to that growing city.

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THE RIACHUELO PORT.

The canalization of the Riachuelo de Barracas, just south of the city of Buenos Ayres, continues to be actively carried on under the most advantageous conditions. In the course of last year the excavations amounted to over 1,000,000 cubic meters. The cost of the work up to the end of the last year, since the beginning, has been $6,500,000. The port dues, however, already give an interest of 6 to 8 per cent. on the capital expended, notwithstanding its incomplete state. The following table shows the proportion of sea-going vessels which last year took advantage of the facilities offered by the rules of the Riachuelo port, as appears by the last annual report of the maritime prefect:

Arrivals and departures of sea-going vessels.

Port.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
City Roads	2,057	579,181	583	924,354	708	392,285	620	1,294,901
Riachuelo port	714	518,467	222	292,227	821	467,344	144	461,344

Arrivals and departures of vessels in the river trade.

Port.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
City Roads	2,774	174,113	887	299,660	8,625	472,631	932	308,959
Riachuelo port	16,329	630,856	16,976	287,511	16,636	618,044	16,880	282,631

It will be seen from these figures that, while a very considerable amount of the foreign shipping now finds its way to the Riachuelo, the coasting or river trade is almost exclusively confined to that port. This is owing to the greater facilities it offers for handling cargoes. It now possesses 4,500 meters of moles, and is capable of receiving ships drawing 22 feet and 6,000 tons burden.

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BUENOS AYRES PORT WORKS.

The work on the Buenos Ayres port, which I have heretofore mentioned in my annual reports, has been prosecuted the past year without intermission, and the first section will probably be ready within the stipulated time. The basin is now quite completed to the proper depth, and the embankments are nearly finished. This basin is 1,095 meters long by 100 in width. About 300 meters of wharf are also completed, and large quantities of material are now on the ground for the rest of this work. The outside piers are likewise progressing to completion, and the piles are in position. The company having the contract has nearly 2,000 men employed on the works. The commerce of the city is looking forward with great interest to the day when the use of lighters and carts in the handling of cargoes will be done away with forever.

THE RIVER OR INTERIOR COMMERCE.

The river commerce of the Argentine Republic, embracing the carrying trade of the Rio de la Plata, the Uruguay, and the Paraná rivers, with their various affluents, shows but little change with the returns of last year. I give a comparison of the two years below:

Class.	Arrivals.				Departures.			
	1886.		1887.		1886.		1887.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Sailing vessels.....	17,504	650,048	18,701	749,921	19,569	689,699	21,001	838,640
Steamers.....	7,297	1,986,406	6,124	1,485,091	7,895	1,898,203	5,822	1,621,053
Total.....	24,801	2,636,454	24,825	2,235,012	27,464	2,587,902	26,823	2,459,693

The average size of the sailing vessels in the river trade last year was 40 tons, the average size of the steamers was 260 tons.

INTERPROVINCIAL COMMERCE.

The interprovincial commerce by river during the year 1887 reached $73,821,583. For the seven years from 1881 to 1887, inclusive, the following are the comparative figures:

Movements of river commerce.

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Year.	Products of the country.	Imported merchandise.	Total.
1881	$7,856,311	$19,646,157	$27,502,468
1882	8,108,553	26,852,594	29,961,147
1883	11,255,977	25,394,370	36,650,347
1884	14,615,401	29,689,475	44,304,876
1885	17,556,491	31,382,385	48,938,876
1886	13,501,820	37,398,110	50,899,930
1887	29,897,027	43,924,556	73,821,583

Of the movement of the produce of the country by river conveyance from the interior the following articles were the most prominent:

Articles.	Quantity.	Value.
Native rum and alcohol ..... liters...	1,066,435	$126,971
Native sugar ..... kilograms...	6,991,474	908,892
Lime ..... hectoliters...	4,661,176	1,828,018
Coke ..... do.....	3,182,608	3,182,608
Macaroni ..... kilograms...	813,321	172,668
Biscuit and crackers ..... do.....	1,599,982	202,828
Flour ..... do.....	70,588,790	4,941,215
Soap ..... do.....	2,736,993	273,699
Flaxseed ..... do.....	13,153,699	657,685
Indian corn ..... do.....	75,796,037	1,515,921
Potatoes ..... do.....	27,641,693	1,105,668
Cheese ..... do.....	1,089,084	217,817
Sole-leathers ..... number...	14,995	119,960
Native tobacco ..... kilograms...	1,561,748	156,175
Wheat ..... do.....	57,633,683	2,305,347
Fire-wood	.....	161,740
Posts, unsplit ..... number...	1,646,975	494,093
Posts, split ..... do.....	930,314	465,207
Timber and beans	.....	817,201
Yerba maté ..... kilograms...	571,755	71,470

I may add, in regard to the river traffic, that it is now well provided with a number of fine steamers, arranged for passengers as well as freight, and furnished with all the modern improvements of Clyde-built vessels, including the electric light. The company which, having bought out all other interests, now has the exclusive control of the river trade of the Argentine Republic, is owned in Scotland, and its intention is to still further extend its field of operations by building a smaller class of steamers to navigate the smaller affluents of the Paraná River.

PROGRESS OF AGRICULTURE.

I have seen no estimate of the approaching harvest of the Argentine Republic, but there has been put down in seed a larger breadth of land than ever before, and the prospects at present for every variety of crop were never better. If no untoward events shall intervene to defeat the generous promises, the harvests of the present year will be the largest ever produced in the country. In wheat, maize, and linseed there is sure to be a very large sur-

plus for exports. The progress which agriculture is making all over the Republic is the subject of general comment, and already this country is appearing as a factor in the question of the bread supply of Europe. The following table gives a comparison of the shipments of crop products of the Argentine Republic since 1882:

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Articles.	1882.	1883.	1884.	1885.	1886.	1887.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Wheat	1,705	60,754	108,499	78,493	37,864	237,865
Flour	548	4,844	3,734	7,447	5,262	5,401
Indian corn	107,327	18,634	133,710	197,859	231,660	361,844
Linseed	23,351	23,061	33,991	69,426	37,689	81,208
Baled alfalfa	10,771	11,460	11,846	11,765	12,408	12,375
Barley	1,100	177	362	2,109	2,661	4,194
Pea-nuts	422	2,617	1,992	2,229	769	3,367

Owing to bad weather just before the maturing of the crops of 1887–8, and which considerably reduced the yield, the exports of the present year will show a decrease over those of 1887. The returns for the three quarters, up to September 30th, give the exports as follows: Flour, 4,559 tons; wheat, 172,353 tons; Indian corn, 147,932 tons; linseed, 39,573 tons; alfalfa, 6,813 tons; pea-nuts, 1,370 tons, etc.

Of the exports of flour during the year 1887, 3,167 tons went to Brazil, 1,095 tons to Germany, 410 tons to England, and the rest went to various ports. Of the wheat, 145,977 tons went to England, 43,486 tons to Belgium, 13,582 tons to Italy, 17,197 tons to France, 10,495 tons to Germany, and the balance to various ports. Of the Indian corn, 177,769 tons went to England, 98,868 tons to France, 27,646 tons to Belgium, 24,456 tons to Brazil, with various ports for the balance. The linseed nearly all goes to England, the pea-nuts to France for the manufacture of olive oil, and the baled alfalfa to Brazil.

THE MINING INDUSTRY.

There is nothing new or interesting to be said in regard to the mines and mining of the country. There is, as yet, almost nothing to show for the amount of money which of late years has been invested in costly mining machinery. The different gold-mining companies, and especially those owned abroad, are periodically publishing exaggerated reports of what they are doing and of the prospects of very speedily finding the precious metal in paying quantities. This is done, I suppose, either to keep up the drooping spirits of anxious stockholders, or in order that those who are carrying heavily may unload on others who may be induced to try their fortunes in an industry which, with all the parade which has been made about the existence of gold in the Argentine Republic, has never yet paid anything on the capital invested. The sure test by which may be learned what the various gold-mining companies are doing is the table of exports, for the reason that their product would be at once sent out of the country for refinement, etc.

The following are the shipments for last year:

	Kilograms.	Value.
Copper in bars	143,287	$57,315
Copper, mineral	4,110	1,644
Silver, mineral	106,780	53,090
Lead ore	156,936	12,554
Silver, pure	1,669	61,753
Total		186,356

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Thus far, however, for the year 1888, the returns show quite an increase in the shipments of minerals, and for the first time gold appears on the list of exports. I give below the nominal exports for the three quarters ending September 30:

	Kilograms.	Value.
Gold-dust	325,524	$55,101
Bismuth	35,072	140,288
Copper in bars	115,770	46,308
Tin	301,635	150,818
Silver metal	11,070	110,700
Copper, mineral	262,622	48,250
Silver, mineral	324,000	161,999
Lead, mineral	96,316	7,706
Silver, pure	12,837	447,969
Total		1,196,139

I think the gold referred to in the above table was the product of recent mining operations in Tierra del Fuego. The explorations made near the Bay of San Sebastian by Mr. Popper have developed the existence of valuable gold deposits in that vicinity, and he lately returned to that point with a full complement of miners and mining apparatus for a more extended survey. Several California miners, who spent some time in examining the country, have informed me that while there are a number of places where gold can be procured in limited quantities, yet they doubt, until there has been a more careful exploration, if any of the present diggings will pay expenses.

I do not surrender the opinion, which I have heretofore frequently expressed, that there are immense deposits of gold, as well as of nearly all the other valuable metals, in various parts of the Argentine Republic; but in order to facilitate their development it will require a more careful scientific investigation into the geology of the country than has yet been attempted by the Government.

In regard to coal, the discovery of which has already been heralded with unusual parade, nothing whatever has yet been done towards its exploitation; none of it has thus far been utilized. And so also with the immense petroleum reservoirs, which have been discovered in the provinces of Mendoza, Salta, and Jujuy. Companies to work these deposits have been formed, and to assist them in producing the home material a very high protective tariff has been placed on the article from the United States, but thus far the Argentine oil has not come upon the market.

THE NATIONAL FORESTS.

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The lumber of the United States, still in increased quantities, continues to supply the demand for building purposes. While there are forests of soft woods in the Argentine Republic, their distance from the sea-board or great rivers makes it impossible to market them as cheaply as they can be put down here from North American ports. The shipments to the River Plate, instead of gradually falling off, seem to increase every year. In 1885 the quantity of white and yellow pine received here from the United States was 9,550,329 square meters; in 1886 it was 10,789,016 square meters; in 1887 it was 14,579,326 square meters.

At present the Argentine forests only furnish the hard woods of commerce, the Gran Chaco and the Misiones, to say nothing of the upper interior provinces, offering inexhaustible supplies of the most exquisitely colored hard woods to be found in the world. Here in the country these woods, and particularly the *quebracho* and the *algoroobo*, instead of finding such uses as their fineness and susceptibility to polish especially render them adapted for, are only employed in supplying the heavy joists and beams in house and hydraulic constructions. It looks like a short-sighted, false economy to make use of these precious woods for such purposes. The demand for Argentine hard woods is gradually increasing among the cabinet-workers of Europe, but thus far the amount which finds a market abroad is very small when compared with the quantity that the Argentine Republic is able to furnish. The returns of shipments for the last four years: 1884, $394,343; 1885, $339,020; 1886, $326,623; 1887, $330,214..

If the quality and the intrinsic value of these woods were more generally known, I am sure there would be an increased sale of them in Europe. In the Paris Exposition there will be on exhibition a very large variety of the hard woods of the Argentine Republic, and it will be well worth the while of parties interested in the matter to examine for themselves the wonderful polish which they take and the marvelous coloring which they present. A special report on the woods of the Argentine Republic, which I made several years ago and which was published in No. 34 of CONSULAR REPORTS, furnishes an extended description of the most remarkable of these woods.

THE CATTLE INDUSTRY.

The "saladero" or cattle industry of the Argentine Republic continues to be depressed and unsatisfactory. Owing to the partial failure of markets abroad for the product a number of the cattle-slaughtering establishments have been closed during the last year. The shipments for 1887 are even less than for the previous year, and this in spite of the fact that the export duty was repealed for the express purpose of assisting the industry.

The following table gives a comparison of the cattle industry for the last three years:

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Articles.	1885.	1886.	1887.
Dry hides	$7,511,919	$6,267,592	$8,408,742
Salted hides	4,488,204	3,649,287	3,639,095
Jerked beef	4,204,077	3,738,820	2,398,424
Bones and bone-ash	782,464	1,715,158	788,777
Hide cuttings	80,485	74,468	70,844
Horns	159,896	149,431	182,026
Tallow	3,489,139	1,715,158	788,777
Extract of meats	56,548	169,991	75,888
Total	20,772,762	17,479,905	16,352,573

Except for the demand for ox and cow hides, which has continued during the year, especially in the United States, the showing would be still more unsatisfactory. The jerked beef has heretofore found a steady market in Brazil and Cuba, but as the demand is gradually decreasing the product also shows greatly reduced proportions. In 1886 the shipments amounted to 38,388 tons, and in 1887 they only reached 23,984 tons, of which only 5,734 tons went to Brazil and 7,830 tons to Cuba.

FRESH MEAT SHIPMENTS.

There has, however, during last year been an increased movement in fresh meat shipments, which now, with large freezing establishments at different points on the La Plata and Paraná rivers, have come to be one of the permanent industries of the country. While the business, however, continues to assume larger proportions, if we may infer from the reports of the companies engaged in the export, the profits are not yet at all satisfactory. The following are the comparative returns of shipments for the last four years of frozen carcasses:

	Quantity.	Official value.
1885	2,860,270	$75,323
1886	7,350,671	360,508
1887	12,038,889	963,112
Nine months of 1888	13,923,098	1,113,847

These shipments consisted entirely of mutton, and the greater part went to Liverpool and London, but they failed to find a market, except at figures which barely paid cost and expenses. I am advised that considerable of the meat was hardly in a marketable condition when it reached its destination. To act as a stimulus to the frozen meat export the Argentine Congress, at its last session, passed a law providing for a bounty to those engaged in the business the effect of which will doubtless be to put the trade on a more satisfactory basis.

SHIPMENTS OF CATTLE TO EUROPE.

This bounty law also applies to the shipments of live stock on the hoof, but it is very questionable if any benefit will ever accrue from it, owing to the great distance across the tropics which the cattle will have to be carried

to reach a market. Were there facilities for the proper stall feeding of the stock before starting with it, it might be able to stand the twenty-five or thirty days' sea voyage, but to undertake such a passage with cattle fresh from the grass does not seem to be at all feasible. To test the matter the Government, on its own account, proposes to pay the expenses of a trial shipment, and it is now making arrangements to this end. Of course, it will require steam-ships specially fitted up for the purpose and with a capacity to carry a very large number of each in order to reduce the cost and expense of shipment.

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THE WOOL PRODUCT.

For special causes, which I have stated in special reports, the sheep industry of the Argentine Republic has not for several years been in so flourishing a condition as it has been wont to enjoy. One of the lamentable drawbacks to the business of growing wool, which is the great and most important business of the country, is the disgraceful condition of the flocks. So little care is taken of them, so little money is expended in protecting them from the weather, that it is now the exception to see a bunch of sheep which is not suffering from foot-rot or scab, or both. In some portions of the "camp" it is no unusual thing for whole flocks to be afflicted with diseased feet, and sometimes so badly as to be scarcely able to drag themselves along on their knees. No effort is made to prevent or to cure this, as it does not directly interfere with the growth of the wool; but, as a matter of self-interest, the *estancieros* are generally solicitous to cure the scab, and the market is overrun with specifics for this purpose. But scab is a disease which is so readily propagated from flock to flock, feeding at different times over the same pasturage, that one careless sheep farmer has it in his power to spread the disease through a whole neighborhood. Until a law is passed which requires that scabby sheep shall be isolated and killed if permitted to run at large, there is not much hope for improvement in the condition of the Argentine flocks. The wool shipments for several years have shown but little change in their figures. As a matter of reference, as well as comparison, I give below the exports since 1880:

Year.	Exports of wool.		Exports of sheep-skins.	
	Tons.	Value.	Tons.	Value.
1880	97,145	$27,467,672	29,077	$5,455,327
1881	103,876	31,446,495	32,339	4,639,437
1882	111,009	29,978,960	22,353	4,231,718
1883	118,403	29,600,918	26,564	5,035,886
1884	114,344	32,005,819	24,938	5,484,952
1885	128,393	35,950,111	31,336	6,267,377
1886	132,130	31,711,604	35,312	6,350,731
1887	109,164	52,749,315	30,447	6,698,408

It will be observed, that with all the assurances which have been given out to the world in regard to the increase in the number of sheep in the Argentine Republic during the last few years, the wool clip is about the same

as it was eight years ago. And if it be true, as it is now officially computed, that there are 100,000,000 of sheep in the country, it will be further seen, from the amount of the shipments, that the average yield is only a little more than two pounds to the sheep. And this is wool in the dirt—two-thirds of it being dirt, and one-third of it being wool. In other words, taking the shipments of 1887 as the average annual product of the country, it is about 75,000,000 pounds of washed wool.

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SHIPMENTS OF THE YEAR 1887.

The following table shows the proportion of the clip of 1887, including sheep-skins, which was shipped to each country:

Country.	Wool, unwashed.		Sheep-skins, unwashed.	
	Quantity.	Value.	Quantity.	Value.
	Kilograms.		*Kilograms.*	
Germany	22,688,099	$6,806,430	1,642,419	$361,332
Belgium	23,192,667	6,957,800	2,877,044	632,950
Brazil	172,282	57,685	911	200
Chili	288	86	30	7
Spain	11,463	3,439	10,036	2,208
United States	4,000,633	1,200,190	24,924	5,483
France	51,276,586	15,382,976	19,221,175	4,228,659
Great Britain	.....	.....	2,709,268	596,039
Italy	1,971,117	591,333	2,578,041	567,169
Uruguay	269,826	80,948	510,735	112,272
Destination not named	3,884,675	1,165,402	873,134	192,089
Total	109,464,383	21,749,315	30,447,716	6,698,408

OUR PROHIBITIVE TARIFF AGAINST ARGENTINE WOOLS.

The shipments to the United States were exclusively of the long carpet wools from Cordoba, it being the only class that it is possible to send to our market, under our tariff law, at a profit. Our tariff, so far as the clothing and finer qualities are concerned, is prohibitive. While those from Australia can come in, those from the Argentine Republic, owing to the greater amount of grease and dirt which they contain, are quite excluded, our tariff laws making no allowance or reduction whatever for such excess. I referred at length to this discrimination against the Argentine Republic in favor of Great Britain in my annual report of 1886. It appears that the amount of dirt and grease in the wools of the Argentine Republic reaches to more than 70 per cent., while the wools of Australia and New Zealand have only about 50 per cent. In other words, while the average yield of Argentine wools scoured is only 30 per cent., that of the other countries named is 50 per cent.

"If," as I have heretofore remarked, "the mills of the United States did not use foreign clothing wools at once, this would make no difference. The discrimination would be of no practical significance. But they do use foreign wools, and just such classes of clothing wools as the Argentine Republic can furnish; and owing to the more intimate trade relations which we are striving to cultivate with the latter country, we should avoid even the appearance of favoring other nations to the prejudice of the Argentine Republic."

ARGENTINE TRANSIT TRADE.

The transit trade of the Argentine Republic for the year 1887 will be seen from the following table:

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Country.	Ingress.	Egress.	Total transit.
Bolivia	6,449,725	172,521	6,622,246
Brazil	5,541	848,919	854,460
Chili		4,325	4,325
Paraguay	31,925	489,299	521,224
Uruguay	873,054	221,269	1,094,323
Total	7,360,245	1,736,333	9,096,578

The ingress from Bolivia consisted exclusively of silver metal and other minerals en route for England. In all other cases the ingress and egress were general merchandise.

THE CARRYING TRADE OF THE ARGENTINE REPUBLIC.

The carrying trade of 1887 of the Argentine Republic with foreign nations, compiled from returns published by the national statistical office, was as follows:

Class of vessels.	Arrivals.		Departures.		Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Sailing vessels	5,694	1,010,731	3,940	795,623	9,634	1,806,354
Steamers	6,607	3,460,870	5,584	2,928,346	12,191	6,389,216
Total in 1887	12,301	4,471,601	9,524	3,723,969	21,725	8,195,570
Total in 1886	11,015	3,515,290	8,243	3,153,389	19,258	6,668,679
Increase	1,286	956,311	1,281	570,580	2,467	1,526,891

But the progressive increase which has taken place in the foreign navigation of the Argentine Republic will be better understood by a glance at the totals of arrivals and departures of vessels during the last ten years. For this purpose I have compiled from official sources the following tables:

Arrivals of vessels for ten years.

Year.	Sailing vessels.		Steamers.		Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
1878	1,262	280,223	1,200	616,409	2,462	806,632
1879	1,531	311,008	1,854	744,054	3,385	1,055,062
1880	2,311	308,461	2,524	878,841	4,835	1,187,302
1881	3,412	413,618	2,542	905,801	5,954	1,318,700
1882	3,031	423,127	3,040	1,104,927	6,071	1,528,054
1883	3,445	517,070	3,626	1,437,018	7,071	1,954,088
1884	5,231	733,659	5,747	2,278,704	10,976	3,012,363
1885	4,908	771,583	6,671	2,829,726	11,579	3,601,309
1886	4,727	764,238	6,288	2,751,052	11,015	3,515,290
1887	5,694	1,010,731	6,607	3,460,870	12,301	4,471,601

Departures of vessels for ten years.

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Years.	Sailing vessels.		Steamers.		Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
1878	821	256,469	390	410,120	1,211	666,589
1879	826	273,686	1,689	703,748	2,515	977,434
1880	1,147	231,990	2,233	823,290	3,380	1,056,280
1881	2,500	323,120	2,300	843,116	4,800	1,166,236
1882	2,023	367,925	2,742	1,080,214	4,765	1,448,139
1883	2,263	424,124	3,172	1,318,201	5,435	1,742,325
1884	2,732	589,269	5,455	2,263,023	8,187	2,852,292
1885	2,474	600,858	6,549	2,748,803	8,990	3,349,661
1886	2,697	590,941	5,546	2,562,448	8,243	3,153,389
1887	3,940	795,623	5,584	2,928,346	9,524	3,723,969

The rapid increase of steam navigation over sailing vessels, which the above tables exhibit, in the foreign carrying trade of the Argentine Republic can not but attract attention. In 1878 the steam tonnage stood for 68 per cent. of the whole amount, while that of sailing vessels for 32 per cent. Now the steam tonnage stands for about 80 per cent. of the whole amount and that of sailing vessels for 20 per cent.

The following table shows the arrivals and departures of sailing vessels and steamers, as compiled from the returns published by the national statistical office:

Arrivals and departures of sailing vessels and steamers for each port.

Ports.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Bahia Blanca	12	5,532	.....	.....	18	7,527	.....	.....
Buenos Ayres	3,358	704,036	1,542	1,278,668	1,325	398,744	1,769	1,226,671
Compana	65	16,770	.....	.....	50	14,566	.....	.....
Concepcion	43	1,538	398	136,469	24	968	272	99,099
Colon	109	3,941	503	186,794	79	5,968	506	185,737
Concordia	245	12,596	653	203,981	216	15,367	671	229,493
Gualeguay	20	1,079	.....	.....	22	6,073	.....	.....
Gualeguaychú	96	4,390	333	128,679	109	4,726	328	121,800
La Pas	6	612	277	95,926	10	2,670	213	95,845
La Plata	1,047	136,214	219	7,553	1,358	140,944	219	7,553
Monte Casares	39	683	93	9,429	37	649	91	9,588
Paraná	25	2,937	237	83,488	19	1,738	152	146,871
Rosario	278	94,664	510	559,158	248	99,302	420	280,324
San Nicolas	14	3,576	126	176,333	20	8,062	120	169,527
Santa Fé	49	10,717	20	25,800	70	21,436	6	6,484
Zarate	13	5,893	1	1,293	17	7,620	19	22,519
Bella Vista	.....	.....	237	79,793	.....	.....	232	78,176
Corrientes	.....	.....	247	83,698	.....	.....	9	3,624
Goya	.....	.....	206	67,820	.....	.....	194	65,328
Other ports	275	5,353	1,005	335,008	318	59,263	356	179,310
Total	5,694	1,010,731	6,607	3,460,870	3,940	795,623	5,584	2,928,346

Arrivals and departures from each country.

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To and from—	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Germany	41	17,861	151	211,211	3	1,295	140	209,081
Asia	3	2,620	.....	.....	26	13,359	.....	.....
West Indies	4	934	.....	.....	321	162,117	12	16,666
Belgium	31	13,827	130	148,620	12	5,024	97	137,735
Brazil	92	18,956	184	30,990	182	58,508	188	36,225
Canada	44	28,043	.....	.....	3	1,685	.....	.....
Chili	2	529	3	3,758	56	57,936	5	9,256
Spain	48	22,517	43	53,170	10	4,199	12	13,844
United States	316	198,671	7	6,762	169	112,868	12	12,501
France	96	39,370	172	264,968	25	12,541	221	420,108
Norway	7	3,689	.....	.....	.....	.....	.....	.....
Paraguay	247	14,219	1,269	391,217	213	15,712	1,332	413,145
Great Britain	662	333,719	363	725,333	374	163,467	322	443,964
Sweden	1	59	.....	.....	1	473	.....	.....
Uruguay	4,036	294,910	4,186	1,461,948	2,499	185,654	3,170	1,081,473
Italy	20	8,461	99	163,893	2	1,124	73	131,822
Portugal	2	1,565	.....	.....	.....	.....	1	691
South Africa	.....	.....	.....	.....	1	379	.....	.....
Mexico	.....	.....	.....	.....	1	503	.....	.....
Peru	.....	.....	.....	.....	4	3,480	1	1,845
Venezuela	.....	.....	.....	.....	2	818	.....	.....
Other countries	42	6,181	.....	.....	24	11,236	.....	.....
Total	5,694	1,010,731	6,607	3,460,870	3,940	795,623	5,584	2,928,346

The following table, also compiled from the same source, gives the arrivals and departures of both sailing vessels and steamers according to nationality:

Arrivals and departures according to nationality.

Flag.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German	86	33,452	161	220,449	102	46,746	164	232,072
Belgian	.....	.....	28	38,303	.....	.....	27	37,634
Brazilian	43	1,696	124	24,692	43	2,043	111	18,898
Spanish	55	12,084	30	35,060	36	9,555	23	29,730
French	13	6,169	424	436,048	14	6,381	551	487,389
English	422	222,713	2,546	1,666,687	355	193,953	1,890	1,203,006
Italian	284	123,791	95	150,795	227	110,673	81	134,329
Argentine	2,699	214,540	2,805	825,861	1,919	142,557	2,470	737,930
United States	74	42,509	.....	.....	60	40,174	.....	.....
Norwegian	390	198,635	6	1,725	331	143,419	3	2,480
Paraguayan	161	6,104	84	12,898	116	4,419	72	9,348
Uruguayan	1,256	58,272	297	40,469	610	30,185	188	34,458
Not classified	211	90,766	7	8,883	127	65,548	4	4,403
Total	5,694	1,010,731	6,607	3,460,870	3,940	795,623	5,584	2,928,346

INTERNATIONAL RIVER NAVIGATION.

As I have explained in a former report, it must not be supposed that the large amount of tonnage represented in the foregoing tables was entirely ocean commerce. From the last preceding table, giving the arrivals and departures according to flag, it will be seen that a very large proportion of what is classified as Argentine foreign shipping comes under the Argentine, Uruguayan, Paraguayan, and Brazilian flags. None of the tonnage thus represented is engaged in ocean navigation, but is employed in what is called the coasting trade along the La Plata, Paraná, Uruguay, and Paraguay rivers, between the various ports of the Argentine Republic and those of the opposite shores, belonging to Uruguay, Paraguay, and the interior provinces of Brazil. To get at the exact figures of the actual ocean navigation of the Argentine Republic it is necessary to deduct all this international river commerce from the total figures and only put down the balance as ocean commerce, as follows:

Ocean and international river navigation.

Commerce.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
International river trade.....	4,159	288,602	3,210	903,918	2,688	179,234	2,841	800,534
Ocean trade	1,535	1,722,129	3,397	2,556,952	1,252	616,389	2,743	2,127,812
Total	5,694	2,010,731	6,607	3,460,870	3,940	795,623	5,584	2,928,346

By thus separating the international river navigation from that of the interoceanic it will be seen that the figures of the latter are considerably less than would be inferred from a casual glance at the official returns. The average size of the sailing vessels engaged in the international river trade was about 65 tons, while the average size of those engaged in the ocean trade was 500 tons. The average size of the steamers engaged in the international river trade was 275 tons, while the average size of those engaged in the ocean trade was 750 tons.

NO AMERICAN STEAMERS HERE.

It will once more be observed that during the year 1887, as has been the case in all the previous years, the flag of the United States does not figure in the tables of arrivals and departures of steamers. No merchant steamer bearing the ensign of our country ever appears in Argentine waters. The official returns inform us that during the year twelve steamers sailed from this country for the United States and that seven steamers from the United States arrived here. The latter were not regularly engaged in the trade, but were "ocean tramps," chartered to bring cargoes of kerosene to the River Plate.

while the departures were cargo steamers belonging to the Lamport & Holt line, which for several years have once a month made regular voyages to New York. None of these, however, ever return direct, but cross over to Liverpool, whence they make their return to Buenos Ayres. Thus they are of no possible assistance to American shippers seeking a market for their merchandise in the River Plate.

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SAILING VESSELS FROM THE UNITED STATES.

The number of vessels which arrived here from the United States during 1887 was 316, with a total tonnage of 198,671 tons. Of these only 74, with a total tonnage of 42,509 tons, carried the United States flag, while 242 vessels, with a tonnage of 157,162 tons, belonged to other nationalities. In other words, three-fourths of the sailing vessels which brought cargoes from the United States during 1887 were under foreign flags. The reason for this, as I have time and again explained, is not because we have no vessels suitable for the Argentine trade. On the contrary, our merchant ships, in build, staunchness, and speed, are far superior to those which have obtained the control of the carrying trade between the Argentine Republic and the United States. But our merchants and ship-brokers will not charter them at fair rates when they can obtain cheaper, and for lump-sums, the miserable old hulks of Norway and Italy. Of course, a very large percentage of their cargoes, when delivered here, are found to have been damaged in the transit; but of what importance is this to the charterers so long as the United States underwriters persist is giving these unseaworthy vessels a class, and then cheerfully pay all the damages for cargoes delivered in an unmerchantable condition? I repeat what I have heretofore said, that "if our underwriters were a little less anxious for all the business that offered and would make use of a little more judgment in these cases by establishing rates which discriminate against unseaworthy bottoms, a stop would be put to this phase of our carrying trade," and first-class American ships would once more have a chance.

FOREIGN COMMERCE OF THE ARGENTINE REPUBLIC.

The imports of the year 1887 exceed those of 1886 by $21,943,380. The exports of 1887 exceed those of 1886 by $14,386,979. The imports of 1887 are greater than the exports by $32,930,305. The following is a comparison of the commerce of the last two years:

Commerce.	1886.	1887.	Increase.
Imports	$95,408,745	$117,352,125	$21,943,380
Exports	69,834,841	84,421,820	14,586,979
Total	165,243,586	201,773,945	36,530,359

From the returns published by the national statistical office I am enabled to compile the following table showing the imports and exports of each custom-house in the country:

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Imports and exports of each custom-house.

Custom-house.	Imports.	Exports.	Total.
Ajo	$2,806	$87,854	$90,660
Alvear	8,279	6,657	14,854
Baradero	31,009	108,785	139,794
Bahia Blanca	179,175	1,119,757	1,298,952
Bella Vista	115,216	38,235	153,451
Buenos Ayres	93,319,121	53,124,504	146,443,625
Compana	611,026	1,200,339	1,811,365
Colon	76,100	521,953	598,053
Concepcion	383,973	196,127	580,100
Concordia	768,999	2,103,725	2,872,724
Corrientes	238,853	16,257	255,100
Chuput	108,159	.....	108,159
Diamante	21,749	423,822	445,571
Empedrado	12,625	97,200	109,825
Esquira	49,549	28,895	78,444
Formosa	13,320	.....	13,320
Goya	92,860	93,163	186,025
Galeguay	131,207	582,432	713,629
Galeguaychú	244,463	979,620	1,224,083
Helvecia	.....	64,566	64,566
Jujuy	319,612	78,246	397,858
La Pas	67,274	144,410	211,684
La Plata	1,127,912	71,794	1,190,706
Mendoza	42,803	468,168	510,071
Monte Caseros	63,540	110,414	173,954
Paraná	650,047	47,147	694,194
Paso de los Libres	28,362	2,370	30,732
Patagones	.....	5,044	5,044
Rosario	16,172,687	13,582,939	29,755,626
Salta	183,823	109,019	292,842
Santa Fé	1,549,510	2,420,658	3,970,168
San Gerónimo	.....	12,672	12,672
San Juan	5,890	571,850	577,740
San Lorenzo	.....	1,297,819	1,297,819
San Nicolas	398,953	2,934,175	3,333,128
San Pedro	2,598	806,948	808,546
Santo Tomé	9,672	13,285	22,957
Trinchera	8,438	307,905	316,343
Victoria	34,785	.....	34,785
Zaraté	277,792	643,064	920,856
Total	117,352,125	84,421,820	201,773,945

From this table it will be seen that the great bulk of the foreign commerce of the Argentine Republic continues to flow in ever increased proportions through the port of Buenos Ayres, the port of Rosario following next with an amount greater than that of all the remaining ports put together.

The foreign commerce of the Argentine Republic for 1887 was distributed among the different countries of the world as follows:

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Countries.	Imports.	Exports.	Total.
Southern Africa	.....	$11,851	$11,851
Germany	$12,108,456	9,835,754	21,944,210
West Indies	5,942	783,296	789,238
Belgium	10,947,955	12,111,531	23,059,486
Bolivia	67,996	191,290	252,086
Brazil	2,517,943	1,841,112	4,359,055
Canada	71,142	.....	71,142
Chili	16,195	1,150,576	1,266,771
Spain	5,005,699	1,321,203	6,326,902
United States	11,004,553	5,938,808	16,943,361
France	22,743,550	24,871,354	47,614,904
Italy	7,037,741	3,107,113	10,144,854
Holland	432,128	13,250	445,378
Paraguay	1,307,923	423,795	1,731,718
Portugal	61,783	14,517	76,300
Great Britain	34,779,219	17,085,001	51,864,220
Sweden	30,499	.....	30,499
Uruguay	6,507,934	2,360,005	8,867,939
All other countries	2,712,667	3,361,364	6,074,031
Total	117,352,125	84,421,820	201,773,945

The imports of the Argentine Republic for 1887, compared with those of 1886, have increased from the following countries:

Country.	Increase.	Country.	Increase.
Germany	$2,063,581	Italy	$2,390,504
Belgium	3,226,038	Portugal	7,885
Brazil	208,979	Great Britain	1,346,559
Spain	1,288,104	Sweden	30,499
United States	3,331,269	Uruguay	569,884
France	5,741,512		

From the following countries the imports have diminished:

Country.	Decrease.	Country.	Decrease.
West Indies	$14,161	Holland	$348,119
Bolivia	261,209	Paraguay	105,817
Canada	723,648	Other countries not named	436,628
Chili	52,503		

The exports of the Argentine Republic for 1887, compared with those of 1886, have increased to the following countries:

Country.	Increase.	Country.	Increase.
South Africa	$5,080	France	$2,529,17
Germany	3,884,846	Italy	630,675
Belgium	1,186,794	Holland	13,250
Bolivia	10,298	Paraguay	4,547
Spain	154,756	Great Britain	7,913,152
United States	2,358,402	Other countries not named	160,140

During the same period the exports have decreased to the following countries:

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Country.	Decrease.	Country.	Decrease.
West Indies	$349,444	Portugal	$303,177
Brazil	102,101	Sweden	31,926
Chili	1,168,274	Uruguay	407,611

The total trade, including imports and exports, for 1887, compared with that of 1886, has increased from the following countries:

Country.	Increase.	Country.	Increase.
South Africa	$5,080	United States	$5,689,671
Germany	6,948,427	France	8,270,783
Belgium	4,312,932	Italy	3,021,179
Brazil	106,888	Great Britain	9,359,710
Spain	1,442,860	Uruguay	160,693

The following countries show a decrease in the total amount of their trade with the Argentine Republic for 1887, compared with the previous year:

Country.	Decrease.	Country.	Decrease.
West Indies	$365,616	Paraguay	$101,276
Bolivia	260,911	Portugal	295,292
Canada	723,648	Sweden	1,427
Chili	1,220,777	Other countries not named	3,286,479
Holland	334,869		

From the figures presented in the above tables of imports and exports it appears that in the amount of imports Great Britain, by great odds, still continues at the head of the category, while France comes second, followed at a respectful distance by Germany, the United States, and Belgium, in their order.

In exports, France continues to occupy the first place, followed in their order by Great Britain, Germany, and the United States.

In total trade, Great Britain remains in the lead, with France a good second, Belgium third, Germany fourth, and the United States fifth. The actual percentage is as follows: Great Britain, 25.70; France, 23.69; Belgium, 11.42; Germany, 10.87; United States, 8.39; Italy, 5.02; Uruguay, 4.39; various, 10.61; total, 100.

DETAILS OF FOREIGN COMMERCE.

From the returns made to the Argentine national statistical office I have compiled the following table, which gives the amount and value of each article of import and export of the Argentine Republic for the year 1887:

Imports.

Articles.	Quantity.	Official value.
Animals:		
Asses.....number...	20	$650
Horses .....do.....	1,506	102,744
Hogs .....do.....	312	2,470
Sheep.....do.....	43,316	29,020
Mules.....do.....	1,220	18,300
Horned cattle .....do.....	942	156,393
Total	.....	309,577
Groceries and comestibles:		
Olive oil .....kilograms...	5,646,026	1,976,109
Olives .....do.....	479,919	76,445
Starch.....do.....	890,700	148,072
Rice.....do.....	16,099,471	1,448,941
Saffron .....do.....	4,329	60,610
Sugar, refined.....do.....	22,912,687	4,353,407
Sugar, other classes.....do.....	18,066	2,349
Fish, dried.....do.....	915,450	154,709
Cocoa .....do.....	160,406	41,804
Coffee .....do.....	3,026,214	875,608
Cinnamon.....do.....	20,681	10,754
Preparations of meat .....do.....	151,309	80,481
Barley .....do.....	435,806	21,205
Chocolate.....do.....	120,668	120,668
Cocoa.....do.....	76,226	37,613
Confectionery and dulces .....do.....	239,045	137,216
Spices and condiments .....do.....	1,386,889	396,355
Farina.....do.....	3,548,432	177,422
Preserved vegetables .....do.....	257,466	27,996
Macaroni .....do.....	118,204	22,596
Fruits, fresh.....	.....	68,898
Fruits, dried and preserved ..... kilograms...	1,771,338	328,880
Flour, wheat.....do.....	5,230	418
Flour of other grades.....do.....	106,608	21,991
Hams.....do.....	216,941	117,147
Vegetables, dried and canned .....do.....	1,484,609	202,594
Corn.....do.....	2,590	38
Butter .....do.....	18,298	9,516
Lard.....do.....	188,162	58,578
Honey.....do.....	5,341	802
Biscuit and crackers.....do.....	55,235	16,648
Figs .....do.....	300,863	46,210
Raisins .....do.....	547,224	117,677
Fish, preserved.....do.....	1,509,581	580,145
Cheese.....do.....	1,697,961	1,073,629
Salt, table.....do.....	954,717	57,283
Sausages..... .....do.....	36,698	24,106
Tea.....do.....	624,789	624,789
Bacon.....do.....	5,141	2,417
Wheat.....do.....	42,433	1,697
Yerba, Paraguayan.....do.....	6,519,731	912,762
Yerba, Brazilian.....do.....	13,565,427	1,492,198
Total	....	15,924,843

Imports—Continued.

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Articles.	Quantity.	Official value.
Liquors:		
Mineral waters, bottled....dozen...	58,202	$98,950
Do....do....	39,072	234,432
Do....liters...	238,920	136,078
Bitters....do....	27,565	11,577
Bitters, bottled....dozen...	68,832	412,992
Cafia....liters...	483,307	72,500
Beer....do....	52,812	8,978
Beer, bottled....dozen...	280,997	654,723
Chartreuse, bottled....do....	4,464	66,960
Cider, bottled....do....	714	1,499
Cider....liters...	1,417	510
Brandy....do....	232,129	83,566
Brandy, bottled....dozen...	150,475	902,850
Gin, bottled....do....	7,054	21,162
Gin....liters...	2,419,571	405,447
Rum....do....	46,495	18,597
Rum, bottled....dozen...	9,415	75,320
Whisky, bottled....do....	5,851	22,054
Whisky....liters...	12,494	4,996
Alcohol and other liquors....do....	345,483	115,850
Alcohol and other liquors, bottled....	....	138,720
Sirups....	....	6,336
Wines:		
Champagne....dozen...	20,122	166,406
Sherry....do....	3,988	31,940
Port....do....	24,359	194,872
Bordeaux....do....	35,478	212,868
Vermouth....do....	54,455	326,730
Do....liters...	31,477	9,444
Other classes....bottles...	21,169	99,916
Sherry, in casks....liters...	110,199	57,303
Port, in casks....do....	250,733	130,381
Bordeaux, in casks....do....	37,829,522	3,782,952
Other classes, fine, in casks....do....	51,371	18,608
Other classes, common, in casks....do....	69,516,179	6,951,618
Vinegar....do....	137,324	9,613
Vinegar, bottled....dozen...	1,150	1,725
Total....	....	15,488,437
Tobacco:		
Cigars, Havana....kilograms...	21,728	166,015
Cigars, other classes....do....	257,200	344,901
Cigarettes....do....	7,246	11,316
Tobacco, Havana....do....	65,417	34,099
Tobacco in the leaf....do....	4,608,730	960,553
Tobacco, Havana, cut....do....	67,730	54,184
Tobacco, other kinds, cut....do....	220,381	96,167
Snuff....do....	10,123	12,148
Total....	....	1,697,383
Woven goods, etc.:		
Oil-cloths....meters...	94,452	29,044
Matting....kilograms...	4,110	2,465
Shag....do....	587,860	474,984
Sackcloth....do....	9,960,949	1,992,190
Pack-thread....do....	2,067,230	1,550,400
Felt....do....	12,953	21,929
Sail-cloth....do....	257,606	251,381
Cassimeres of wool....do....	946,548	1,893,096
Cassimeres of other classes....do....	842,225	758,002

Imports—Continued.

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Articles.	Quantity.	Official value.
Woven goods, etc.—Continued.		
Ribbons, silk.....kilograms...	9,285	$232,125
Ribbons, other classes.....do.....	48,959	104,545
Cording, silk.....do.....	903	6,797
Cording, other classes.....do.....	3,801	8,225
Hair-cloth.....do.....	3,641	2,934
Laces, edgings, and tulles.....do.....	116,181	622,369
Tow cloth.....do.....	1269082	22,692
Plush, woolen.....do.....	25,781	51,562
Plush, other classes.....do.....	279,679	201,680
Flannel, woolen.....do.....	228,549	411,389
Flannel, other classes.....do.....	24,880	32,343
Thread, in carrots.....do.....	208,348	79,172
Thread, sewing.....do.....	1,831,337	444,174
Thread, silk.....do.....	6,795	107,020
Yarns.....do.....	103,812	139,348
Impermeable cloth.....do.....	24,250	12,125
Cordage.....do.....	1,226,610	250,231
Duck.....do.....	678,113	403,516
Wicking.....do.....	56,855	43,816
Billiard cloth.....do.....	3,286	12,402
Clothes-lines and small rope.....do.....	593,109	135,021
Hemp thread.....do.....	176,041	12,323
Soles for alpargata shoes.....do.....	854,769	256,430
Prunella.....do.....	7,517	15,159
Lace, gold and silver.....do.....	.....	25,824
Lace, silk.....do.....	17,777	68,884
Cotton goods.....do.....	7,181,859	8,078,595
Hempen goods.....do.....	97,939	44,603
Linen goods.....do.....	366,141	547,781
Woolen goods.....do.....	439,276	1,079,284
Mixed goods.....do.....	649,589	1,589,667
Silk goods.....do.....	55,131	796,568
Jute goods.....do.....	189,328	93,897
Do.....meters...	811	521
Velvet goods, silk.....kilograms...	1,437	22,900
Rubber goods.....do.....	98,147	36,947
Chintz and calico goods.....do.....	2,456,860	2,192,063
Total.....	.....	22,230,090
Clothing, etc.:		
Shirts for men.....dozen...	30,790	276,760
Shirts for women.....do.....	2,915	32,648
Undershirts, silk.....kilograms...	1,055	16,860
Undershirts, other kinds.....dozen...	370	1,024
Drawers, silk.....kilograms...	110	1,760
Drawers, other kinds.....do.....	985	2,867
Do.....dozen...	6,043	36,555
Cravats.....do.....	48,390	135,613
Gowns and skirts.....do.....	3,709	23,682
Collars and cuffs.....do.....	39,078	68,051
Corsets.....do.....	17,378	134,835
Hats and bonnets for women.....do.....	16,741	55,681
Gloves, silk and cotton.....do.....	5,656	10,746
Do.....kilograms...	2,961	29,814
Stockings, silk.....do.....	2,189	35,024
Stockings, other kinds.....do.....	764,754	1,236,662
Pocket handkerchiefs, silk.....do.....	22,336	255,298
Pocket handkerchiefs, other kinds.....do.....	262,095	466,145
Towels.....dozen...	143,104	191,163

Imports—Continued.

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Articles.	Quantity.	Official value.
Clothing, etc.—Continued.		
Ready-made clothing		$1,064,072
Umbrellas and parasols, number	83,792	89,810
Silk and felt hats, dozen	126,794	739,249
Various articles, cotton		902,998
Various articles, hemp		29,753
Various articles, linen		136,368
Various articles, woolen		408,642
Various articles, mixed		408,642
Various articles, silk		167,759
Various articles, other materials		27,289
Total		7,433,951
Drugs and chemicals:		
Sulphuric acid, kilograms	954,392	47,720
Muriatic acid, do	38,147	11,442
Nitric acid, do	11,161	3,094
Other acids, do		28,409
Linseed oil, do	627,245	125,449
Palm oil, do	138,698	31,900
Oil of other kinds, do		94,115
White lead, do	11,150	2,013
Alcohol, liters	140,135	22,090
Tar, kilograms	313,476	20,376
Alum, do	62,232	3,171
Liquid ammonia, do	50,335	17,583
Indigo, do	4,210	10,947
Sulphur, do	305,935	19,832
Turpentine, do	772,584	123,611
Varnish, do	151,413	88,710
Bicarbonate of potassa, do	1,121	647
Bicarbonate of soda, do	58,259	4,220
Benzine, liters	40,009	4,253
Blacking, kilograms	154,664	43,763
Borax, do	62,640	9,396
Chloride of lime, do	123,956	6,198
Carbonate of magnesia, do	1,858	743
Carbonate of potassa, do	18,847	3,770
Carbonate of soda, do	115,270	5,764
Glue, do	159,766	33,113
Colors, in powder, do	1,060,526	103,314
Colors, prepared, do	3,341,812	313,103
Fire-crackers, do	190,504	69,826
Dextrine, do	10,251	2,050
Stearine, do	34,535	10,360
Essences of all kinds		44,105
Specifics for curing sheep scab		190,261
Phosphorus, kilograms	2,115	2,538
Glucose, do	71,936	7,193
Gelatine, do	11,556	6,885
Gum, do	165,134	78,808
Glycerine, do	8,323	3,101
Soap, common, do	43,935	12,836
Soap, perfumed, do	129,138	66,737
Malt, do	1,703,421	204,410
Medical preparations		668,971
Perfumery		428,503
Rosin, kilograms	2,527,975	75,839
Potassa, do	15,078	3,015
Powder and other explosives, do	114,528	59,565
Various pharmaceutical products and substances		188,241

Imports—Continued.

Articles.	Quantity.	Official value.
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Drugs and chemicals—Continued.		
Various chemical products and substances		$515,255
Common salt ..... hectoliters	348,981	216,368
Calcined soda ..... kilograms	2,284,310	90,573
Caustic soda ..... do	267,842	18,749
Sulphate of iron ..... do	70,007	1,400
Sulphate of magnesia ..... do	4,145	290
Sulphate of quinine ..... do	40	2,200
Sulphate of lime ..... do	260,951	5,219
Printing-ink ..... do	88,416	19,451
Writing-ink ..... do	81,301	12,195
Tremintine ..... do	1,928	135
Vaseline, common ..... do	12,147	6,073
Total		4,188,998
Lumber and wooden ware:		
Pine ..... square meters	14,579,326	6,155,658
Walnut ..... do	112,393	112,393
Oak ..... do	56,220	44,976
Cedar ..... do	166,794	75,988
Mahogany ..... do	2,636	4,566
Rosewood ..... do	1,237	4,528
Quebracho ..... do	64,897	12,979
Other kinds of lumber ..... do	1,020,758	216,042
Trunks and boxes ..... number	330,431	60,687
Carts and carriages ..... do	277	104,896
Staves and casks		76,883
Musical instruments		136,622
Launches and boats		5,450
Furniture		952,268
Pianos ..... number	1,885	400,089
Walking sticks ..... dozen	3,422	12,691
Other articles of wood		365,160
Total		8,741,676
Paper and manufactures of:		
Writing-paper ..... kilograms	597,841	183,831
Drawing-paper ..... do	8,545	4,443
Printing-paper ..... do	2,758,797	717,287
Wall-paper ..... do	349,432	135,198
Wrapping-paper ..... do	2,400,739	561,858
Cover paper ..... do	93,470	46,735
Cigarette paper ..... do	324,001	275,400
Drying-paper ..... do	23,550	9,420
Sand-paper ..... do	4,197	13,412
Silk paper ..... do	24,905	9,861
Albums ..... dozen	2,478	14,849
Playing cards ..... gross	2,726	40,890
Pasteboard ..... kilograms	338,615	48,310
Papier maché		224,336
Other manufactures of paper		185,814
Books, blank ..... kilograms	286,912	165,442
Books, printed ..... do	376,872	376,872
Music ..... do	10,435	8,348
Engravings, prints, etc ..... do	67,754	52,389
Photographs, lithographs, etc		37,181
Total		3,111,876

Imports—Continued.

Articles.	Quantity.	Official value
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Leather and its products:		
Boots and shoes of leather.....dozen...	52,806	$388,265
Boots and shoes, cloth uppers.....do.....	15,069	39,790
Porte-monnaies, cigar cases, etc.....do.....	10,983	33,156
Porte-monnaies and traveling bags.....number...	1,899	5,493
Saddles.....do.....	1,607	19,122
Leather gloves.....dozen...	4,012	32,782
Harness.....	.....	131,526
Other articles of leather.....	.....	83,110
Goat skins.....kilograms...	913	545
Tanned skins, with hair.....	.....	7,785
Sole-leather.....kilograms...	12,506	20,605
Other leather.....	.....	991,004
Total.....	.....	1,753,183
Iron and manufactures of:		
Steel, unmanufactured.....kilograms...	483,088	64,023
Anchors of all sizes.....do.....	83,910	8,391
Needles of all kinds.....thousands...	36,097	19,052
Wire for fencing.....kilograms...	35,145,425	1,863,420
Wire for other purposes.....do.....	3,571,880	288,101
Arms and munitions.....	.....	343,306
Kitchen utensils.....	.....	966,158
Nails of all kinds.....kilograms...	2,462,203	188,265
Chains of all kinds.....do.....	559,040	66,583
Iron safes.....do.....	280,518	61,624
Iron tubing.....do.....	2,193,799	243,789
Cook and other stoves.....do.....	211,900	25,126
Cutlery.....	.....	405,752
Elastic springs.....kilograms...	467,686	115,465
Iron hooping.....do.....	1,871,341	79,735
Iron ornaments.....	.....	1,581,509
Iron, unmanufactured.....kilograms...	35,988,269	1,480,599
Iron tools and implements.....	.....	689,164
Iron furniture.....	.....	16,640
Steel pens.....gross...	80,676	16,244
Joists and columns.....kilograms...	19,802,917	792,117
Plows.....number...	17,585	173,206
Shellers.....do.....	1,395	34,797
Scythes.....kilograms...	460	239
Rakes.....do.....	33,467	10,916
Plowshares.....do.....	84,850	20,902
Sowers.....number...	35	1,334
Separators.....do.....	1,434	285,243
Thrashers.....do.....	377	366,343
Shovels, spades, and hoes.....kilograms...	390,007	96,996
Other implements, not otherwise specified.....	.....	87,392
Pumps.....number...	3,212	29,697
Sewing-machines.....do.....	24,440	371,632
Lithographic presses.....do.....	178	51,858
Other presses.....kilograms...	47,005	7,043
Other machinery and motors.....	.....	1,846,909
Other manufactures of iron, not specified.....	.....	1,659,797
Total.....	.....	14,359,366
Materials for construction of:		
Railways.....	.....	3,534,555
Gas.....	.....	211,418
Mines.....	.....	46,142
Sugar mills.....	.....	2,280

Imports—Continued.

Articles.	Quantity.	Official value.
Materials for construction—Continued.		
Tramways		$399,237
Telegraph		13,580
Telephones		67,863
Works at La Plata		481,093
Water-works		283,735
Total		5,039,903
Metals and manufactures of:		
Jewelry		797,289
Bronze in powder ..... kilograms	2,119	5,296
Artistic bronzes		1,632
Copper and bronze, unmanufactured ..... kilograms	71,949	28,780
Copper and bronze, manufactured		257,380
Tin composition, unmanufactured ..... kilograms	43,613	17,445
Tin composition, manufactured		938
Instruments, philosophical, etc		80,428
Instruments, musical		3,835
Tin in sheets ..... kilograms	1,729,842	155,688
Tin, manufactured		16,434
Metallic belting		692,833
Silver metal ..... kilograms	2,130	1,065
Laminated gold		26,704
Lead, unmanufactured ..... kilograms	951,301	76,204
Lead, manufactured		98,842
Gold watches ..... number	8,859	234,907
Silver watches ..... do	40,553	109,554
Clocks ..... do	43,330	68,763
Steelyards, scales, etc ..... do	5,704	36,540
Printing types ..... kilograms	62,368	32,512
Zinc, unmanufactured ..... do	1,695,256	156,491
Zinc, manufactured		34,266
Other metals and their manufactures		637
Total		3,015,263
Stone, glass, and ceramic products:		
Tiles, common ..... thousand	17,277	310,022
Tiles for paving ..... do	3,769	80,230
Glass bottles ..... dozen	556,143	166,840
Lime ..... hectoliters	10,852	7,922
Crystals for watches, etc		1,107
Glassware		525,245
Lamps, glass, porcelain, etc		409,128
Crockery ware		413,523
Marble, jasper, alabaster, etc., unworked		182,498
Marble, jasper, alabaster, etc., worked		19,617
Mosaics ..... square meters	41,615	83,117
Objects of art, statuary, etc		34,126
Precious stones, unset		169,347
Lithographic stones		3,304
Grindstones ..... kilograms	398,297	15,142
Building stone ..... square meters	346,109	692,214
Slate for roofing ..... do	23,616	9,356
Porcelain ware		276,856
Tiles, for roofing ..... thousand	5,303	265,150
Hydraulic cement ..... kilograms	28,977,759	579,555
Glass and crystal plate ..... square meters	526,905	243,071
Mirror glass ..... do	25,830	154,107
Total		4,727,861

Imports — Continued.

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Articles.	Quantity.	Official value.
Combustibles:		
Stearine candles ....kilograms...	708,401	$212,520
Other candles....do.....	2,402	2,170
Stone coal ....do.....	407,986,619	4,079,866
Coke....do.....	1,104,318	18,773
Wax matches....do.....	16,579	14,092
Wood matches....do.....	132,851	42,513
Kerosene....liters...	17,869,719	1,340,299
Total	....	5,710,163
Various manufactured articles, etc.:		
Fancy articles	....	1,086,952
Buttons ....gross...	416,778	138,881
Corks....kilograms...	248,481	86,971
Sponges .... do.....	5,704	25,455
Cases of metal, wood, leather, etc....dozen...	1,117	5,807
Gutta-percha articles....	....	18,602
Toys....	....	203,807
Pencils of all kinds....gross...	10,678	12,410
Hops....kilograms...	34,988	17,493
Religious ornaments, etc....	....	11,824
Paintings, etc....	....	20,766
Straw, rushes, etc., and their manufactures....	....	150,180
Live plants....	....	33,731
Leeches....	....	720
Seeds.... kilograms...	44,050	16,620
Utensils for apothecaries, etc....	....	108,420
Utensils for offices, etc....	....	111,939
Various articles, not elsewhere mentioned....	....	1,486,996
Total	....	3,537,555
Grand total of imports....	....	117,352,125

Exports.

Articles.	Quantity.	Official value.
Cattle and cattle products:		
Asses ....number...	6,200	$12,400
Horses....do.....	3,419	38,220
Hogs ....do.....	6	40
Sheep....do.....	29,413	42,884
Mules....do	6,445	103,178
Horned cattle ....do.....	70,707	1,415,625
Ox horns ....kilograms...	1,426,934	182,026
Hair....do.....	1,977,281	988,643
Goat-skins .... do.....	766,900	460,140
Kid-skins....do.....	388,650	699,569
Sheep-skins (unwashed)....do.....	30,447,716	6,698,408
Ox and cow hides (dry)....number...	2,508,500	8,408,742
Ox and cow hides (salted)....do.....	699,837	3,639,095
Horse hides (dry)....do.....	115,618	231,236
Horse hides (salted) ....do.....	209,252	523,128
Hide cuttings	1,180,729	70,844
Wool (unwashed) ....kilograms...	109,164,383	32,749,315
Total	....	56,263,493

Exports—Continued.

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Articles.	Quantity.	Official value
Agricultural products:		
Bran ..... kilograms	4,194,777	562,324
Canary seed ..... do	600,085	36,005
Barley ..... do	825,816	16,516
Fresh fruit ..... do	.....	5,237
Flaxseed ..... do	81,208,176	4,060,409
Maize, or Indian corn ..... do	361,844,305	7,236,886
Pea-nuts ..... do	3,367,380	134,695
Potatoes ..... do	191,240	7,650
Baled hay ..... do	12,375,411	148,506
Beans ..... do	33,930	1,697
Turnip seed ..... do	940,821	37,633
Other seeds ..... do	133,785	5 351
Wheat ..... do	237,865,925	9,514,635
Total	.....	21,268,141
Industrial products:		
Animal oils ..... kilograms	131,069	18,350
Sugar ..... do	6,608	860
Meat and jerked beef ..... do	23,984,243	2,398,424
Meat (concentrated) ..... do	33,029	8,257
Frozen mutton carcasses ..... do	12,038,889	903,112
Extract of meat ..... do	37,944	75,888
Macaroni ..... do	68	14
Guano ..... do	331,175	9,935
Meat powder ..... do	61,000	15,250
Flour ..... do	5,402,096	378,076
Tongues (salted or preserved) ..... do	139,933	20,990
Pepsin ..... do	25,100	25,100
Cheese ..... do	4,445	889
Grease and tallow ..... do	7,169,649	788,777
Various congealed meats ..... do	128,664	8,837
Total	.....	4,712,759
Products of the forests:		
Vegetable carbon ..... hectoliters	30,720	30,720
Sleepers ..... number	6,094	18,282
Nandurbury posts ..... do	109,677	14,258
Various woods	.....	149,675
Split pickets ..... do	225,456	67,636
Pickets ..... do	91,077	44,548
Quebracho lumber ..... square meters	12,470	5,095
Total	.....	330,214
Products of the mines:		
Copper (bars) ..... kilograms	143,287	57,315
Copper (mineral) ..... do	4,110	1,664
Silver (mineral) ..... do	106,780	53,090
Lead (mineral) ..... do	156,936	12,554
Virgin silver ..... do	1,699	61,753
Total	.....	186,356
Products of the chase:		
Carpincho skins ..... number	6,998	2,799
Nutria skins ..... kilograms	943,047	471,523
Various skins	.....	96,313
Ostrich feathers ..... kilograms	28,006	39,208
Total	.....	609,843

Exports—Continued.

Articles.	Quantity.	Official value.
Various articles and products:		
Bones and bone-ash ..... kilograms...	23,546,972	$296,635
Wax ..... do.....	4,539	1,490
Old iron ..... do.....	1,382,000	27,640
Honey ..... do.....	32,920	3,951
Dried blood ..... do.....	34,632	1,486
Other articles of Argentine production	.....	516,586
Various re-exported articles	.....	103,296
Total	.....	1,051,014
Grand total of exports	.....	84,421,820

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IMPORTS AND EXPORTS OF GOLD.

In the foregoing details of the foreign commerce no account is taken of the imports and exports of coined money. The imports of gold in 1887 were $9,748,596, while the exports were $9,877,185. So that, if we include these items, as does the minister of finance in his report, the total imports in 1887 will amount to $127,100,721, while the total exports will reach $94,299,005; total commerce, $221,399,706. Comparing the imports and exports of coined money for the last two years the minister gives the following result:

Movements of coined money.	1886.	1887.	Total.
Imports	$20,635,662	$9,748,596	$30,384,258
Exports	8,368,018	9,877,185	18,245,203
Excess	12,267,644	128,589	12,139,055

Thus the minister figures that there is now $12,139,055 more coined money in the country than there was in 1886. These importations of gold, it will be borne in mind, are the result of the late loans made by the Government in England for the purpose of internal improvements, banks, etc.

But, according to the general laws of trade, it can not be very long before what remains here of these imports of gold will find its way back to meet the balances, which go on increasing against the country.

EXCESS OF IMPORTS.

Leaving out of the account, however, this influx of gold into the country, the importations of merchandise for 1887 are much greater than those of any year since the organization of the Government. In every department of trade there has been an increase.

The following table, which I have compiled from the custom-house returns, gives a comparison of the imports of 1887 with those of the previous year:

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Comparison between 1886 and 1887.

Classes of imports.	1886.	1887.	Increase.
Animals on the hoof	$157,072	$409,577	$252,505
Alimentary substances	12,865,787	15,924,843	3,059,056
Liquors	10,691,123	15,488,437	4,797,314
Tobacco	1,581,380	1,679,388	98,003
Woven goods	21,994,613	22,230,090	235,477
Ready-made clothing and confections	3,678,566	7,433,951	3,756,385
Wood and manufactures of	6,878,167	8,741,676	1,863,509
Paper	2,409,618	3,111,876	621,258
Leather, etc	1,328,520	1,753,183	424,663
Iron and iron ware	12,920,715	14,359,366	1,438,651
Building materials	5,102,777	5,039,903	62,874
Materials for other purposes	2,683,267	3,015,263	331,996
Glass and crockery ware	4,053,465	4,727,861	674,396
Combustibles—coal and light	5,471,661	5,710,163	238,502
Various articles	2,666,236	3,508,472	842,236
Chemicals, drugs, etc	3,697,015	4,188,998	481,983
Ships' stores, etc	29,709	29,083	626

As I have said on a former occasion, it is very evident that "the imports are out of all proportion to a healthy condition of trade." The country is persistently buying more than it sells, and consuming more than it produces. The difference must be met by sending abroad the gold that is in the Republic, draining it, as it were, of the very means which the Government seeks by loans to provide for its industrial development. When the power of the Government to borrow is exhausted the condition of the country will be unfortunate, unless meanwhile something is done to stimulate production and thus increase the exports.

ANALYSIS OF THE EXPORT TRADE.

That much is being done in this direction, however, is evident from the last trade returns. As has been seen from the tables already given the exports of 1887 are $14,586,979 greater than those of 1886, an increase of more than 20 per cent. on the previous year. The principal increase was in the following products:

	Increase in quantity.	Increase in value.
Ox and cow hides, dry (number)	709,898	$2,202,458
Linseed (kilograms)	43,493,775	2,233,988
Wheat (kilograms)	200,001,512	8,004,259
Frozen sheep (kilograms)	4,416,254	581,646

In the following articles, however, there was a decrease:

	Decrease in quantity.	Decrease in value.
Ox and cow hides, salted (number)	115,975	$505,564
Jerked beef (kilograms)	17,626,827	1,762,682
Grease and tallow (kilograms)	5,573,003	931,006

In wool the quantity exported during 1887 was 22,986,113 kilograms less than in 1886, but in 1887 its official value was greater, and hence it shows an increase of $2,233,988 in value.

The relative value of the different classes of exports of 1887, compared with those of 1886, was as follows:

Articles.	1886.	1887.	Difference.
Products of the cattle industry	$52,903,347	$55,282,102	*$2,678,755
Agricultural products	8,341,336	21,257,320	*12,915,984
Industrial products	6,600,257	4,239,934	†2,360,323
Timber exported	326,623	277,944	†48,679
Minerals	155,029	186,150	*31,121
Products of wild animals	351,021	606,738	*253,537
Various exports	1,514,538	1,802,082	*432,496

*More. †Less.

The wonderful increase in the exports of agricultural products as exhibited in the above table is all the more gratifying, as only a few years ago it was generally proclaimed that it was impossible for the Argentine Republic ever to be an agricultural or grain-producing country. As will be seen, the principal factors which now enter into the export trade are the pastoral industry and agriculture, the latter of which is receiving a very remarkable development, and is promising most satisfactory results for the future. Of course, for years to come, the exports of wool and sheep-skins and the products of the cattle-killing establishments must continue to be the great items of export; but the production of cereals is getting to be a most important industry, the crops now not only supplying the demands of the home market, which heretofore were supplied from abroad, but the surplus now every year adds largely to the aggregate of exports. With the annual increase of an agricultural immigration from Europe it will not be very long before the products of the farm will contend for first place with those of the pastoral industry. Until there is a very decided increase in the exports, or a decrease in the imports, the commerce of the country, however, can not be said to be in a prosperous or safe condition.

ARGENTINE COMMERCE WITH EACH COUNTRY.

The tendency of the Argentine people to run into extravagances is seen by a glance at the commerce of the Argentine Republic with the countries with which it principally trades. Each year the bills for imports show an increase in lines of goods which do not enter into or contribute to the development of the resources of the country but simply gratify the luxurious tastes of the people.

RETURNS OF TRADE WITH THE DIFFERENT COUNTRIES.

As a matter which must needs be of considerable interest to our own merchants and manufacturers seeking new markets for their surplus, I proceed to examine the trade returns of the more important countries with which the

Argentine Republic has commercial relations, or at least those which more directly come into competition with the United States.

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ARGENTINE TRADE WITH GERMANY.

The recent development of the trade with Germany is attracting general attention. Its extent will appear from the following table:

Year.	Imports.	Exports.	Total.
1880	$2,365,152	$2,541,828	$4,906,980
1881	3,527,570	4,004,887	7,532,457
1882	4,764,622	4,803,951	9,568,584
1883	7,028,051	4,823,827	11,851,878
1884	8,868,930	6,813,713	15,682,643
1885	7,262,999	8,512,443	15,775,442
1886	8,044,875	6,950,908	14,595,783
1887	12,108,456	9,835,754	21,944,210

This increase is in great part, if not entirely, owing to the trade methods which Germany some time since adopted with reference to the Argentine Republic, being, indeed, exactly those which years ago I suggested for the adoption of our own country, to wit: First, quick and regular steam communication between the two countries; second, the establishment of branch houses here interested in the sale of German manufactures; and third, the opening of a German-Argentine bank in this city to facilitate exchange, etc. The lines of goods imported from Germany during 1887 were as follows:

Articles.	Value.	Articles.	Value.
Comestibles and groceries	$1,157,204	Manufactures of iron	$1,252,630
Liquors	686,585	Jewelry, etc	359,593
Tobacco	157,834	Crockery and glassware	628,230
Woven goods	4,530,674	Other imports	1,379,883
Drugs and chemicals	604,262	Total imports	12,108,456
Wooden ware, furniture, etc	637,247		
Paper	724,314		

Included in these imports are 16,725 sewing-machines and 1,074 pianos.

The exports to Germany, which show an increase of nearly three million dollars, consisted of the following articles:

Articles.	Value.	Articles.	Value.
Goat and sheep-skins	$597,389	Wheat (10,495,772 kilos)	$419,830
Ox hides (dry and salted)	824,448	Indian corn	132,796
Horse hides (dry and salted)	597,384	Flour	76,719
Wool, unwashed	6,806,430	All other articles	87,282
Nutria skins	153,936	Total	9,835,754
Jerked beef	40,864		
Linseed	98,676		

ARGENTINE TRADE WITH BELGIUM.

While the trade returns with Belgium show a gradual decrease in the volume of exports to that country, there has been a progressive increase in the

amount of imports from there. These in 1880 amounted to only $2,483,105; in 1887 they amounted to $10,947,955. On the other hand, the exports, which in 1880 reached to $14,356,458, amounted to only $12,111,531 in 1887. The total volume of trade, however, which amounted to $16,839,565 in 1880, has now reached to $23,059,486. The following are the imports of 1887:

Articles.	Value.	Articles.	Value.
Groceries and comestibles	$1,698,669	Boots and shoes	$373,084
Liquors	474,356	Stone, glass ware, etc.	952,402
Woven goods, etc.	1,952,007	All other articles	830,194
Paper	503,084	Total	10,947,955
Iron and iron goods	3,974,786		
Chemicals	188,373		

Among the imports were 13,198 tons of iron beams and joists amounting to $527,928, articles which are here rapidly superseding the use of timber in house-building. In the item of woven goods is included ready-made clothing, which amounted to $482,971. The table of exports to Belgium shows no new features. It comprises the following articles:

Articles.	Value.	Articles.	Value.
Hair	$246,839	Indian corn (27,646,636 kilos)	$552,932
Goat-skins	632,950	Wheat (43,486,655 kilos)	1,739,466
Dry ox hides	428,745	Flour	19,606
Salted hides	1,084,008	All other exports	171,312
Unwashed wool	6,957,800	Total exports	12,111,531
Extract of meat and pepsin	98,551		
Linseed	185,342		

The shipment of wool, which in former years went almost entirely to Belgium, are each year growing less, France having in great part obtained the control of the clip. The exports of agricultural products, however, to Belgium shows a steady annual increase.

ARGENTINE TRADE WITH FRANCE.

The trade of the Argentine Republic with France shows a most wonderful progression, the amount having almost doubled in the last ten years, while the imports have nearly trebled. I give the figures below:

Year.	Imports.	Exports.	Total.
1880	$8,292,872	$16,103,208	$24,396,104
1881	10,279,793	16,654,403	26,934,196
1882	12,186,824	16,398,992	28,585,816
1883	15,418,997	21,041,495	36,460,492
1884	16,785,590	22,518,371	39,303,961
1885	14,545,193	24,164,829	30,710,024
1886	17,002,038	22,342,183	39,344,221
1887	22,743,550	24,871,354	47,614,904

The imports of 1887 consisted of the following lines of goods:

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Articles.	Value.	Articles.	Value.
Groceries and comestibles	$3,154,772	Paper, etc	$470,781
Wines and other liquors	6,825,544	Iron ware	1,058,012
Woven goods	3,172,902	Jewelry	1,463,085
Ready-made clothing	2,079,555	Other imports	3,993,298
Chemicals, etc	971,705	Total	22,743,550
Furniture	542,597		

The exports to France of late years have in great part consisted of wool and sheep-skins. The quantity of wool shipped in 1887 was 51,276,586 kilograms, while that of sheep-skins was 19,221,175 kilograms. The quantity of maize exported was 98,868 tons, while that of wheat was 17,197 tons. The value of the principal exports was as follows:

Articles.	Value.	Articles.	Value.
Goat and kid skins	$499,217	Maize, or Indian corn	$1,977,362
Sheep-skins	4,228,659	Wheat	687,884
Dry hides	1,046,878	All other exports	631,540
Linseed	416,840	Total exports	24,871,354
Wool, unwashed	15,382,976		

ARGENTINE TRADE WITH GREAT BRITAIN.

If the trade with France shows a remarkable progression, that with England presents a still more surprising increase. In the last eight years it has more than triplicated, since from $17,272,193 in 1880 it has reached to $51,864,220 in 1887. In 1880 the imports from Great Britain amounted to only $12,103,460; in 1887 they were $34,779,211; in 1880 the exports to Great Britain were $5,168,732; in 1887 they were $17,085,001. The imports from Great Britain were as follows:

Articles.	Value.	Articles.	Value.
Live stock	$200,160	Boots and shoes	$304,548
Groceries and comestibles	1,297,330	Iron and iron utensils	10,088,224
Liquors	476,556	Jewelry, etc	515,717
Woven goods	12,505,481	Glass and crockery ware	860,515
Ready-made clothing	2,150,035	Stone coal	3,854,422
Chemicals and drugs	1,227,134	All other imports	762,620
Furniture	227,587	Total imports	34,779,219
Paper	328,890		

The exports to Great Britain comprised the following articles:

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Articles.	Value.	Articles.	Value.
Sheep-skins	$590,396	Frozen mutton	$838,702
Salted ox hides	1,081,090	Flour	28,769
Wool, unwashed	509,024	Grease and tallow	273,196
Linseed (62,974,984 kilos)	3,148,749	Precious woods	82,928
Indian corn (277,769,044 kilos)	3,555,382	Copper and silver ore	97,572
Wheat (145,947,643 kilos)	5,837,906	All other exports	390,867
Bones and bone-ash	243,219	Total exports	17,085,001
Salt beef	401,558		

It will be seen, from this table, that the surplus agricultural products of the country are beginning to find a market in England in such quantities as to cause no inconsiderable increase in the amount of exports to that country.

ARGENTINE TRADE WITH OTHER COUNTRIES.

It is hardly necessary, at the present time, to give the details of the commerce of the Argentine Republic with other countries, as the figures are comparatively unimportant; and not only is there for the last year no very marked change in the amounts, but they do not enter into any such competition with the United States as to require any particular notice.

ARGENTINE TRADE WITH THE UNITED STATES.

In regard to the trade with the United States, as has already been seen, the returns show a very important increase, not only in the bulk of the trade, but especially in the imports to the Argentine Republic. In the last eight years these have quadrupled. The following are the returns since 1880:

United States trade for eight years.

Year.	Imports.	Exports.	Total.
1880	$3,224,743	$5,126,440	$8,351,183
1881	4,268,110	4,035,714	8,323,824
1882	5,094,764	2,956,582	8,051,346
1883	4,933,054	3,510,574	8,443,628
1884	7,454,832	4,064,848	11,519,680
1885	7,006,729	5,563,841	12,570,560
1886	7,673,284	3,580,406	11,253,690
1887	11,004,553	5,938,808	16,943,361

It will be observed that this increase is almost exclusively in the imports, the exports to the United States being very little larger than they were eight years ago. The Argentine minister of finance, in commenting on the export figures in his report, says: "This is all owing to the fiscal system, which in practice absolutely excludes Argentine wool from that great market."

DETAILS OF THE TRADE WITH THE UNITED STATES.

The following are the returns of the Argentine national statistical office of the import and export trade of the United States with the Argentine Republic.

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Imports from the United States.

Articles.	Quantity.	Official value.
Live stock:		
Horses ..... number...	4	$2,026
Hogs ..... do.....	6	60
Sheep ..... do.....	51	5,200
Groceries and comestibles:		
Olive oil ..... kilograms...	24,548	8,592
Starch ..... do.....	349,083	42,879
Refined sugars ..... do.....	131,383	24,960
Cinnamon ..... do.....	7,121	4,404
Canned meats ..... do.....	6,767	3,263
Candies and dulces ..... do.....	920	498
Spices and condiments ..... do.....	7,687	3,123
Farina ..... do.....	3,000	150
Preserved fruits ..... do.....	2,363	882
Canned vegetables ..... do.....	12,724	2,168
Corn-starch ..... do.....	9,580	2,300
Hams ..... do.....	1,336	721
Dried beans and peas ..... do.....	13,940	4,349
Butter ..... do.....	825	430
Lard ..... do.....	190,210	46,565
Sirup ..... do.....	242	36
Biscuits, crackers, etc ..... do.....	332	236
Dried fish ..... do.....	155,882	56,591
Cheese ..... do.....	1,604	1,043
Tea ..... do.....	1,298	1,298
Liquors, etc.:		
Beer ..... liters...	80	14
Beer (bottled) ..... dozens...	4,071	9,485
Gin ..... liters...	1,764	300
Whisky (bottled) ..... dozens...	196	823
Port wine (bottled) ..... do.....	28	224
Vermouth (bottled) ..... do.....	98	558
Other wines (bottled) ..... do.....	49	294
Tobacco:		
Havana cigars ..... kilograms...	657	5,256
Other kinds of cigars ..... do.....	80	172
Havana leaf tobacco ..... do.....	13,318	6,922
Other kinds of leaf tobacco ..... do.....	280,693	87,855
Cut tobacco ..... do.....	622	498
Woven goods, etc.:		
Sacking ..... kilograms...	48,854	9,171
Not specified ..... do.....	10,764	8,073
Blankets ..... do.....	222	100
Pack thread ..... do.....	74,572	28,337
Cotton thread ..... do.....	48	29
Silk thread ..... do.....	70	1,244
Yarns ..... do.....	1,980	1,329
Oil-cloth ..... do.....	1,610	805
Cordage ..... do.....	89,729	25,137
Sail-cloth ..... do.....	204,721	153,882
Wicking ..... do.....	19,911	16,260
House and clothes lines ..... do.....	10,210	6,329
Cotton goods ..... do.....	214,115	156,007
Hemp goods ..... do.....	228	296

Imports from the United States—Continued.

Articles.	Quantity.	Official value.
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Woven goods, etc.—Continued.		
Mixed goods.....kilograms...	3,190	$1,784
Jute and straw goods.....do.....	2,698	1,246
Chintz and calico goods.....do.....	254,855	210,688
Ready-made clothing:		
Shirts, all kinds.....dozen...	144	101
Collars and cuffs, all kinds.....do.....	130	253
Corsets, all kinds.....do.....	50	500
Coats and pants.....	.....	733
Hats.....dozen...	18	27
Other cotton goods.....	.....	10,811
Other wool goods.....	.....	530
All other articles.....	.....	2,949
Chemicals, drugs, etc.:		
Acids.....	.....	140
Oils.....	.....	18,745
Alcohol.....liters...	144	29
Indigo.....kilograms...	1,700	18
Turpentine.....do.....	690,915	110,546
Varnish.....do.....	39,307	3,844
Blacking.....do.....	109,513	29,569
Carbonate of soda.....do.....	760	38
Paints, in powder.....do.....	25,500	2,993
Paints, prepared.....do.....	10,431	1,283
Fire-crackers.....do.....	169,623	59,368
Essences.....	.....	3,276
Specifics for sheep scab.....	.....	20,702
Glycerine.....kilograms...	15	15
Toilet soaps.....do.....	457	207
Patent medicines.....	.....	99,677
Perfumery.....	.....	3,581
Rosin.....kilograms...	1,743,056	52,296
Potassa.....do.....	3,840	768
Pharmaceutical products.....	.....	6,294
Chemical products.....	.....	32,851
Calcined soda.....kilograms...	14,396	576
Sulphate of lime.....do.....	47,167	943
Printing-ink.....do.....	12,674	2,788
Writing-ink.....do.....	2,382	357
Vaseline.....do.....	11,986	5,981
Lumber, furniture, etc.:		
Pine lumber.....square meters...	13,893,656	5,876,026
Walnut lumber.....do.....	77,290	77,290
Oak lumber.....do.....	52,293	42,634
Mahogany lumber.....do.....	1,784	3,033
Other lumber.....do.....	535,362	118,964
Trunks, boxes, etc.....number.....	12,561	2,354
Carriages.....do.....	31	5,597
Shooks.....do.....	13,374	25,874
Musical instruments.....	.....	972
Furniture of all kinds.....	.....	248,396
Pianos.....number...	31	9,590
Other articles of wood.....	.....	39,521
Paper, etc.:		
Writing-paper.....kilograms...	2,800	1,680
Printing-paper.....do.....	2,012	523
Wall-paper.....do.....	16,470	4,794
Wrapping-paper.....do.....	6,492	1,322
Cigarette-paper.....do.....	970	824
Blotting-paper.....do.....	2,836	1,134

Imports from the United States—Continued.

Articles.	Quantity.	Official value.
Paper, etc.—Continued.		
Sand-paper.....reams...	3,580	$11,678
Playing cards.....gross...	6	90
Papier maché.....	.....	340
Other paper work.....	.....	1,413
Blank-books.....kilograms...	251	124
Printed books.....do.....	16,489	16,489
Other printed matter.....do.....	1,753	1,403
Photographs, etc.....	.....	211
Leather, etc.:		
Saddles.....number...	2	30
Harness.....	.....	3,783
Other leather articles.....	.....	1,140
Tanned skins.....	.....	3,264
Iron and manufactures of:		
Arms and munitions.....	.....	8,666
Wire for fencing.....kilograms...	4,275	314
Needles.....thousands...	10	120
Wire.....kilograms...	30,320	1,662
Kitchen utensils.....	.....	65,310
Nails.....kilograms...	57,686	9,262
Iron safes.....do.....	1,040	229
Stoves.....do.....	78,670	9,440
Iron piping.....do.....	4,564	304
Cutlery.....	.....	2,324
Iron hoops.....	62,961	2,557
Ornaments.....	.....	50,789
Unmanufactured iron.....	17,870	714
Tools.....	.....	116,286
Iron beams.....	25,175	1,007
Agricultural implements, etc.:		
Plows.....number...	13,591	116,866
Shellers.....do.....	1,316	13,949
Rakes.....kilograms...	3,104	1,054
Plow-shares.....do.....	40,618	13,538
Separators.....number...	1,170	234,984
Threshers.....do.....	144	68,971
Spades and shovels.....kilograms...	284,607	74,110
Other implements.....	.....	57,419
Pumps of all kinds.....	2,413	13,961
Sewing-machines.....number...	4,932	92,450
Printing-presses.....do.....	16	790
Other machinery.....	.....	296,128
Other iron manufactures.....	.....	90,134
Materials for railways.....	.....	105,904
Materials for tramways.....	.....	143,036
Various metals and their manufactures:		
Jewelry.....	.....	5,232
Copper and bronze ornaments.....	.....	962
Mathematical instruments.....	.....	2,666
Tin (manufactured).....	.....	1,995
Metallic belting.....	.....	56,668
Gold watches.....	.....	200
Other kinds of watches.....	.....	32,772
Scales, etc.....number...	1,618	22,735
Printing types.....kilograms...	672	371
Glass ware, etc.:		
Glass ware.....	.....	6,648
Lamps.....	.....	70,508
Crockery ware.....	.....	5,037

Imports from the United States—Continued.

Articles.	Quantity.	Official value.
Glass ware, etc.—Continued.		
Marble work		$159
Mosaic		462
Fancy articles		138
Grind-stones		1,923
Slate roofing ..... square meters	11,270	4,508
Porcelain ware		102
Hydraulic cement ..... kilograms	1,697,805	33,956
Looking-glasses		402
Combustibles:		
Coal ..... kilograms	4,474,555	44,746
Coke ..... do	103,732	1,763
Kerosene ..... do	14,793,868	1,109,540
Other articles and manufactures:		
Office and writing utensils		4,826
Chemical utensils		6,459
Various fancy articles, etc		53,866
Total imports		11,004,553

Exports to the United States.

Articles.	Quantity.	Official value.
Hair ..... kilograms	541,392	$270,696
Goat-skins ..... do	570,540	342,324
Sheep-skins (unwashed) ..... do	24,984	5,483
Ox and cow hides (dry) ..... number	1,110,105	3,696,235
Horse hides (dry) ..... do	50	100
Hide cuttings ..... kilograms	189,799	11,388
Wool (unwashed) ..... do	4,000,633	1,200,190
Canary seed ..... do	102,632	6,158
Carpincho skins ..... do	3,552	1,420
Nutrid skins ..... do	444,538	222,266
Other skins		39,671
Ostrich feathers ..... kilograms	22,910	32,074
Bones and bone-ash ..... do	5,672,366	86,412
Old iron	1,075,000	21,500
Other articles		2,891
Total exports		5,938,808

ANALYSIS OF OUR IMPORT TRADE.

Considering how unfortunately our import trade is handicapped in lacking all the facilities for a close and intimate intercommunication—without steamship lines, without banking advantages, without distinctive American business houses here—the returns for the last year are very satisfactory. The wonder is that the figures are so large. While it can not be said that the trade presents any new features, yet its shows a very considerable increase in its proportions; and, while the great bulk of our shipments to the River Plate still consists of crude articles and raw materials of prime necessity which can not be obtained in other markets, the returns show the beginning of a trade in other lines of goods, which promises better things for the future.

The following table presents a comparison of the shipment here of leading articles for the last four years:

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Articles.	1884.	1885.	1886.	1887.
Turpentine	$34,430	$25,152	$48,933	$110,546
Starch	49,448	45,438	41,071	42,879
Agricultural implements	136,530	611,002	455,450	580,891
Lamps and gas fixtures	66,159	86,596	69,404	70,508
Lumber	2,817,146	3,453,719	3,352,620	6,117,847
Furniture	92,517	129,792	289,246	248,396
Cotton goods	178,178	200,697	238,716	366,695
Hardware, etc	240,694	226,073	542,824	562,447
Lard	40,326	33,731	55,958	150,220
Kerosene	866,741	341,891	707,220	1,109,540
Railway machinery, etc	834,168	392,119	165,090	248,940
Drugs, chemicals, etc	62,355	82,224	342,658	369,118
Hempen and woolen goods	189,136	165,534	417,207	171,455
Tobacco, etc	208,420	98,542	77,856	100,703

It will be observed that the great increase in our imports has been in lumber and kerosene, the articles for which the Argentine Republic is entirely dependent upon the United States; but the steady growth of our trade in agricultural implements and machinery is deserving of notice. The increase in these lines is entirely owing to the fact that we furnish far better or more serviceable articles than can be obtained in the markets of Europe; and, after trial, ours are forcing themselves upon the attention of this country in spite of the fact that, owing to superior finish and style, it may cost a little more to put them down here. Besides the increase in nearly all the above lines of goods, the returns show in many others the very healthy beginning of a considerable trade—such as American beer, salt and canned fish, shooks or barrel staves, pianos, cotton duck, cooking stoves, etc. But there are some articles, which are a specialty with us, that are entirely supplied from European markets. Among these may be mentioned cheese. Out of more than 1,500 tons, valued at $1,073,629, the United States last year furnished only 16 tons, valued at $1,043. And the same with hams; out of 216 tons imported into the Argentine Republic last year only 13 tons came from the United States direct, nearly all the rest reaching here by way of England. We have quite lost our trade here in refined sugars, the bulk of the imports now coming from France, Belgium and Germany, which countries furnish a cheaper article made from beet-root. I have heretofore referred to the fact that if the cheap machinery-made furniture which comes from the United States shows no increase in amount, it is perhaps owing to the fact that several establishments have recently been started here equipped with all the necessary appliances for turning out the same class of work, and the same is the case with reference to starch.

AMERICAN SAMPLE HOUSES.

The American sample houses, which have been lately established here, are, I believe, doing very well, and exhibit no little energy and enterprise in

pushing our manufactures. Indeed, it is in part owing to their efforts to procure orders that our imports during the last year have footed up so well, but it is a fact that there is at the present time but a single distinctive American importing house in the city of Buenos Ayres. There are a number of large and wealthy firms that are doing an immense business with the United States, and probably offer our goods on the best terms possible, but they are either English or German houses, whose most intimate connections are with Europe, and which do business with the United States simply because it pays them well to do so.

EXPORTS TO THE UNITED STATES.

The exports of the Argentine Republic to the United States, for the last year, show an increase of $2,358,402 over the figures of 1886, the returns for 1887 being a little larger than those of 1885. The following is a comparative table of exports of principal articles for the last five years:

Exports to the United States.	1883.	1884.	1885.	1886.	1887.
Ox and cow hides	1,488,799	2,462,244	2,384,087	1,764,810	3,696,235
Wool	955,862	602,637	1,187,115	911,082	1,200,190
Linseed	30,515	96,051	251,247	46,958	.....
Sheep-skins	1,156	272,957	32,625	234,128	5,483
Goat-skins	277,209	161,143	955,428	184,964	349,324

The linseed crop of the Argentine Republic last year, amounting to 81,208 tons, nearly all went to Great Britain, not a pound of it finding a market in the United States. There was an unusual demand for Argentine hides in the United States, the shipments more than doubling the figures of the previous year. The wools which went to the United States, as heretofore, were the carpet wools of Cordova, their point of shipment being Rosario, on the Paraná River. Since the removal by the Argentine Government of the export duty on wool, there has been no difficulty in bringing these carpet wools within the lowest figures fixed by the American tariff. So long, however, as our tariff remains as it is, it will be impossible for the fine clothing wools of the Argentine Republic, handicapped, as they are, by about 70 per cent. of dirt and grease, to find a paying market in the United States. Of the 30,447 tons of sheep-skins shipped from the Argentine Republic in 1887, only 25 tons were sent to the United States; but of the 765 tons of goat-skins exported, 570 tons found a market in the United States.

THE INCREASE IN OUR TRADE.

The progressive increase which we have seen in the trade between the United States and the Argentine Republic is not the result of any of the modern methods usually adopted for the promotion of international commerce. On the contrary, whatever development there is has taken place in spite of the fact that we are entirely lacking in all the facilities now employed by the commercial nations of the world for the establishment and maintenance of trade. After many years of persistent discussion of the

matter, we are still as far as ever from even the prospect of steam navigation with the Argentine Republic. Not a single regular merchant steamer arrived here from the United States during the past year, and our trade continues to be dependent upon the slow and uncertain medium of sailing vessels. We are still, also, without any proper banking facilities with the Argentine Republic. All our exchange and commercial business continues to be transacted through English banking houses, thus increasing the charges and complicating the settlement of balances. And worse than all, as I have already stated, we are quite without distinctive American importing houses in this city, our entire trade being thus made to depend, not upon our ability to supply any given line of goods, but upon the question whether it will not pay the importing merchants better to buy an inferior article in Europe rather than a superior one in the United States.

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STEAM-SHIP COMMUNICATION.

In my last annual report I spoke of the prospects of the establishment of a steam-ship line between New York and the River Plate, under a concession granted by the Argentine Congress to Mr. R. P. Houston, of England. Thus far nothing has been done under the concession, for the reason, as I am informed, that English capitalists are not willing to embark in an enterprise which, however satisfactory in itself, is encumbered with conditions that are considered unnecessarily onerous. From present appearances, the problem of regular steam-ship communication between the United States and the Argentine Republic yet remains to be solved. Meanwhile there is not a maritime nation of Europe—hardly a country of South America, even—that is not in the enjoyment of regular steamer navigation with the River Plate. The United States alone continue to be isolated and "behind the times;" and this, notwithstanding our anxiety to be on closer commercial terms with the republics of South America, and in spite of consular reports and South American commissions, which have so explicitly explained the methods by which our trade hereaway can be firmly and satisfactorily established.

THE APPEARANCES AND PROSPECTS OF TRADE.

And what shall I say in regard to the prospects of trade, that constantly recurring subject about which I am so persistently asked to give my opinion by merchants at home? From my stand-point, which, after all, may not be the correct one, I can only reiterate what I have heretofore had occasion to remark, that the trade of the Argentine Republic, in my opinion, is not in what may be called a healthy or normal condition. It continues to suffer from the same unfortunate incidents which have accompanied it for the last five years. There is a continuance of the suspension of specie payments by the banks, and, while all imports must be paid for in gold, the business of the country is transacted on a depreciated currency basis. The premium on gold, which a year ago was 30 to 35 per cent., is now 40 to 45 per cent.; and though the Government banks are just now making use of their gold reserve on the Bolsa to reduce the premium, yet, with a newly

authorized issue of sixty millions of inconvertible paper money under the general banking law, it is not probable, however spasmodically a few millions of dollars may be thrown upon the market to lower the gold rate, that the premium for years to come is going to be any less than it is now. Even under this state of affairs there would not be any particular cause for alarm if the exports of the Argentine Republic were commensurate with the imports; but the balance of trade against the country is getting to be even more marked than ever before, thus greatly increasing the demand for gold, or, what is the same thing, foreign exchange to pay the differences. Heretofore these have been bridged over by the gold received from the frequent foreign loans, which the National Government and some of the provinces have been making in Europe, in behalf of all sorts of enterprises, from the building of railways to the starting of new banks under the national banking law. But there must be an end of borrowing some time, and the money centers of Europe are getting tired of these constant calls upon their purse-strings, each one of which has a tendency to ultimately weaken the public credit of the country. Only the other day a cablegram announced that they were crying a halt to the placing of one more additional loan, on top of those already made, for the completion of the public sewerage works of this city. When the day of making no more new loans has arrived, and the proceeds of the last ones are exhausted, it is not difficult to foresee the result, unless meanwhile there shall be an end to the persistent overtrading which of late years has characterized the foreign commerce of the Argentine Republic. Some are already predicting that a commercial crisis will with difficulty be averted. Whether the approaching clouds of danger will end in a storm of this character or not I would hardly venture to say, but it is certain that the commercial outlook is just now not at all reassuring; and the apprehensions of financial disaster and business collapse are looming up before the vision of some of the shrewdest business men of the country. I am gratified to report, however, that the National Government has at last quite effectually shut down on the old custom of granting concessions with guaranties to private parties, and has not only gone out of the business of building its own railways and other public works, but has even sold out some of those for the building of which the proceeds of many public loans were required. This course has somewhat reassured, or at least quieted, the public mind, and placed the country in a better position abroad, but the overtrading still continues with a recklessness which forebodes only evil. That this may be fully seen, I give the following balance-sheet between imports and exports, from 1883 to the end of 1887. There is certainly nothing very promising in this exhibit of figures, showing, as it does, how the gold, which during the last five years has been received on account of loans abroad, has in great part at once gone back to Europe in the shape of exchange to pay balances:

The balance of trade.

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Year.	Imports.	Exports.	Excess of imports.
1883	$80,435,828	$60,207,976	$20,227,852
1884	90,056,144	68,029,836	30,026,308
1885	92,221,969	83,879,100	8,342 869
1886	95,408,745	69,834,841	25,573,904
1887	117,352,125	84,421,821	32,931,305
Total balance against the country in five years			119,102,238

TRADE RETURNS FOR 1888.

The situation in this respect was so unsatisfactory that there was a hope that during the present year the custom-house returns would make a better showing for the country by a reduction in imports and increase in exports; but, while I write, I am just in receipt of an abstract of the custom-house statistics of the country for the nine months ending September 30, 1888, and I give the figures as follows:

Country.	Imports.	Exports.
South Africa		$5,882
Germany	$11,717,315	9,930,754
West Indies	2,169	726,028
Belgium	8,535,052	12,810,116
Bolivia	157,445	214,314
Brazil	1,744,439	2,334,841
Chili	25,059	1,201,35[illegible]
Spain	2,833,309	2,166,054
United States	7,022,025	5,069,907
France	21,590,023	19,964,609
Italy	5,219,836	1,846,309
Holland	256,576	
Paraguay	1,220,345	288,066
Portugal	53,027	97,099
Great Britain	38,496,911	12,368,020
Uruguay	7,011,666	4,431,029
Other countries	3,129,091	1,954,621
Total	109,014,287	75,409,441

Here, then, for nine months of the present year we have an excess of imports over exports of $33,604,846—an excess greater than the total excess of any previous year. Where and how all this is to end is left to conjecture. If these imports were for raw materials or for articles to be employed in reproductive industries, the case would be different, but an examination of the tables of imports will show that in very great part they are entirely unproductive—such as liquors, fine clothing, and objects of luxury.

ARGENTINE TARIFF FOR 1889.

The Argentine Congress, recently adjourned, has made some changes in the customs law of the country for 1889. I give a translation of the new law on the next page.

IMPORT DUTIES.

ARTICLE I. All foreign merchandise imported for consumption shall pay a duty of 25 per cent. on its valuation in deposit, except as follows:

(1) Cigars of all kinds, which shall pay a duty of 60 per cent.

(2) Tobacco of all kinds, which shall pay a duty of 55 per cent.

(3) Fire-arms and munitions, powder, and perfumery, which shall pay a duty of 50 per cent.

(4) Ready-made clothing and confections, hats and caps, boots and shoes, dress ornaments, harness, carriages, furniture, matches other than wax, fire-crackers, yerba maté, objects of art, preserved fruits, preserved vegetables, preserved meats and cheese, which shall pay a duty of 45 per cent.

(5) Paving stones, cordage, trotting horses, comestibles in general, except rice, farina, table salt, and whatever pays a specific duty, which shall pay a duty of 30 per cent.

(6) Galvanized iron of all kinds, white pine and spruce lumber, all kinds of writing and printing paper, which shall pay a duty of 10 per cent.

(7) Canvas and sackcloth, gold and silver worked, sewing and embroidery silk, all instruments and utensils with handles, or ornaments with silver or gold, when these increase their value one-third part; presses and all materials for printing except types, lithographic presses; all agricultural and industrial machinery, common salt, steam-engines and detached pieces for repairing the same, thread and wire on spools for binding sheaves, sulphuric acid and sulphate of lime, tin, and solder, which shall pay a duty of 5 per cent.

(8) Precious stones unset, which shall pay a duty of 5 per cent.

(9) The following specific duties, to wit:

Wheat, for 100 kilograms	$1.65
Starch, for each kilogram	.07
Coffee, for each kilogram	.08
Macaroni, for each kilogram	.07
Crackers and biscuits, for each kilogram	.09
Corn meal and wheat flour, for each kilogram	.04
Tea of all kinds, for each kilogram	.30
Sugar not refined, for each kilogram	.07
Common wine in casks, for each liter	.25
Each bottle of wine of not more than one liter	.25
Each liter or bottle of beer or cider	.15
Alcohol in casks not exceeding 30°, per liter	.15
Brandy, gin, anis, kirsch, or other liquors in casks, 25°	.20
Alcohol bottled of 25°, per liter	.20
Brandy, gin, anis, kirsch, or other liquors, bottled, per liter	.25
Liqueurs and bitters, bottled, per liter	.25
Kerosene, per liter	.05
Sperm, stearine, or paraffine candles, per kilogram	.15
Stearine, per kilogram	.12
Playing cards, per gross	10.00
Wax matches, per kilogram	.50
Straw paper for bags or for furring, paper bags, and colored paper, per kilogram	.12

Articles of weight, which have two or more coverings, shall pay the specific duty on the immediate covering.

ART. II. The following articles shall be imported free of duty, to wit: Original works of art, sculpture or painting, books in general, vessels and machinery for vessels moved by steam or other agent, stone coal, white sand, plows, wire for fencing or telegraph, wire for vineyards up to No. 3, breeding animals and cattle on the hoof, fish and dried fruit, furniture and tools of immigrants; gold and silver coined, in grain, bars or dust; plants, iron and steel materials

for roadway of trams and railways; locomotives, car-wheels, iron pipes for gas or water, which have at least a diameter of 75 millimeters; quicksilver, cask frames of more than 2 kilograms, special mining powder and drilling-machines and dynamite, church ornaments, etc.; sulphur, unmanufactured, books and stationery for provincial governments or educational boards, seeds for agriculture, casks of wood and iron, materials and cases for packing meats for export, machinery for congealing meats for export.

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ART. III. Every kind of product, produce, or manufacture of the country shall be free of export duty.

By a supplemental law, there is a duty of 1 per cent. additional to the rates above specified on all articles of importation, and in the settlement of duties in the currency of the country a premium of 15 per cent. is added as the difference between gold and paper.

CUSTOMS OR VALUATION TARIFF.

The customs tariff for 1888, containing the official values fixed by the Government for all classes of imports that pay an ad valorem duty, is now passing through the press. So soon as it is issued I shall, in a separate report, forward a translation of all such portions of it as may be interesting to importers and merchants of the United States.

PAPERS RECEIVED AT THE CONSULATE.

I take this opportunity to mention that during the past year this consulate has been supplied gratuitously with a number of valuable papers of the United States, among which were the South American Export Journal, American Exporter, Scientific American, American Machinist, Paper World, El Comercio, El Progreso, Anthony's Photographic Bulletin, and the Daily New York Herald. They have been placed at the disposal of merchants, shippers, and ship-masters here, and have been the source of great benefit to those directly interested in trade and commerce.

CONSULAR CORRESPONDENCE.

It seems necessary that some reference should be made to the constantly-increasing number of letters of which this consulate is the recipient. Every mail that reaches here from the United States, whether direct or via England, brings its large quota. Not unfrequently the number received by a single mail quite reaches to a hundred, and is scarcely ever less than twenty or thirty. A large proportion of them are on the same subject, asking for reports about the trade, commerce, industries, etc., of this country. The parties interested should understand that I am expressly forbidden by the Department to give the information requested. The Consular Regulations prescribe that "the consular publications should be the means of communicating consular reports to the public;" and consular officers "are prohibited from furnishing reports or articles upon trade or commerce in their districts for any other publication, or to private persons; that such reports must be communicated only to the Department." Under these circumstances, of course, I can not respond to their requests, but in a very large majority of cases the subjects of their letters have time and again been

fully discussed by me in carefully-prepared reports to the Department of State, and they would save themselves from disappointment by applying directly to that source of information for printed copies of such reports.

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Another large portion of these letters ask as to the prospects for business openings, or chances for work, or opportunities for employment. While the consulate is not an agency for this sort of information, and is not in a condition to be thoroughly posted on these subjects, yet I reply to as many of such letters as I possibly can; but the number is so great and accumulating that if my whole time were devoted to this class of correspondence, I would not be able to get through it. I may, however, say to this category of letter writers, that, except in some few special cases, the first prerequisite for obtaining business employment here is a knowledge of the Spanish language. It is the medium for all transactions and interchanges of thought, and it is absolutely money thrown away to venture here without such knowledge. And I may add that if any Americans, under this restriction, persist in coming down here in the hope of bettering their conditions, they should bring money enough with them to get back home again, for in nine cases out of ten, as I know by actual experience, it will only require a short sojourn here, where labor is cheap and paid for in depreciated currency, to thoroughly impress them with the blessings they have left behind them.

THE AMERICAN COLONY.

There seems to be an impression in the United States that there is a large American colony in this country composed of families permanently residing here, or located here indefinitely for the purposes of trade and commerce. This is altogether a mistake. There are a few permanent American merchants here in Buenos Ayres, and a few more in Rosario, but of those who are engaged in the exporting or importing business with the United States the greater part may be said to be here only temporarily. There are not, perhaps, in the whole country a hundred Americans all told, and these are so scattered that they can hardly be called a colony.

DEATH OF SAMUEL B. HALE, ESQ.

It is with great personal sorrow that I am called upon to record the death of the pioneer of American trade with the Argentine Republic. I refer to Samuel B. Hale, esq., the founder of the well-known house of Samuel B. Hale & Co., whose name, for the last fourteen years, has so often appeared in my consular reports, and whose high character and commercial standing have, for the last half century, been recognized throughout the mercantile world. Mr. Hale quietly breathed his last at his beautiful residence in this city, on the 20th of September last, in the eighty-fifth year of his age. For several years, owing to increasing infirmities, he had retired from active life, leaving the business of the great house he had founded to be conducted by his son-in-law, John F. Pearson, esq., and the younger members of the firm; but full of all human sympathies and kindness, as he was, he never lost

his interest in human affairs, and almost up to the last, surrounded by a large circle of warm personal friends of all nationalities, he continued to take pleasure in recounting the experiences of his busy life in the Argentine Republic, or in discussing the affairs of his native country, for which he constantly expressed his tender affection and in whose wonderful progress he always took the deepest interest. In his death one of the last remaining landmarks of the early days of the Argentine trade and commerce has disappeared. No one shall ever know—he kept no account himself—of the numberless private charities which he constantly dispensed, or of the hundreds of distressed Americans, in this far off country, whom he relieved and sent back to their friends. I am not able to state the value of the estate which Mr. Hale has left, but it is known to be very large, comprising not only large amounts which are employed in the business of the house, but a number of very extensive and valuable cattle and sheep estancias in the provinces of Buenos Ayres and Santa Fé and the Republic of Paraguay. The house of Samuel B. Hale & Co., which is now principally engaged in business of a financial character, will continue on as heretofore, without any change in the name or style by which it has been so long and so favorably known.

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REVENUES AND EXPENDITURES OF THE REPUBLIC.

The ordinary revenues of the Argentine Republic for the year 1887 amounted to $51,582,460, an increase of $9,332,307 over the receipts of 1886, and an increase of $5,560,459 over the estimates. The following table gives a comparison of the sources of ordinary revenue for the last two years:

Sources of revenue.	1886.	1887.
Imports	$26,805,459	$34,100,008
1 per cent. additional	888,382	1,113,383
Exports	1,988,082	1,907,413
Warehousing	549,801	679,107
Stamped paper	2,003,265	2,820,912
Stamps	173,943	211,463
Business licenses	832,897	858,705
National taxes	1,598,663	2,037,813
Post-office	751,446	856,141
Telegraphs	248,330	407,306
Light-houses	111,439	136,623
Sanitary visits	38,144	47,386
Timber-cutting permits	13,482	13,281
Water rates	371,844	463,923
Judicial deposits	74,271	77,800
National railways	2,952,834	2,626,395
National bank shares	1,209,002	1,883,804
Imposts on bank issues	623,537	742,073
Mole and port dues	310,239	458,913
Mint	65,565	.....
Sundries	639,488	149,912
Total	42,250,152	51,582,460

The revenue of 1887 is the largest ever realized in the history of the nation, showing an increase of 22 per cent. over that of the previous year. But to the above figures are to be added the following items of revenue:

Fifteen per cent. added to custom-house duties for payment in paper	$5,565,848
Sales of national lands	828,867
Money returned into the treasury	148,962
Total	6,543,677
Ordinary revenue as above	51,582,460
Total revenue	58,126,137

IMPORT DUTIES.

The duties on imports, which are the great source of revenue, continue to expand with the increase of trade, the Argentine tariff, which is in great part ad valorem, being annually so adjusted as to give the amount of revenue required. These duties for the year 1887 show an increase of 27 per cent. on the figures of the year 1886, and the amount is more than double what it was five years ago. Within the last two years there has been an increased duty placed on wines, alcohol, and sugars, which to some extent may account for the increase, but on other articles there has been no great change in the rate, and the increased receipts from this source of revenue is mostly in consequence of the increase in the amount of importations. The following table gives a comparison of the duties collected on imports for the years 1886 and 1887 respectively:

Imports.	1886.		1887.	
	Value of imports.	Amount of duty.	Value of imports.	Amount of duty.
Merchandise subject to specific duty	$19,097,617	$8,589,695	$28,942,369	$11,818,679
Merchandise at 2 per cent. duty	306,479	13,971	169,347	4,952
Merchandise at 5 per cent. duty	4,629,445	332,565	5,145,904	360,775
Merchandise at 10 per cent. duty	7,004,553	596,964	7,294,564	680,981
Merchandise at 25 per cent. duty	47,813,539	12,653,895	56,560,725	16,521,521
Merchandise at 45 per cent. duty	6,488,085	2,457,689	9,895,986	3,177,996
Merchandise at 50 per cent. duty	965,477	478,157	1,435,664	704,591
Merchandise at 55 per cent. duty	1,245,297	635,459	1,145,003	637,361
Total	87,590,482	25,758,395	104,589,562	33,906,874

In these computations the 1 per cent. additional duty is not taken into the account. As illustrative of the rapidly increasing product of the duties from imports I give the following figures for the last ten years:

Increase in duties from imports.

	Duties on imports.
1878	$12,033,041
1879	12,844,738
1880	12,055,796
1881	14,782,655
1882	16,737,793
1883	19,789,558
1884	23,639,237
1885	23,205,975
1886	27,693,870
1887	35,213,390

EXPORT DUTIES.

The export duties, which were 3 per cent. on hides and 4 per cent. on wools, etc., were abolished by law of Congress, in October, 1887, to take effect from the 1st of January, 1888. This removal of export duties makes a new era in the economical history of the Argentine Republic, and will, it is believed, very materially assist in the development of the industries of the country. This duty was first imposed in 1864 as a supreme necessity to meet the expenses of the war in which the nation found itself involved, and it has since been retained to satisfy the requirements of the treasury, in spite of the prescriptions of the constitution. The country is indebted to the persistent efforts of the National Industrial Club for its repeal, assisted by the enlightened approval of President Suarez Celman.

NATIONAL APPROPRIATIONS.

The budget of appropriations for the support of the Government for the year 1887, according to the report of the minister of finance, were, for ordinary expenses, $47,066,887; for extraordinary expenses, $21,955,778; total, $69,002,665, as follows:

Branch of the service.	Ordinary.	Extraordinary.	Total.
Department of the interior	$11,045,164	$16,093,255	$27,138,419
Department of foreign relations	971,556	398,239	1,369,795
Department of finance	17,162,929	3,345,232	20,508,161
Department of justice, education, and worship	7,059,262	268,619	7,328,181
Department of war	8,321,879	948,327	9,270,206
Department of marine	2,505,797	882,206	3,387,903
Total	47,066,887	21,935,778	69,002,665

But of the ordinary appropriations there was on the 31st of December, 1887, still unexpended a balance of $3,803,256, and of the extraordinary appropriations a balance of $10,057,422, or a total of $13,860,678, the actual appropriations being $55,141,988.

Of the appropriations for the department of the interior, $4,482,997 were for the expenses of the Executive, of Congress, and of the territories, $7,452,033 for the construction of railways and other public works, $1,709,017 for post-office and telegraphic service, $105,212 for the department of agriculture, surveys of the public lands, $166,383, etc.

Of the appropriations for the department of foreign relations, $748,852 were for the expenses of foreign legations and office expenses, $568,220 for immigration, etc.

Of the appropriations for the department of finance, $444,993 were for office expenses, etc., $1,905,138 for expenses in the collection of revenues, $19,880,887 for the service of the national debt, $1,271,677 for the municipality of the capital, etc.

Of the appropriations for the department of justice, worship, and public education, $1,371,099 were for the administration of justice in the various

courts, $292,102 for the archbishop, bishops, and churches, $4,606,183 for schools and school-houses, $58,661 for the expenses of the department, etc.

Of the appropriations for the department of war, $73,237 were for the expenses of the department, $553,305 for cuartels, barracks, and hospitals, $2,657,888 for rations, equipage, clothing, horses, etc., $152,374 for the military academy and the school for non-commissioned officers, $977,394 for pensions, etc.

Of the appropriations for the navy department, $965,579 were for the expenses of the fleet, $1,058,715 for commissary and naval stores, $377,214 for naval school, school ships, etc., $181,691 for arsenals and fortifications on Martin Garcia Island, $70,121 for maritime prefecture and the sub-prefectures.

A BALANCE IN THE TREASURY.

Deducting the total amount of the expenditures from the total receipts, the national account stands as follows:

Receipts of revenue	$58,126,136
Total expenditures	55,141,988
Balance of revenue	2,984,148

The President, in his message, congratulates the nation on the fact that the revenues so handsomely exceed the disbursements, while the minister of finance, in referring to the condition of the treasury, says "the testimony of these figures is very eloquent in favor of the vitality of the country and the prosperity of its industries and commerce, which, in so short a time, have not only recovered from the consequences of the crisis, but have acquired a movement which is far ahead of that of any former period and which continues with an increasing impulse."

THE DEBT OF THE NATION.

The consolidated debt of the Argentine Republic, on the 31st of December, 1887, according to the report of the bureau of statistics, was as follows:

Internal debt	$51,243,800
Foreign debt	90,474,048
Floating debt	12,316,344
Total	154,034,192

But, since the beginning of the present year, the National Congress made provision for what is called an internal issue of bonds to the amount of $40,000,000 as a basis for the establishment of a system of national guaranteed banks, so that the national debt may now be stated as follows:

Total up to December 31, 1887	$154,034,192
New issue for national banks	40,000,000
Fractional currency in circulation	6,000,000
Total Argentine public debt	200,034,192

When we consider that the total amount of the public debt of the Argentine Republic was only $82,017,291 in 1881, it must be conceded that, in a state of profound peace, the Government has made a very persistent use of its credit in increasing the figures to $200,000,000 in the course of seven years. The facility with which the nation is thus increasing its public liabilities is attracting some attention abroad. The London Statist, commenting on this subject, says:

We do not insinuate that as yet the Argentine Republic has incurred too much debt. No country in the world has of late years made more rapid progress. The people are enterprising and energetic; their system of government is liberal; their territory is vast and capable of maintaining an immense population, and immigrants are flocking in in large numbers. There is, then, a magnificent future before the Republic, if it does not compromise that future by improvident borrowing; but if it goes on at the present rate of incurring debt, there is great danger that it will compromise its future very seriously indeed. It would, then, be a good thing for the Republic if English investors showed themselves less ready to take up everything Argentine than they do at present, and it would certainly be a good thing for the investors themselves, as their securities would be safer.

It is evident, however, that the Argentine Government appreciates the necessity of keeping its credit up to the high standard which it has attained, and, as I have already stated, it has decided that it will involve itself in foreign indebtedness for no more works of internal improvement which private capital is willing to undertake on its own account. Indeed the Government, under the auspices of President Celman, is rapidly getting out of the business, and, besides the public sewerage works of the city of Buenos Ayres, has also just sold out two of its most important railways to private parties, and it has several others that it is ready to dispose of. Last year the public debt required no less than $19,880,000, or over one-third of the public revenue, in gold to meet the service of the interest. While the Government would have no trouble in taking care of even a larger amount of indebtedness, the questionable policy of its doing so is generally discussed in financial circles. At the same time President Celman, in his recent message to Congress, very clearly shows that "if the Government has an external debt of $90,000,000, it has now a sufficient amount of money to pay it off if necessary." Indeed, Argentine securities were never quoted so high as at the present time. The 5 per cent. bonds issued in 1887 at 85½ cents stand to-day at 97 cents, and all its 6 per cent. bonds are quoted at 104½ cents.

THE VOLUME OF PAPER CURRENCY.

A matter, however, about which there is now a large amount of current criticism is the continuously increasing amount of paper money with which the country is supplied and the high premium which gold coin commands on the exchange. The suspension of specie payments by the banks, which was sanctioned by Congress three years ago, has not only been permitted to continue, but no provision is now even thought of which looks towards resumption. Indeed, instead of contracting the volume of depreciated paper currency, with which all the exchanges in the country are conducted, the

policy of the Government has been to still further increase it. During last year the amount in circulation was increased from $73,000,000 to $92,000,000. Since then, under the system of national banks already referred to by me, an additional issue of $40,000,000 is provided for, the notes being secured by a deposit of Government bonds. These notes are just now getting into circulation, so that the volume of paper currency is now about $130,000,000; and yet, with this increase, the banks are compelled to curtail their discounts, so great is the demand for money for speculative purposes.

THE PROGRESS OF THE COUNTRY.

No better evidence, however, than this is needed to show the wonderful push and progress which have taken possession of the people all over the country. The spirit of improvement is abroad in every direction. President Celman, in his late message, well says:

> The principal feature of the situation of the country is the great national development of trade, industry, capital, and credit. To the increased value of land and city property, to the development of trade, to the increased production of the country, to the opening of new banks, must be added the increase of the revenue beyond all expectation; the facility with which the exchequer meets its obligations, and the very favorable state of the public credit at home and abroad. The vigorous impulse with which this new country displays its strength in the increase of its trade, in the multiplication of its industries, in the influx of immigration, and in the fruits of hard work, is the most palpable proof of its sure and prosperous advance, and a pledge that this vast progress will contribute to cement both peace and liberty in the Republic.

President Celman does not state the case too strongly. Nothing can now stop the progress of the country in the onward march of a great development. Political errors have been pointed out as the sure harbingers of impending ruin; financial blunders have been paraded as the precursers of general bankruptcy, but in spite of all this—in spite of critics and prophets of evil—the Argentine Republic continues to move forward, with giant strides, in the race for empire. Mistakes have been made in the administration of affairs, and perhaps other mistakes will yet be made. But the Government, with the lights which it has at hand to guide it, and with an endeavor to do the best it can, is grandly struggling to raise the country to a higher level of national existence. The tide of immigration, which, in an annually increasing current, is setting towards the River Plate, shows the hope and confidence which the world has in its promise and destiny. Capital, which is always sensitive and suspicious, now at last, under the stormy guaranties of peace and progress, finds here better opportunities for good investments than are offered anywhere else in the world; and it is coming by each steamer in amounts which seem almost incredible, thus opening up the waste places of the country, establishing new industries, and swelling the volume of general business. Already the same movement westward, which was the forerunner of the wonderful impulse which has made the United States what it is, is visible here in the Argentine Republic. A strong current of labor, of industry, of trade, of speculation is moving from the

water-ways into the interior. All the different provinces begin to feel the pulsations of quickened life; all of them are beginning to take part in the new departure. The lazy gaucho of other years is everywhere giving place to the earnest, hard-working wage-earner of European nationality; the slow, ponderous, old bullock cart is being superseded by the locomotive, with its long passenger and cargo trains—not in one direction only, not in one portion of the Republic only, but all over the interior. The railway track has already been extended to the farthest frontiers, north, south, and west, and all the intervening distances are now being united by these bands of iron. In the wake of these pioneers of highest civilization will follow a development which will be as marvelous as that which has characterized our own great Republic. Well may the other natives of Christendom watch, with sympathy and admiration, the promise of the Argentine Republic.—BUENOS AYRES, *December 13, 1888.*

E. L. BAKER,
Consul.

ORANGE AND LEMON CULTURE IN SICILY.

In Sicily lemon culture is 30 per cent. more profitable than orange culture; lemon trees are more prolific than orange trees. Prices for lemons are higher than for oranges. The province of Palermo is the great orange district of Sicily. Throughout the province of Messina the orange was exterminated in 1865–1870 by the "gum," and the lemon budded on the wild orange has taken its place. To defy the ravages of the gum the bud must be put in the wild orange stock at least 3 feet from the ground.

THE ORANGE.

The bulk of oranges shipped from Messina comes from the province of Reggio on the mainland. In Calabria they begin gathering the orange in October, their fruit is hard, sour, and of a whitish appearance; it is shipped to England. Shipments of oranges to the United States begin in December. They begin gathering oranges in Sicily in November, if we except small shipments to London of unripe and undersized oranges from Milasso, 30 miles to the northwest of Messina. This poor fruit is quoted at about 70 cents a box in October; deducting 20 cents for cost of box, leaves 50 cents for the fruit and handling. These oranges are bought by confectioners.

The climate of southern Italy being warmer in summer than that of Sicily (Sicily, surrounded by the deep waters of the Mediterranean, is cooler in summer and warmer in winter than the province of Reggio), and the oranges being generally grown on a light, sandy soil, account for their maturing earlier in Calabria. As just stated, the first gathering of oranges in Sicily occurs in November, but most of the crop is gathered in December and January. The Sicilian grower prefers running the risk of damage by frost (but two crops have been injured by cold during the last twenty years)

to gathering his oranges when they are still too immature. Sicily oranges, which are, of course, not fully ripe when gathered, keep well for forty days. Frequently the fruit when gathered is allowed to sweat in the groves from two to three days, piled on the ground and covered over with tarpaulins; it is then wrapped in tissue paper, boxed up, and sent to the city. Fruit is also sent directly from the groves. All fruit upon reaching the exporters' warehouses is carefully inspected and selected, wrapped in fresh tissue paper, and repacked. Exporters ship their oranges as soon as packed.

COST OF PACKING—SHIPMENT.

During the shipping season large firms in Messina employ as many as three hundred women and girls, paying them 20 to 25 cents a day—nine hours' work. The women select and wrap up the fruit. Men are employed to pack the fruit and handle the boxes; they get from 40 to 50 cents a day. The stevedores handle the boxes with great care. The steamers give all possible ventilation to the fruit during the voyage. Fruit possessing the greatest keeping qualities is sent in sailing vessels to the United States. The duties paid on oranges and lemons entering the United States are as follows: On oranges in boxes, capacity not exceeding 2½ cubic feet, 25 cents per box; half-boxes, capacity not exceeding 1¼ cubic feet, 13 cents per half-box; bulk, $1.60 per thousand; barrels, capacity not exceeding that of the 196-pound flour barrel, 55 cents per barrel; packages not especially enumerated or provided for, 20 per cent.; on lemons in boxes, 30 cents per box; on half-boxes, 16 cents; in bulk, $2 per thousand; in packages, 20 per cent.

Exporters frequently buy the fruit on the trees. Below is given the cost of preparing and shipping a box of oranges or lemons:

Cutting, selecting, and packing in the groves	$0.15
Box, paper, nails, and hooping	.30
Transportation to Messina (average)	.20
Repacking, shipping charges, store rent, and brokerage	.14
Freight, per box, by steamer to New York	.30
Total	1.09

A few firms export fruit to the United States on joint account. Fruit is generally shipped on consignment. Consignees' commissions and auction fees are 6 per cent.

Years ago oranges were preserved in sand for from four to five months, merely for family use. This practice no longer prevails; it would not pay on a large scale, such enormous warehouses would be required and so great would be the expense of handling the fruit. Preserving oranges in bran has been tried; it proved too heating. I have heard of a successful shipment of oranges packed in beech sawdust. The vessel carrying the cargo left Messina in December and reached St. Petersburg in May. Spanish grapes packed in cork-tree sawdust keep from September to March. Preserving oranges by the fumes of sulphur has never been attempted here, lest the fumes might cause the fruit to dry up.

The maturing of oranges and lemons is affected by the altitude, latitude, excessive heat in certain localities, irregular rain-fall, and the nature of the soil.

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Sicily is mountainous in character, and is agronomically divided into three zones :

(1) Marine zone, in which fruit ripens earliest.

(2) Middle zone, extending from 1,500 to 3,000 feet above the sea-level.

(3) Mountain zone, where the temperature is too low and the climate too damp for citrus culture.

The soil has a great influence upon the maturing and keeping qualities of the citri. The fruit ripens earlier on light, sandy soil than on clay soil. Fruit grown on light, sandy soil can not be left long on the trees without its deteriorating in quality—becoming dry and spongy—whereas on stiff clay it can remain with impunity until the end of April. The latest fruit to ripen is that produced on the upper limit of the middle zone—the trees growing in stiff clay soil—which can remain on the trees until the end of June without its drying up or its skin becoming hard and spongy; it must, however, be gathered in July, for should it be left longer on the trees it would injure the new crop.

Fruit grown on a light, sandy soil is small and of a pale yellow, and is of comparatively short keeping. That grown on a clay soil is large; it keeps well and is of a reddish brown. Trees on clay soil resist a drought much better than those on sandy soil. The groves to the southwest of the Palermo district produce much more highly-prized fruit than those on the northwest, the sole difference between them being their clay and sandy soils. As in the neighborhood of Palermo, so in other districts of the province, even where the climatic differences are great.

Fruit in Sicily is known as "mountain fruit" and "sea-coast" fruit. Merchants further classify the fruit according to the soil on which it grows. Fruit grown on a clay soil brings 30 per cent. more than fruit produced on a sandy soil. Mountain fruit is firmer and keeps better; its superiority is attributed to the nature of the soil and not to the influence of the climate. Fruit produced in the plain of Portello, the soil of which is clay, brings the same as that grown on the heights of Monreale.

The fine large oranges that bring a high price in Palermo in summer are allowed to remain on the trees until the end of May, when they are stored in subterranean grottoes. They are produced on clay soil abounding in alkalis and well-decomposed organic matter. In the sides of the mountains, near Palermo, are many grottoes that are cool and well ventilated in which oranges keep nicely during the summer; they are spread two layers deep upon large mats, placed at convenient distances one above the other. Every day or two the fruit is turned over and all the defective oranges are removed. This fruit finds a home market.

The principal orange and lemon groves are on the northern and eastern coasts. The mountains along these shores rise in bold headlands from the

sea, having but a narrow strip of land—the marine zone, of a sandy character—at their base. The soil of the hill-sides—the middle zone—is generally clay. For lack of water for irrigation, oranges and lemons are not grown to any extent on the southern and western shores.

THE LEMON.

The well-known variety of lemon called the "lunare"-lunar, or everbearing, produces blossoms and fruit every month in the year. When, however, during the Indian summer, rainy days are succeeded by dry, clear weather, lemon trees of different varieties immediately put on blooms, and if, owing to the mildness of the season, the fruit sets at the beginning of winter, it will come to maturity in midsummer.

Lemons are divided into two classes, the true lemon and the bastard lemon. The true lemon is produced by the April and May blooms; the bastard by the irregular blooms of February, March, June, and July, which depend upon the rain-fall or regular irrigation and the intensity of the heat during the summer and winter seasons. The true lemon requires nine months to reach maturity, from the bloom in May to the mature fruit in January. There are but three harvests of the true lemon. The first is the November cut, when the lemon is green in appearance and not fully ripe. Lemons of this cut are the most highly prized; they possess remarkable keeping qualities, and are admirably preserved in boxes in warehouses from November until March, and sometimes as late as May, and then shipped. The second cut occurs in December and January. Lemons of the January cut must be shipped three weeks after gathering. At this date the lemon has acquired a yellowish appearance. The third cut occurs in March and April. This fruit is shipped as soon as gathered, spring prices being always high. The uniformity in size of lemons, as we meet them in the trade, is due to the monthly harvestings from October to March. No sizer is used or even known here.

Bastard lemons present well-characterized peculiarities in shape and appearance; their inner skin is fine and adheres tenaciously to the meat; they are hard, rich in acid, and seedless. The bastard lemon produced from the bloom of June 1 is still green the following April, and ripens only towards the end of July. It remains on the tree over a year, and sells well in summer. Besides the March and June bastards, there are yet others that remain on the trees from twelve to eighteen months. The true lemon can be left on the tree until the end of May or the first week in June, but it interferes with the new crop, drops off from overmaturity, and is liable to be attacked by insects. The bastards, on the contrary, withstand bad weather and parasites, and they mature from June to October. It is estimated that four times more oranges than lemons are lost in the groves and warehouses. Good drainage is, of course, most essential in orange and lemon culture.

Table A shows the mean annual price per box of oranges and lemons at Messina for the years 1870 to 1886, inclusive, the figures being official.

ESSENCES.

With three strokes of his sharp knife the cutter peels the lemon lengthwise and lets the peel fall into a tub under the chopping block. He then cuts the lemon in two and throws it from his knife into a bucket. He works with wonderful rapidity and fills from ten to twelve tubs with peel a day and is paid 5 cents a tub, weighing 77 pounds. His left hand and right index are protected with bands of osnaburgs or leather. Decayed fruit is not peeled, as its oil cells, being atrofied, yield no essence.

Fresh peel is soaked in water fifteen minutes before the essence is extracted. Peel that has stood a day or two should remain in soak from thirty to forty minutes, that it may swell and offer a greater resistance against the sponge. The operative holds a small sponge in his left hand against which he presses each piece of peel two or three times, simple pressure followed by rotary pressure. The women employed in this work run a piece of cane through their sponges to enable them to hold them more firmly. The outside of the peel is pressed against the sponge, as the oil glands are in the epicarp. The crushing of the oil cells liberates the essence therein contained. The sponge, when saturated with the essence, is squeezed into an earthenware vessel the operative holds in his lap. He is expected to press the peel so thoroughly as not to overlook a single cell. This is ascertained by holding the pressed peel to the flame of a candle; should it neither crackle nor diminish the brilliancy of the flame the cells are empty. This process yields besides the essence a small quantity of juice and feccia (dregs). The separation of the essence, juice, and feccia soon takes place if the vessels are not disturbed; the oil floats on the juice and the dregs fall to the bottom. These three products derived from the peel have no affinity with each other. As the essence rises to the surface it is skimmed off, bottled, and left to settle for a few days. It is then drawn off with a glass syphon into copper cans which are hermetically sealed. After the essence has been expressed a small quantity of juice is pressed from the peels, which are then either fed to oxen or goats or thrown on the manure pile and well rotted, or they would make too heating a fertilizer.

The yield of essence is very variable. This industry is carried on five months in the year. Immature fruit contains the most oil. From November to April, in the province of Messina, 1,000 lemons yield about 14 ounces of essence and 17 gallons of juice. An operative expresses 3 baskets of lemon peel (weighing 190 pounds) a day, and is paid 20 cents a basket. The essence is so valuable that the operatives are closely watched; they are most ingenious in secreting it about their persons. Six men work up 8,000 lemons a day; two cut off the peel while four extract the essence, and obtain 136 gallons of lemon-juice and 7 pounds of essence. In the extraction of essence defective fruit — thorn-pricked fruit blown down by the wind or attacked by rust — is used. This fruit is sold by the "thousand," equivalent to 119 kilos or 260 pounds, and thus classified: First, mixed lemons, as they come from the groves during December and January, of good quality but not always marketable, often from top branches; second, lemons from March

blooms; third, lemons refused at the packing-houses; fourth, dropped fruit; fifth, shriveled or deformed fruit.

Prices do not depend exclusively upon the classification of the fruit; the locality where it was grown is taken into consideration as well. Lemons grown on clay soil yield more essence and juice than those grown on sandy or rocky soil.

Dealers sometimes adulterate their essences with fixed oils, alcohol, or turpentine. Adulteration by fixed oils is detected by pouring a few drops of essence on a sheet of paper and heating it. Upon the evaporation of the essence a greasy spot will remain. Alcohol is detected by pouring a few drops of the essence into a glass tube in which a small quantity of chloride of lime has been dissolved. The tube is then heated and well shaken and its contents being allowed to settle the essence will float on the denser liquid. To detect turpentine pour a few drops of essence on writing-paper and a strong smell of turpentine will remain after the essence has evaporated. The essence of sour orange, mixed with the essence of lemon, produces an aroma similar to that of the essences of bergamot; the latter is much used by confectioners in flavoring ice-creams, etc.

Equal parts of lemon essence and spirits of turpentine, well mixed (mixture known as *essensa vestrincutale*), remove stains from linen and silk fabrics.

In a bergamot essence establishment at Reggio, on the mainland, is to be seen in operation a hand machine for extracting essential oil. The skin of the unpeeled bergamot is punctured by a system of revolving knives and then gently pressed. It should be borne in mind that the bergamot is spherical in shape, and this machine could not be used on the lemon on account of its shape. A thermo-pneumatic essence extractor, worked by steam-power, has also been invented, but the old system is still in general use in Sicily on account of abundant and cheap labor. The method employed for the extraction of essential oil from the lemon (as given above) applies as well to the sweet and sour orange, to the bergamot, and to the mandarin. But a very small quantity of essence of mandarin is made, and but slight attention is paid to the extracting of essence from the orange flower. The essence extracted from the flower of the bergamot is called *neroli*, and is worth $35 per pound.

Table B shows the total quantity and value of essences exported from Messina for the last eighteen years—1870 to 1887.

Table C shows the value of the essences exported from Messina to the United States for the last ten years—1878 to 1887.

Table D shows the mean annual price per kilogram at Messina of the essence of bergamot, lemon, and orange for the years 1870 to 1886.

RAW AND CONCENTRATED LEMON-JUICE.

When the lemons have been peeled and cut in two, as above stated, they are carried to the press and thrown into large wicker bags, circular in form, made of bulrushes, and are pressed in these bags. If the juice is to be ex-

ported raw only perfectly sound lemons can be used; but if the juice is to be boiled down, one-fifth of the lemons may be of an inferior quality and two-fifths of them pretty well decayed. The juice from sound lemons is yellowish in color, and gives a pleasant aroma; its density decreases with age. With all classes of lemons the yield of juice and its acidity varies considerably from month to month. The amount of juice increases from October to April, its acidity and density decrease, and the same is the case with the density of the essence, owing to the winter rains.

The manufacturing of essential oil and lemon-juice is quite lucrative, but manufacturers, to avoid being taxed on their business, are reticent as to their profits.

An addition of 5 per cent. of alcohol will prevent raw lemon-juice from spoiling. Lemon-juice is adulterated with salt or tartaric acid. Raw and concentrated lemon-juice is exported in casks of 130 gallons capacity. It requires one thousand five hundred lemons to yield 26 gallons (1 hectoliter) of raw juice, while it takes two thousand five hundred to yield the same quantity of concentrated juice, and two hundred thousand, more or less, according to their acidity, to give a cask. Experience has shown that the lemons of the province of Messina, especially from the eastern shore, contain more acidity than the lemons grown elsewhere in Sicily.

The value of lemon-juice is governed by its acidity. The rule is that concentrated lemon-juice shall show 60 degrees of acidity (the juice extracted from the bergamot or the sour orange must show 48 degrees, or one-fifth less than that derived from the lemon; it also sells for one-fifth less than lemon-juice). Formerly a citrometer, known as Rouchetti's gauge, was used to ascertain the per cent. of acidity; now, however, resort is had to chemical analysis, which is more satisfactory both to seller and buyer.* Lemon-juice is used in the printing of calicoes.

Table E shows the mean annual price of concentrated lemon-juice per cask of 130 gallons, and of raw lemon-juice per hectoliter of 26 gallons, from 1870 to 1886.

Table F shows the export of lemon-juice from Messina from December, 1884, to December, 1887.

Of late years a new article, known as vacuum-pan concentrated natural juice of the lemon, has been manufactured here. The juice concentrated by this method contains 600 grains of crystallizable citric acid for every quart. It is exported in casks containing 112 gallons, in half and quarter casks. It is also shipped in bottles of 500, 300, and 150 grains each. This concentrated juice is as limpid as first-quality oil.

There is an establishment here, probably the only one of its kind in Italy, that prepares crystallized citric acid. It takes from three hundred and forty to three hundred and eighty lemons to make a pound of citric acid, which sells at about 43 cents.

*The last two paragraphs are quoted from my report accompanying dispatch 51, dated April 30, 1888.

FRUIT IN BRINE.

Large quantities of sound but unmarketable lemons and sour oranges are packed in brine. The remarks referring to the shipment of citron in brine, contained in my report published in No. 61 CONSULAR REPORTS, February, 1886, are equally applicable to the packing in brine of lemons and sour oranges.

A cask of sour oranges in brine is worth here about $10 at this time. Small lemons in brine are worth about $8 per cask, and good-sized ones about $12. While the custom-house keeps a record of the quantity of citron in brine that is annually exported, singularly enough it keeps no record of the large shipments of other fruits in brine. Fresh and salted fruits are included in the same figures.—MESSINA, *January 8, 1889.*

WALLACE S. JONES,
Consul.

TABLE A.—*Mean annual prices at Messina per box of lemons and oranges for the years 1870 to 1886, inclusive.*

Years.	Lemons.	Oranges.	Years.	Lemons.	Oranges.
1870	$2.15	$1.86	1879	$1.93	$1.23
1871	2.25	1.62	1880	2.30	1.30
1872	2.48	1.71	1881	1.94	1.01
1873	2.95	1.41	1882	1.83	1.30
1874	3.26	1.70	1883	1.44	1.10
1875	3.08	1.53	1884	1.22	1.17
1876	2.33	1.36	1885	1.36	1.12
1877	2.19	1.19	1886	2.00	1.14
1878	2.43	1.07			

TABLE B.—*Quantity and value of essences exported from Messina to the whole world during the years 1870 to 1887, inclusive.*

Years.	Kilograms.	Value.	Years.	Kilograms.	Value.
1870	271,614	$1,310,900	1879	232,738	$806,310
1871	285,091	1,596,500	1880	222,216	1,257,826
1872	303,000	2,424,000	1881	345,923	1,793,675
1873	281,590	1,408,145	1882	367,668	1,387,428
1874	245,031	1,870,190	1883	288,366	1,280,392
1875	283,834	1,368,010	1884	215,910	960,004
1876	326,978	2,604,370	1885	231,427	982,894
1877	306,948	2,313,770	1886	295,036	566,313
1878	252,097	1,624,225	1887	200,000	600,000

TABLE C.—*Value of essences exported from Messina to the United States from 1878 to 1887, inclusive.*

Years.	Value.	Years.	Value.
1878	$165,345	1883	$231,900
1879	271,768	1884	249,680
1880	263,829	1885	137,375
1881	329,765	1886	211,071
1882	209,933	1887	259,111

TABLE D.—*Mean annual prices of essences at Messina for the years 1870 to 1886, inclusive.*

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Years.	Bergamot.	Lemon.	Orange.
	Per kilo.	*Per kilo.*	*Per kilo.*
1870	$6.10	$5.14	$2.55
1871	6.35	6.53	3.35
1872	8.10	8.50	5.86
1873	9.61	7.50	3.87
1874	11.52	6.45	2.95
1875	10.00	5.23	2.43
1876	7.56	5.00	3.18
1877	7.16	4.35	3.12
1878	5.83	3.56	3.22
1879	5.10	3.86	3.04
1880	5.52	5.23	4.32
1881	4.10	4.23	3.47
1882	4.22	4.66	3.88
1883	3.50	2.73	2.47
1884	2.78	1.77	1.05
1885	2.51	1.70	1.80
1886	2.00	1.75	1.87

TABLE E.—*Mean annual prices at Messina for concentrated lemon-juice and raw lemon-juice for the years 1870 to 1886, inclusive.*

Years.	Concentrated lemon-juice, per cask of 130 gallons.	Raw lemon-juice, per hectoliter of 36 gallons.	Years.	Concentrated lemon-juice, per cask of 130 gallons.	Raw lemon-juice, per hectoliter of 36 gallons.
1870	$133.40	$2.30	1879	$115.00	$1.98
1871	167.10	2.50	1880	161.00	3.00
1872	268.00	3.60	1881	159.50	2.53
1873	332.80	5.33	1882	124.43	2.53
1874	297.30	5.13	1883	101.50	.....
1875	213.33	4.10	1884	84.20	.....
1876	163.10	3.00	1885	98.15	.....
1877	158.15	2.63	1886	143.43	.....
1878	144.72	2.30			

TABLE F.—*Exports of lemon-juice from Messina to the following places during the years 1885, 1886, and 1887.*

Places.	Dec. 1, 1884, to Nov. 30, 1885.	Dec. 1, 1885, to Nov. 30, 1886.	Dec. 1, 1886, to Nov. 30, 1887.
	Pipes.	*Pipes.*	*Pipes.*
London	2,687	1,106	2,688
Liverpool	184	280	400
Moscow	8	2	3
United States	241	393	398
Marseilles	164	254	485
Genoa	5	12	14
Trieste	.....	.....	1
Hamburg	107	152	122
Russia	.....	.....	231
Other countries	44	154	96
Total	3,440	2,353	4,438

SHIP-BUILDING IN GREAT BRITAIN IN 1888.

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RELATION OF TRADE TO TONNAGE.

Ship-building is controlled by the demands of ocean commerce. When the volume of merchandise requiring transportation is in excess of the tonnage available at fair remunerative rates, freights advance, profits become abnormal, ship-owners grow enterprising, capital flows in the direction of high dividends, and new ships are ordered. In the years 1881, 1882, and 1883 the earnings of shipping property were fabulous, many ships returned to their owners the whole of their purchase money in three or four years; there was a rush, amounting to a panic, for shares in shipping; to be allotted a sixty-fourth or more in a vessel managed by firms of good standing was a great favor; to be accorded similar favors by unknown, inexperienced managing owners even was highly appreciated; money flowed into shipping from all sorts and classes of men and women; dividends ranging from 20 to 40 per cent. have a fascinating attraction for the coolest heads and most stolid natures. Such in brief was the situation in 1881, 1882, and 1883. The normal demands of commerce, which had been ignored during the preceding years of depression, were supplied, but the ship-yards continued in full work until the annual output culminated in the year 1883 with 1,250,000 tons of shipping—the largest quantity of tonnage ever launched in a single year in the United Kingdom. Ship-building was overdone, there was tonnage available in excess of the demands of commerce at fair rates, freights came tumbling down during the second half of 1883, orders for new ships fell off almost entirely; the tide continued to recede during 1884, 1885, and 1886, until the output of the yards had gradually declined to 480,000 tons in 1886.

A slight improvement was experienced during the year 1887, and the total output of tonnage showed an increase over the preceding year of 97,339 tons; but, upon the whole, the hopes entertained in January, 1887, were not realized during the year, trade remained sluggish, freights continued capricious and generally low, and, consequently, the confidence of ship-owners was feeble and unsteady. Meanwhile, however, time and the elements had been doing their work, wooden ships were going to pieces, steamers were foundering and stranding, so that the requirements of commerce were gradually and certainly overtaking the tonnage available for transportation, and the balance between merchandise and the carrying power again assumed what may be designated as a reciprocal condition.

What constitutes the natural growth of trade and a corresponding increase of carrying power is a question of the deepest interest, but one almost impossible to answer; for it must be borne in mind that the discovery of nitrate in South America, a large cotton crop in the United States, a plentiful wheat harvest in India, Russia, and the West, with a failure of

European crops—elements which scarcely come within the general description of "natural growth and development"—influence the demands upon tonnage in an important way. But it must be conceded that there is a natural growth and development of commerce, and a corresponding demand for increased tonnage, for the population of the world continues to increase, the area under cultivation for breadstuffs and other agricultural products is annually extended, new mines are opened up, new industries are established, and year by year it is discovered that some new products of one country may be exported with advantage to another; therefore there is a gradual increase in over-sea commerce, and a consequent increased demand for carrying power. During the bad years, say from midsummer, 1883, until the end of 1886, this natural commercial growth had been going on; but because of previous overtrading and the general depression over the world, but especially throughout Europe, the demand for increased facilities for transportation was neglected, until finally ship-owners realized that it had overtaken the supply.

THE WORLD'S TONNAGE—LOSS AND GAIN IN TEN YEARS.

The total increase in the carrying power of the world during the decade ending with 1887 is inconsiderable, and much less than is supposed by the general public. While some countries are continually adding to ther merchant navy, other countries fail to make good the ravages of the storm. For example, although the United Kingdom shows an increase during the decade with which we are dealing of something over three-quarters of a million tons, the United States unfortunately shows a decrease during the same period of over 600,000 tons. Indeed, the increase is confined to the United Kingdom, Germany, France, Russia in Europe, and Portugal; and it will be seen by the subjoined tables that only 282,000 tons of shipping were added to the register during the ten years ending with 1887, a quantity which is quite inadequate to meet the increase in the volume of ocean trade during the same decade.

Tonnage of merchant navies of the principal maritime countries in 1878 and 1887.

Country.	1887.	1878.	Increase in 1887.	Decrease in 1887.
	Tons.	*Tons.*	*Tons.*	*Tons.*
United Kingdom	7,296,000	6,492,000	804,000	.....
Germany	1,284,000	1,129,000	155,000	.....
France	993,000	976,000	17,000	.....
Holland	286,000	359,000	.....	73,000
Italy	945,000	1,029,000	.....	84,000
Sweden	500,000	536,000	.....	36,000
Norway	1,524,000	1,526,000	.....	2,000
Russia in Europe	492,000	382,000	110,000	.....
Portugal	80,000	75,000	5,000	.....
United States	1,015,000	1,629,000	.....	614,000
Total	14,415,000	14,133,000	.....	.....

Tonnage of steam merchant navies of different countries in 1878 and in 1887.

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Country.	1878.	1887.	Increase in 1887.
	Tons.	*Tons.*	*Tons.*
United Kingdom	2,313,000	4,081,000	1,768,000
Germany	179,000	454,000	275,000
France	246,000	500,000	254,000
Holland	59,000	108,000	49,000
Italy	63,000	144,000	81,000
Sweden	82,000	114,000	32,000
Norway	52,000	113,000	61,000
Russia in Europe	110,000	130,000	20,000
Portugal	.....	.....	.....
United States	170,000	176,000	6,000
Total	3,274,000	5,880,000	.....

It is right to add, however, that the displacement or removal of tonnage from the register is largely made up by the disappearance of wooden ships, while the increase has been almost entirely in ships of iron and steel, fitted up with modern engines and appliances. The increase in the steam carrying tonnage of the world during the decade ending with 1887 is represented by 2,546,000 tons.

If we adopt the ordinary practice of computing steam tonnage as equal in carrying power to three times the amount of sailing tonnage, then the increase is equal to 7,638,000 sailing tons. But this computation does not seem at all satisfactory. If a parallel is instituted between a sailing vessel and a steel cargo steamer bound from Cardiff to New York, we will readily discover that the carrying power of a steamer does not amount to three times the carrying power of a sailing vessel of the same register tonnage; and we venture to assert that a steamer bound from Cardiff to New York, to return to Cardiff, would not reach the home port before the arrival of a sailing vessel, which left Cardiff with her, in New York. Attention is directed to this point in order that the computation we have adopted, assigning the steamers three times the carrying power of sailing vessels, may be considered and determined according to the judgment of the reader.

ENGLAND'S SHARE IN THE WORLD'S TONNAGE.

Before dealing with the ship-building figures and features of last year, it is perhaps worth while noticing the leaps and bounds by which Great Britain is distancing all competitors for the carrying trade of the world. Ten years ago 67.5 per cent. of the total trade of the United Kingdom was carried in British bottoms; by the end of the decade the percentage had advanced to 76.6 per cent. At the beginning of 1878 the British flag covered 43.1 per cent. of the ocean trade of the United States; the percentage has advanced to 50.7 per cent. During the same decade the proportion of the total trade of foreign powers covered in British bottoms has likewise advanced as follows: That of Italy from 30.9 per cent. to 48.4 per cent.; that

of France from 39.4 per cent. to 41.7 per cent.; that of Holland from 50.7 per cent. to 51.9 per cent., and a similar increase in favor of British tonnage has taken place as regards other countries.

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SHIP-BUILDING IN 1888—THE OUTLOOK.

In submitting a report on British ship-building a year ago, the following prediction was ventured: "It is never safe and seldom wise to hazard a forecast of the future, but it is perhaps safe to say that more tonnage will be launched during 1888 than the British yards have turned out since the great ship-building year of 1883." There was nothing particularly sagacious in the forecast; the signs of prosperity were visible to all who knew where to look for them, namely, in the stiffening condition of the freight market; in the advance in ship-building materials; in the quantity of tonnage on order on the Clyde and the northeast coast; in the growing confidence and enterprise of owners; in the higher prices asked for new tonnage, and generally in the improved tone which pervaded all the various branches of ship-building and auxiliary industries. The prediction has been fully verified. Ship-building has been profitably employed during 1888, while the tonnage launched during the year reached the extraordinary aggregate of 906,131 tons, being the largest output since 1883, and coming within 343,869 tons of the aggregate of ships launched during that year.

Apart from the natural causes which create a demand for more tonnage, some of the less reliable factors already referred to have served to hasten the return of prosperity in ship-building; the rich harvests in Russia and on the Danube and the poor harvests in England and France drew away a large proportion of cargo steamers to the grain trade of those countries, whereupon freights in the Baltic timber trade (an important exportation during last year) advanced from 50 to 100 per cent.; American cotton rates also went up rapidly, tonnage which had previously been struggling hard to avoid positive loss began to yield profits; the long-looked-for dividends from shipping property came as pleasant surprises to long-suffering shareholders; and it is not too much to say that the measure of prosperity enjoyed by British ship-owners during the second half of 1888 has been greater than any thing experienced since the first half of 1883. Ship-builders and owners are satisfied with the profits they are now making; the wages of the men are being advanced in all directions; and it is safe to say that tonnage will be launched during this year (1889) far in excess of even the large output of 1888, if, indeed, it will not exceed that of 1883.

With the close of last year (1888) there were no less than 445 merchant vessels (representing 811,466 tons gross) in course of construction in the various yards in the United Kingdom. At the close of 1887 the tonnage on order was 279 vessels, measuring 439,335 tons, gross, showing a difference in favor of the ship-building year 1889, compared with its predecessor, of ships measuring 372,131 tons, or an increase of about 85 per cent. The vessels now under construction in this country are apportioned among home

and foreign buyers as follows: About 590,000 tons are intended for British owners, something over 54,000 tons for Germans, while about 18,000 tons will go to Spain, about 17,000 tons to Portugal, about 14,000 tons to the countries of South America, over 9,000 tons to France, about the same quantity to Japan, about 8,000 tons each to the British Colonies, Belgium, and Norway, with lesser quantities to owners of other nationalities. In the tonnage now on order sailing vessels show an ever-increasing falling off. Out of a total tonnage of 811,468 tons, the sailing vessels only aggregate 81,670 tons, the United Kingdom taking about 60,000 tons, Germany about 7,000 tons, France, 3,000 tons, the remainder being built speculatively by builders and others, and to be sold to satisfactory buyers when they present themselves.

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It has been shown that ships now on order or in course of construction aggregate within 194,665 tons of the total output of 1888. It follows that the tonnage launched during the current year will far exceed the output of 1888, and the danger, therefore, lies in the direction of overbuilding.

OVERPRODUCTION — THE ADVANTAGE OF NEW TONNAGE.

Indeed, overproduction is almost a certainty, and there is no apparent safeguard against it. It is, however, true that capitalists, large and small, suffered terribly, in many instances to the extent of ruination, in connection with shipping property during recent years; that ignorant and unscrupulous men who had embarked in a trade they did not understand have come to grief or gone to jail; and perhaps people will exercise greater caution now than during 1881, 1882, and 1883 before investing money in shipping property. The financial faith largely held in this country — that no security is safe that yields above 4 per cent. — has probably gained many adherents during the last ten years. But, notwithstanding all this, notwithstanding the terrible lesson and the bitter and painful experience of "sixty-fourthers" during recent years, money will flow into shipping, and overproduction is sure to take place. It must not, however, be assumed that industrial Britain is even now on the threshold of another period of depression, the laws of trade and the history of the past afford grounds for belief that 1889 will be a year of general prosperity. For the ebb to set in almost immediately after the return of the tide would be contrary to the natural laws of trade; nor can it be maintained that the supply of tonnage has yet overtaken the demand of ocean commerce. Moreover, it should be borne in mind that ships become comparatively obsolete in a very few years. No sooner is the transition from wood to iron complete than the movement toward steel sets in; no sooner is the compound engine established in favor than the triple expansion begins to demonstrate its superiority over it; and the progress of improvements in naval architecture, marine engineering, and the various appliances which go to make a complete ship, has certainly not reached finality. The quadruple engine will soon supersede the triple, other improvements will soon be made, and inventions adopted pointing to the superiority of newer ships. Vessels

enjoying all the advantages of the most recent improvements are and will be in a position to make profits and declare dividends, while the old ships are worrying along slowly and expensively at a loss. This fact will continue to influence ship-building favorably, but it bodes evil for the owners of old tonnage.

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It is true that at the present moment there is an unfavorable reaction in the freight market, but this can be accounted for in part by the closing of navigation in the Baltic and on the Danube; by the pernicious corner in tonnage effected by the Bombay syndicate. But these are passing incidents and can not greatly influence the general result. As we have already stated, the evidences of prosperity are apparent everywhere, and we conclude that the eighties will go out as they came in, with prosperity reigning in the ship-yards, among the ship-owners, and generally throughout the trade of the country.

STEEL PLATES.

Steel continues to advance in favor as a material for the hulls of ships, and out of a total of tonnage launched during 1888 of 906,131 tons, no less than 806,706 tons, or 88.9 per cent. of the whole, was of steel. By a reference to the writer's report for 1887, it will be seen that the relative positions of steel and iron used during that year were: 465,792 tons built of steel, against 325,019 tons built of iron, showing an increase last year in favor of steel of 8.5 per cent.

Summary of vessels built of steel.

District.	No. of vessels.	Tons.
The Clyde	232	267,174
The Tyne	94	202,721
The Wear	73	140,418
West Hartlepool	31	70,394
The Tees	19	43,855
The Mersey	11	17,883
Whitby	6	13,267
Dundee	6	8,811
Southampton	5	7,411
Leith	8	6,733
Whitehaven	4	6,544
Aberdeen	6	5,168
Grangemouth	5	4,556
Workington	2	3,982
Londonderry	4	3,735
Blyth	2	2,893
Kirkcaldy	4	1,455
The Thames	4	282
Bristol	2	240
Preston	1	126
West Cowes	1	53
Total	520	806,706
Total for 1887	.....	465,792
Increase	.....	340,914

Vessels built of steel.

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Firm.	Vessels.	Tons.
The Clyde:		
Russell & Co.	23	45,495
W. Denny & Bros.	38	30,143
J. & G. Thomson	2	21,000
A. Stephens & Sons	6	15,315
The Fairfield Company	8	15,299
D. and W. Henderson & Co.	6	14,429
C. Connell & Co.	6	13,803
A. & J. Inglis	4	11,855
London and Glasgow Co.	4	10,045
Caird & Co.	2	9,944
Barclay, Curle & Co	3	9,040
Scott & Co., Greenock	7	7,179
R. Napier & Sons	3	7,047
R. Duncan & Co.	5	6,790
A. McMillan & Sons	4	6,217
Aitken & Mansel	3	5,682
Murdoch & Murray	3	5,295
John Reid & Co	4	5,200
Napier, Shanks & Bell	5	4,729
W. Hamilton & Co.	3	4,562
Fleming & Ferguson	4	2,980
Ailsa Ship-building Company.	5	2,870
Birrell, Stenhouse & Co.	1	1,906
William Simons & Co	5	1,680
Alley & Maclellan	7	1,567
Campbelltown Ship-build'g Co	1	1,508
McKnight & Co	2	1,423
I. McArthur & Co.	6	1,365
D. J. Dunlap & Co.	2	1,100
T. B. Seath & Co.	3	390
Androssan Ship-building Co.	1	350
W. S. Cumming	5	286
Mechan & Sons	45	236
D. McGill & Co.	1	165
Lobnitz & Co.	3	120
Hanna, Donald & Wilson	1	83
Scott & Co., Bowling	1	76
Total	232	267,274
Total for 1887		136,538
Increase		130,636
The Tyne:		
Palmer's Ship-building Co.	22	47,076
Sir W. S. Armstrong, Mitchell & Co.	16	31,869
Hawthorn, Leslie & Co.	10	27,830
J. Readhead & Co.	13	23,045
C. S. Swan & Hunter	8	18,320
Wigham, Richardson & Co.	6	15,875
Tyne Iron Ship-building Co.	5	12,211
R. Stephenson & Co., l'd	3	9,753
W. Dobson & Co.	3	5,958
H. S. Edwards & Sons	4	4,667
Wood, Skinner & Co.	2	3,188
Schlesinger, Davis & Co.	2	1,929
Total	94	201,721
Total for 1887		98,021
Increase		103,700

Firm.	Vessels.	Tons.
The Wear:		
J. L. Thompson & Sons	16	35,121
Short Brothers	9	21,121
James Laing	8	16,969
W. Doxford & Sons	9	14,038
Sunderland Ship-building Co	9	11,186
R. Thompson & Sons	4	8,668
S. P. Austin & Son	5	7,311
Bartram, Haswell & Co.	3	7,180
W. Pickersgill & Sons	4	6,846
J. Blumer & Co.	3	5,820
Osbourne, Graham & Co.	2	4,000
Strand Slipway Co., l'd.	1	2,158
Total	73	140,418
Total for 1887		69,379
Increase		71,039
West Hartlepool:		
W. Gray & Co.	22	50,307
E. Withy & Co.	9	20,087
Total	31	70,394
Total for 1887		51,829
Increase		18,565
The Tees:		
Raylton, Dixon & Co.	11	27,119
Richardson, Duck & Co.	6	12,268
Ropner & Sons	1	2,725
Craggs & Son	1	1,743
Total	19	43,855
Total for 1887		30,593
Increase		13,262
Whitby:		
Turnbull & Son	6	13,267
Total for 1887		2,376
Increase		10,891
Blyth:		
Blyth Ship-building Co.	2	2,893
The Mersey:		
T. Royden & Sons	3	9,832
Laird Brothers	4	4,187
W. H. Potter & Sons	2	3,201
Canada Works Company	2	668
Total	11	17,888
Total for 1887		3,513
Increase		14,375
Dundee:		
Gourlay Brothers	2	4,400
W. B. Thompson & Co.	3	4,190
Pearce Brothers	1	221
Total	6	8,811
Total for 1887		11,929
Decrease		3,118

List of vessels built of steel—Continued.

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Firm.	Vessels.	Tons.	Firm.	Vessels.	Tons.
Southampton:			Workington:		
Oswald, Mordaunt & Co.	5	7,411	R. Williamson & Son	2	3,982
Leith:			Londonderry:		
Ramage & Ferguson	6	6,053	C. J. Bigger	4	3,735
Hawthorns & Co.	2	680	Kirkcaldy:		
Total	8	6,733	J. Scott & Co.	4	1,455
Whitehaven:			The Thames:		
Whitehaven Ship-building Co.	4	6,544	Samuda Brothers	4	282
Aberdeen:			Bristol:		
Hall, Russell & Co.	4	4,570	Newall & Co.	2	240
A. Hall & Co.	2	598	Preston:		
Total	6	5,168	W. Allsup & Sons	1	126
Grangemouth:			West Cowes:		
Grangemouth Dock-yard Co.	5	4,556	W. White & Sons	1	52

Summary of northeast coast.

District.	No. of vessels.	Tons.
The Tyne	94	201,721
The Wear	73	140,418
West Hartlepool	31	70,394
The Tees	19	43,855
Whitby	6	13,267
Blyth	2	2,893
Total	225	472,548
Total for 1887		252,198
Increase		220,350

Comparative figures for northeast coast and Clyde.

District.	No. of vessels.	Tons.
Northeast coast	225	472,548
The Clyde	232	267,174
Excess of northeast coast output over the Clyde		205,374

It goes without saying that the quality of steel used for ship-plates and for boilers has been much improved during the last two years. Questions like corrosion, ductility, and homogeneity are receiving the attention of metallurgists, naval architects, and ship-builders; papers are read upon the various questions arising out of the manufacture of steel at the annual sessions of the great societies of the country, such as the Iron and Steel Institute, the Institute of Naval Architects, the Institute of Civil Engineers, as well as at the meetings of the local societies established in the great industrial centers. The ordinary managing owner of ships knows but compara-

tively little of the chemical and commercial advantages of steel over iron in ship-building, and of necessity he relies upon the representations of the ship-builder from whom he orders his tonnage. Commercially considered, it may be stated in a sentence that a steel ship of equal cost of an iron ship will live longer and carry more cargo than the latter. It must be remembered, however, that a steamer built of steel has, in a general way, many of its component parts made of iron; therefore, the gain in buoyancy of the steel ship over one of iron is less than might be supposed when the relative thickness of plates is considered. But the superior carrying power of a steel ship may be fairly stated at about 12 per cent. Again, if an iron vessel costs £10 a ton, a steel vessel would cost £9 11*s.* 9*d.* a ton of her dead-weight carrying capacity. There is not at the present time any very great difference in the price of steel and iron ships; therefore, the superior buoyancy and lasting qualities of steel ships give them decided advantages over those built of the older metal. This is recognized on all hands, and, as has been shown, still continues to grow in favor, until now iron is being superseded as rapidly as was the case with wood some years ago.

AVERAGE SIZE OF SHIPS BUILT—1881–1888.

An examination of the tables accompanying this report will show that the tendency in ship-building continues to be towards larger ships, as well as to increased speed. The larger the steamer the easier it is to attain a high speed, and it may also be stated that every saving of fuel has led to a proportional increase of power and speed. Moreover, it is well established now that the larger the tonnage the less is the proportion of labor per ton required, which means a relative reduction of labor per ton proportional to the increase of tonnage in a given ship, or, to put it still plainer, one ship of 4,500 tons can be worked much cheaper, as regards labor and other expenses, than three ships of 1,500 tons each.

Comparative figures for northeast coast and Clyde.

District.	No. of firms.	No. of vessels.	Tonnage.	Increase compared with 1887.
				Tons.
Northeast coast	44	276	505,053	220,123
Clyde	47	302	280,056	93,819

The average size of ships built in a given year is liable to be seriously influenced and reduced by the construction of small craft for special services. This proposition applies to the Clyde in respect of the tonnage built last year; for example, we find 27 ships, aggregating only some 7,400 tons, and again, 31 vessels representing only 2,228 tons; and still more glaring examples to the point might be adduced. On the other hand, we have the two passenger ships built by Messrs. J. & G. Thompson, aggregating 21,000 tons and helping to some extent to counteract the influence of a lot of small

craft which enter into the calculation. But notwithstanding what we have said, it will be seen by the following table that the average size of the ships built last year is much higher than was the average in 1881.

Average size of ships.

	1881.	1888.
The Tyne	1,440	1,610
The Wear	1,681	1,898
West Hartlepool	1,767	2,230
The Tees	1,722	2,117
Whitby	1,771	1,900
Blyth	714	1,330
The Clyde	1,256	1,289

SHIPS BUILT FOR FOREIGN ACCOUNT.

Vessels built for foreign and colonial account during 1888 aggregated 143 vessels measuring 166,825 tons, showing an increase over 1887 equal to 30,781 tons. But the tonnage now on order for foreign account in British yards amounts to no less than 160,447 tons, being within 2,000 tons of the total output for foreign account during the whole of last year. As has already been shown, Germany takes nearly one-half of the total, while France and other countries, where bounties and other inducements are offered in favor of home ship-building, are among the customers of British yards.

Summary of vessels built for foreign account.

District.	No. of vessels.	Tons.	District.	No. of vessels.	Tons.
The Tyne	42	60,470	Grangemouth	2	1,216
The Clyde	60	58,901	Blyth	1	1,193
The Wear	15	24,125	Aberdeen	3	1,152
West Hartlepool	2	4,437	Kirkcaldy	1	345
The Tees	2	4,391	Dundee	1	304
The Mersey	5	3,309	West Cowes	3	157
Londonderry	2	2,301	Gloucester	1	30
Workington	1	1,943	Total	143	166,825
Southampton	1	1,279			
Leith	1	1,252	Increase over 1887		30,781

SAILING SHIPS — WOOD AND STEEL.

It is a little remarkable that notwithstanding the falling off in iron ships, wood and composite vessels have nearly held their own with a tonnage of 3,358 against 3,809 built in 1887; moreover, there have been no fewer than 35 steel sailing vessels built last year, aggregating 65,116 tons, against 13 vessels measuring 22,166 tons during 1887. Sailing vessels, as a whole, show a marked increase represented by 81 ships aggregating 81,670 tons, against 70 ships measuring 41,810 tons launched during 1887.

THE TONNAGE LAUNCHED.

The tonnage launched in the various yards of this country during the year 1888 amounts to 906,131 tons, showing an increase of 327,463 tons over the previous year. It will be seen by the tables following that the great

Scottish river shows the largest output, with a total of 302 vessels measuring 280,056 tons, an increase of no less than 93,819 tons over the output of 1887. Then follow the Tyne, with 132 vessels measuring 213,105 tons, showing an increase over 1887 of over 100 per cent.; the Wear, with 75 vessels measuring 142,410 tons, being an increase of 57,196 tons over 1887; Hartlepool, with an output of 72,149 tons; the Tees, with something over 57,000 tons. Then come Belfast, the Mersey, Dundee, Southampton, and other less important ship-building districts.

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Ship-building in various districts.

Firm.	Number of vessels.		Tons.
	Steam.	Sail.	
The Clyde:			
Russell & Co	11	12	45,495
W. Denny & Bros	22	16	30,143
J. & G. Thomson	2	.....	21,000
A. Stephen & Sons	6	1	16,975
The Fairfield Company	8	.....	15,299
D. and W. Henderson & Co	5	2	14,475
C. Connell & Co	3	3	13,803
A. & J. Inglis	4	.....	11,855
London and Glasgow Company	4	.....	10,045
Caird & Co	2	.....	9,944
Barclay, Curle & Co., limited	4	.....	9,340
A. M'Millan & Sons	6	.....	7,737
Scott & Co., Greenock	7	.....	7,179
R. Napier & Sons	3	.....	7,047
R. Duncan & Co	3	2	6,790
Aitken & Mansel	3	.....	5,682
Murdoch & Murray	3	.....	5,295
John Reid & Co	3	1	5,200
Napier, Shanks & Bell	4	1	4,729
W. Hamilton & Co	2	1	4,562
Lobnitz & Co	17	.....	4,364
W. Simons & Co	10	.....	3,110
Fleming & Ferguson	4	.....	2,980
Ailsa Ship-building Company	4	1	2,870
Alley & Maclellan	3	28	2,228
Birrell, Stenhouse & Co	.....	1	1,906
M'Knight & Co	4	.....	1,806
J. M'Arthur & Co	7	1	1,629
Campbelltown Ship-building Company	1	.....	1,508
D. J. Dunlop & Co	2	1	1,500
J. Fullerton & Co	3	.....	1,071
Scott & Co., Bowling	4	.....	744
Androssan Ship-building Company	1	1	511
T. B. Seath & Co	2	1	300
Mechan & Sons	.....	45	236
W. S. Cumming	4	3	225
D. M'Gill & Co	1	.....	165
Hanna, Donald & Wilson	1	.....	83
W. Tyfe & Son	7	.....	82
W. Swan & Co	.....	1	53
Blackwood & Gordon	40	.....	.....
Total	220	122	280,056
Increase compared with 1887	.....	.....	93,819

Ship-building in various districts—Continued.

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Firm.	Number of vessels.		Tons.
	Steam.	Sail.	
The Tyne:			
Palmer's Ship-building Company	22	.....	47,076
Sir W. G. Armstrong & Co	24	.....	32,542
R. and W. Hawthorn, Leslie & Co	10	.....	27,830
J. Readhead & Sons	13	.....	23,045
C. S. Swan & Hunter	8	.....	18,320
Wigham, Richardson & Co	6	.....	15,875
Tyne Iron Ship-building Company	5	.....	12,211
R. Stephenson & Co., limited	3	2	10,173
W. Dobson & Co	8	2	9,046
Wood, Skinner & Co	4	.....	5,326
Schlesinger, Davis & Co	4	.....	5,296
H. S. Edwards & Sons	5	.....	4,894
J. T. Eltringham	8	.....	891
Hepple & Co	5	.....	431
T. Brown	1	.....	150
Northern Marine Engineering Company	1	.....	70
J. P. & C. Winlo	1	.....	30
Total	128	4	213,205
Increase compared with 1887	.....	.....	108,921
The Wear:			
J. L. Thompson & Sons	16	.....	35,121
Short Brothers	9	.....	21,121
James Laing	8	.....	16,969
W. Doxford & Sons	9	.....	14,038
Sunderland Ship-building Company	9	.....	11,186
R. Thompson & Sons	4	.....	8,668
S. P. Austin & Son	4	1	7,311
Bartram, Haswell & Co	3	.....	7,180
W. Pickersgill & Sons	4	.....	6,846
J. Blumer & Co	3	.....	5,820
Osbourne, Graham & Co	2	.....	4,000
Strand Slipway Company, limited	1	.....	2,158
Priestman & Co	2	.....	1,992
Total	74	1	142,410
Increase compared with 1887	.....	.....	57,196
West Hartlepool:			
W. Gray & Co	22	.....	50,307
E. Withy & Co	9	.....	20,087
R. Irvine & Co	.....	.....	1,755
Total	31	.....	72,149
Increase compared with 1887	.....	.....	19,007
The Tees:			
Raylton, Dixon & Co	12	.....	27,295
Richardson, Duck & Co	8	1	18,669
Craig, Taylor & Co	3	.....	6,519
Ropner & Sons	2	.....	2,945
Craggs & Son	1	.....	1,743
Total	26	1	57,171
Increase compared with 1887	.....	.....	21,825
Blyth:			
Blyth Ship-building Company	5	.....	6,851
Increase compared with 1887	.....	.....	4,691

Ship-building in various districts—Continued.

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Firm.	Number of vessels. Steam.	Sail.	Tons.
Whitby:			
Turnbull & Son	6	.....	13,267
Increase compared with 1887	.....	.....	8,483
Belfast:			
Harland & Wolff	5	1	21,112
Workman, Clarke & Co	6	5	12,277
McIlwaine, Lewis & Co	2	1	2,108
Total	13	7	35,497
Decrease compared with 1887	.....	.....	5,782
The Mersey:			
Thomas Royden & Sons	2	1	9,832
Laird Brothers	4	.....	4,187
W. H. Potter & Sons	1	7	3,801
R. and J. Evans & Co	1	1	1,237
Canada Works Company	2	.....	668
J. F. Waddington & Co	6	.....	650
Total	16	9	20,375
Increase compared with 1887	.....	.....	10,093
Dundee:			
Gourlay Bros. & Co	2	.....	4,400
W. B. Thompson & Co	3	.....	4,190
A. Stephen & Sons	.....	1	1,992
Pearce Bros	2	.....	525
Total	7	1	11,107
Decrease compared with 1887	.....	.....	3,138
Southampton:			
Oswald, Mordaunt & Co	4	2	10,051
J. Dible & Sons	.....	1	115
Total	4	3	10,166
Decrease compared with 1887	.....	.....	157
Aberdeen:			
Hall, Russell & Co	4	.....	4,570
A. Hall & Co	4	.....	1,270
J. Duthie & Sons	1	.....	800
Total	9	.....	6,640
Leith:			
Ramage & Ferguson	6	.....	6,053
Hawthorns & Co	4	.....	710
Total	10	.....	6,763
The Humber:			
Earle's Ship-building Company, limited	12	.....	5,610
Smith & Stephenson	.....	4	260
Total	12	4	5,870
The Thames:			
Samuda Bros	2	2	282
T. G. Tagg & Son	3	.....	16
Total	5	2	298

Ship-building in various districts — Continued.

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Firm.	Number of vessels. Steam.	Sail.	Tons.
Various districts:			
Whitehaven — Whitehaven Ship-building Company	2	3	7,969
Londonderry — C. J. Bigger	2	3	4,813
Grangemouth — Grangemouth Ship-building Company	5	.....	4,556
Workington — R. Williamson & Son	.....	2	3,892
Kirkcaldy — D. Scott & Co	4	.....	1,455
Rye — G. & T. Smith	.....	5	300
Bristol — Newall & Co	2	.....	240
Gloucester — W. H. Halford	3	3	239
Falmouth — Cox & Co	1	.....	190
West Cowes — W. White & Sons	4	.....	167
Yarmouth — H. Fellowes & Son	.....	1	152
Preston — W. Allsup & Sons	1	.....	126
Garmouth — Geddie & Co	.....	1	119
Ipswich — W. Bayley & Sons	.....	1	88

Summary.

Port or district.	Vessels.	Tons.	Port or district.	Vessels.	Tons.
The Clyde	342	280,056	Londonderry	5	4,813
The Tyne	132	213,205	Grangemouth	5	4,556
The Wear	75	142,410	Workington	2	3,892
West Hartlepool	31	72,149	Kirkcaldy	4	1,455
The Teas	27	57,171	Rye	5	300
Belfast	20	35,497	The Thames	7	298
The Mersey	25	20,375	Bristol	2	240
Whitby	6	13,267	Gloucester	6	239
Dundee	8	11,107	Falmouth	1	190
Southampton	7	10,166	West Cowes	4	167
Whitehaven	5	7,969	Yarmouth	1	152
Blyth	5	6,851	Preston	1	126
Aberdeen	9	6,640	Garmouth	1	119
Leith	10	6,763	Ipswich	1	88
The Humber	16	5,870	Total	763	906,131

Summary of northeast coast.

District.	No. of firms.	No. of vessels.	1888.	1887.
			Tons.	*Tons.*
The Tyne	19	132	213,205	104,284
The Wear	14	75	142,410	85,214
West Hartlepool	3	31	72,149	53,142
The Tees	6	27	57,171	35,346
Blyth	1	5	6,851	2,160
Whitby	1	6	13,267	4,784
Total	44	276	505,053	284,930
Increase compared with 1887	.....	.....	.....	220,123

The premiership among the yards is taken by Messrs. W. Gray & Co., West Hartlepool, with an output of 50,307 tons, but close upon their heels come the Palmer Ship-building Company, of Jarrow-on-Tyne, with over 47,000 tons; Messrs. Russell & Co., on the Clyde, with over 45,000 tons; followed by Messrs. J. L. Thompson & Sons, Sunderland; Lord Armstrong and partners, Newcastle-on-Tyne; Messrs. Denny Brothers, Dumbarton, and other firms, as may be seen in their proper order and importance as regards output by consulting the tables accompanying this report.

LARGE SHIPS.

The largest ships built for the merchant navy during last year were the City of New York and the City of Paris, launched from the yard of Messrs. J. and G. Thomson, on the Clyde, for the Atlantic passenger trade. The next ship in importance was perhaps the Alfonso XII., built by Messrs. Wigham, Richardson & Company, on the Tyne, for the Spanish mail service. She is the largest merchant ship ever launched on the Tyne, having a tonnage of 5,000 tons, with engines indicating 4,000 horse-power. She is lighted throughout with electricity, and will be available as a fighting ship in the event of war.

Year by year it has been pointed out in the reports of the present writer that the American flag is gradually disappearing from the over-sea trade of the world. Year by year American money finds its way in ever-increasing sums into ships sailed under the British flag; and, as we said last year, it is certainly worth while considering whether something can not be done to enable American capital to be invested in tonnage sailing under the American flag. The present policy governing American shipping in the foreign trade has had a long trial, and has failed; and it is to be hoped that the question will be again considered with a view to finding and applying a remedy.

Vessels built in the United Kingdom for foreign and colonial account.

Firm.	Vessels.	Tons.	Firm.	Vessels.	Tons.
The Clyde:			The Clyde—Continued.		
Russell & Co.	5	11,610	Scott & Co., Bowling	1	76
W. Denny & Bros	4	11,420	T. B. Seath & Co.	1	60
The Fairfield Company	2	5,664	W. Swan & Co.	1	53
London and Glasgow Co.	3	7,166	Total	60	58,901
A. McMillan & Sons	6	6,586	Total for 1887		45,586
C. Connell & Co	3	4,990			
Lobnitz & Co.	17	4,364	Increase		13,315
Aitken & Mansel	2	2,617			
Fleming & Ferguson	1	1,500	The Tyne:		
W. Simons & Co.	5	1,150	Sir W. G. Armstrong & Co.	18	17,974
R. Napier & Sons	1	713	Wigham, Richardson & Co.	5	13,068
J. McArthur & Co.	2	553	Hawthorn, Leslie & Co.	4	9,655
D. McGill & Co.	1	165	Palmer's Ship-building Co.	3	7,414
W. S. Cumming	4	131	C. S. Swan & Hunter	2	4,562
Hanna, Donald & Wilson	1	83	Tyne Iron Ship-building Co.	1	2,850

Vessels built in the United Kingdom for foreign and colonial account—Continued.

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Firm.	Vessels.	Tons.
The Tyne—Continued.		
J. Readhead & Sons	1	1,827
Wood, Skinner & Co.	1	1,526
W. Dobson & Co.	4	1,252
H. S. Edwards & Sons	1	227
J. L. Eltringham	1	78
Hepple & Co	1	37
Total	42	50,470
Total for 1887		48,424
Increase		2,046
West Hartlepool:		
W. Gray & Co.	1	2,059
E. Withy & Co.	1	2,378
Total	2	4,437
The Tees:		
Raylton, Dixon & Co.	2	4,391
Total for 1887		9,158
Decrease		4,767
The Wear:		
W. Doxford & Sons	5	6,276
Sunderland Ship-building Co.	4	4,668
J. L. Thompson & Sons	1	3,800
R. Thompson & Sons	1	3,197
S. P. Austin & Son	2	2,764
John Blumer & Co.	1	2,235
W. Pickersgill & Sons	1	1,185
Total	15	24,125
Total for 1887		21,795
Increase		2,330
Blyth:		
Blyth Ship-building Co.	1	1,193
The Mersey:		
Laird Bros.	3	2,661
The Canada Works Co.	2	668
Total	5	3,329
Londonderry:		
C. J. Bigger	2	2,301
Workington:		
R. Williamson & Son	1	1,943
Southampton:		
Oswald, Mordaunt & Co	1	1,279
Leith:		
Ramage & Ferguson	1	1,252
Grangemouth:		
Grangemouth Dock-yard Co.	2	1,216
Aberdeen:		
A. Hall & Co.	3	1,152
Kirkcaldy:		
D. Scott & Co	1	345
Dundee:		
Pearce Bros	1	304
West Cowes:		
W. White & Sons	3	157
Gloucester:		
W. H. Halford	1	30

Summary of northeast coast.

District.	No. of vessels.	Tons.
The Tyne	42	60,470
The Wear	15	24,125
West Hartlepool	2	4,437
The Tees	2	4,391
Blyth	1	1,193
Total	62	94,616
Total for 1887		79,377
Increase		15,239

CARDIFF, *January 15, 1889.*

EVAN R. JONES,
Consul.

RICE AND SUGAR IN THE STRAITS SETTLEMENTS.

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The supposition expressed in the Department circular of instructions, that it would hardly be possible to obtain exact statistics of the production of rice and sugar, is, as regards my consular district, well sustained. I may venture upon saying that in view of the nature of the country and the condition of matters and things it is impossible. Free trade prevails at the three ports of this colony, viz, Singapore, Penang, and Malacca; there are no custom-houses nor officers. Masters of vessels, or their agents or consignees, are required to send a return (kind, quantity, and value; where from or where to) of all goods imported or exported to the respective port harbormaster for statistical purposes, but they are not sworn to the same. The colonial government might obtain statistics for rice (local growth, consumption, sales, and purchase), census-like, at considerable expense, hardship, and loss of time; but as it is well known that the largest portion of the rice needed to feed the population of the Straits Settlements and adjacent states has to be imported from other countries, it is not done beyond ascertaining here and there, where it can be conveniently done, the acreage of a district planted in rice, and even this can only be approximately correct. The Malay Peninsula is in the main forest-covered, which means that in order to create a rice-field the ground has to be cleared of timber and all vegetation thereon (very hard work), and that the ground cleared is not often of regular shape or correctly measured. The rice-fields are generally found in the neighborhood of old settlements or villages, and in places they are more or less extensive. As to sugar, beyond the settlement of Penang, in the province of Wellesley, the cane is planted in patches or small fields here and there, not for the making of sugar so much as to be eaten raw by the natives. It is essential, before entering upon the details of the various themes upon which I am to report, to give, as briefly as possible, a description of the situation and condition of the settlements embraced in this colony, and the Malay provinces under British protection (governed by the native chiefs by and with the consent and advice of the British Resident near the court of each chief, respectively), near or between said settlements, and will commence with the settlement of Singapore, which is a small island of about 14 miles in length, north and south, by from 17 to 18 miles in breadth, east and west, where it is broadest, and on which the capital of this colony and port of same name is situated. This island is separated from Johore, the farthest southern province of the Malay Peninsula, by a narrow strait. On this island no paddy (Malay word for unhulled rice) is planted, the land in the main not being suitable for that grain. There are not many plantations, *i. e.*, coming up to the dignity of that word, and no cane for the purpose of sugar making is planted on any of these, and only tapioca, Liberie coffee, gambier, pepper, cocoa-nuts, or sundry fruits. These plantations lay at a distance of three or more miles from the municipal limits, all the good lands between said limits and the plantations farther out are chiefly occupied

by small Chinese farmers, who raise vegetables, fruits, fowls, and swine for the supply of the city and shipping of Singapore principally. Some of them also plant small fields of sugar-cane, but none for sugar making, and only for native consumption, cut in small pieces and retailed at fruit stalls.

The population of the entire island of Singapore in April, 1881, when the last census was taken, was 139,208 (I think it was larger, but could not be more definitely ascertained), of which only 2,769 were of the Caucasian race, essentially British, and from other parts of Europe, including the military, the floating population, and prisoners. The great remainder of 136,439 consisted (a few hundred excepted) of natives of Asia, to which the Chinese alone furnished a contingent of 86,766, the remainder consisting essentially of Eurasians (born here), Malays, and natives of India, for all of which rice is the chief article of food, and in proportion of about three-eighths of the Caucasian residents as well. Therefore the consumption of rice (much less so of sugar) is enormous, and all of it, as shown, has to be imported. Since 1881 the population has increased, especially in Chinese, and I think that to-day it is easily 175,000 on Singapore Island.

Next, due north of Singapore, on the peninsula, is the Malay province of Johore, with Muar, bounded on the north side partly by the British settlement of Malacca (say about one-half, west) and the until recently independent Malay province of Paliang (say the other half, east), now under British protection; a pretty large territory, fertile, very rich in minerals, but as yet sparsely populated, chiefly by Malays and aborigines, who perhaps cultivate sufficient of rice to live on, but certainly none more, and no sugar-cane at all. During the last two years, increasingly, Chinese miners have gone there, but they plant nothing and have to be supplied from Singapore. It is called an independent province, but is such to my knowledge only in name, and not in reality. By the treaty the Sultan has made with the British he is, barring a British Resident at his court, as much of a closely allied suzerain as the rest of the chiefs of Malay provinces further north on the west coast, which I shall name as I proceed north to Siamese limits, the end of every district on the peninsula. There are large portions of Johore which are sparsely populated by Malays and some aborigines (called Ya Koous) of the peninsula, who cultivate more or less paddy, and import very little, if anything, on which to subsist, finding all they require in the forests, such as fruits, edible roots, eggs, certain leaves, game, etc., besides the fish they catch. The most of the population is to be found on the sea-shore and along the rivers, of which there are several large ones and navigable for more or less distance, and consists of Chinese and Malays, the former being the most numerous. The Malays are chiefly engaged in timber felling and rafting, which both suits and pays them better than rice planting. I don't think that many Chinese in Johore plant rice, and that the great majority of them are engaged prominently in the cultivation of tapioca, gambier, pepper, and fruits. In some parts of northern Johore and in Muar (say in the Muar valley, which is long, fertile, and the most promising part of the Sultan's terri-

tory), where Chinese settlements are not met with, or very near there, the Malays as a rule plant more or less paddy, which yields a rice of most excellent quality. The surplus not needed for their own consumption they take to and sell at the town of Malacca. There are no tin or other mines in the territory of Johore where the laborers, as in other Malay states, would have to buy the rice needed for their subsistence. What the population of Johore is I can not say with certainty, there being no official authority on which to rely, and I hardly think that the Sultan and his officials knew it themselves or could ascertain it without much expense and labor. But I think that, including the town of Johore with few thousand inhabitants, it is safe to put it down at about 50,000, and that hardly enough rice is grown to feed one-half of that number. The deficiency needed is partly (about three-fourths) imported from Singapore and partly from Malacca. As to sugar-cane, none is cultivated in Johore for sugar making; all of the sugar needed there, except "joggery" or palm sugar (the sap taken from both the so-called "kaboug" and the cocoa-nut palm, tapped near the top and boiled down, like maple-sap in our country, to sugar), much resembling maple sugar, which the Malays make and sell locally and export, has to be imported. I may mention that a great deal of sugar is made from said two kinds of palms on the peninsula of Malacca; in fact, through the whole Indo-Malayan Archipelago, with this difference, that near the sea-coast, where the cocoa-nut palm prevails, this is resorted to, and in the interior the kaboug palm, which thrives well on up and bottom lands.

The "settlement" of Malacca, with town and port of same name, under strictly British rule, is situated due north of Muar aforesaid (temporarily governed by the Sultan of Johore since 1877), and bounded on the east side by the "Negri Sumbilan," which means "nine states," being small Malayan-British suzerain provinces, and on the north side by the Malay province of Sungi-Ujoug, under British protection. This is a pretty large province, about 40 by 40 miles in extent; and much of it being low, alluvial, and marshy, is the very land on which rice can be cultivated with great success. Fully one-half (or more) of this British domain is most excellent rice land. The population consists of Malays, Chinese, and Eurasians, prominently. The census of 1881 for the entire settlement was a total of 93,579 souls, to which the Malays contributed 67,488 (32,759 males and 34,729 females) the Chinese 19,741 (15,721 males and 4,020 females), the rest were Eurasians, sundry Asiatics, and only 40 Europeans. This entire population, it is safe to say, relies on rice as the chief food. No sugar-cane for sugar making is planted there (if there is I never heard it claimed or stated), and only to be eaten raw, but a good deal of palm sugar is made for native consumption, and the surplus not needed there exported. No statement of the annual production of palm sugar can be had (and this holds good for all parts of my consular district), by far the most being made in the remote jungle districts by small farmers keeping no correct account of the production; but I feel certain that it must amount annually to many thousand piculs, and that it is a very important industry.

Sugar-cane, I feel certain, could be grown to fine advantage in certain parts of Malacca I have seen and closely inspected and found very fertile, especially along the Kassaug River, most of which was there more or less jungle-covered. The same lands, also, would answer well for rice produce heavily.

Both Malays and Chinese cultivate rice in Malacca, the former much more than the latter, as they rarely enter upon the cultivation (beyond fruit trees) of other products, which the Chinese do (tapioca for one) and extensively, also gambier and pepper, as well as a great number of indigenous fruit trees of every variety. The production and export of fruits in a favorable season is something astonishing, and at all times large, Singapore depending on Malacca chiefly for fruits. As they yield a good income, many of the farmers rather buy rice than raise it themselves. Much rice is worthless annually grown there; and there was a time when that province produced all the rice needed by the resident population and their live stock, but later on the population increased constantly through immigration from neighboring provinces and from China, many of the Chinese being employed in tin-canneries and producing no grain or other products. Then, later on, certain land and title laws were passed, which I frequently heard and read were found too onerous by the farming population and caused many to leave for provinces giving them easier terms. The Colonial Blue Book for 1887 shows that 21,738 acres were devoted to the cultivation of paddy, forty piculs being considered an average crop per acre. Taking it for granted that since 1881, when the last census was taken, the population increased to about 100,000, at the present this would give (out of 869,520 piculs) a little over 8 piculs per person, or nearly double of what such a population annually would need, and consequently there should be a considerable surplus for export. And there is such an export (in addition to a pretty large quantity of rice devoted to the distillation of "samshu," or rice-whisky,) to the Negri-Sumbilan above alluded to, where, of late years, a number of tin mines, employing many coolies who plant nothing, have been opened, of which no statistics, as far as I know, have been made, probably owing to the fact that the most of this rice is carted eastward, overland, and the rest is taken off in small native river prahus ascending the Muar River, of which also no account is kept. Whatever the actual facts as to cultivation and consumption in Malacca may be, one thing is certain, taking the colonial trade statistics for my authority, that in the port of Malacca alone 232,641 piculs were imported, and only 71,543 piculs exported, or 171,098 piculs of import over export. Now, it is a well-known fact that Malacca is not only fully able to raise and supply its entire resident population (and has people enough to do it), but all the supplies needed in the neighboring provinces, and if that secures proper encouragement (may it concern whom it may), this can be done. The rice produced there, too, is of excellent quality, and consumers gladly pay a little more for it than for imported rice.

North of Malacca (west coast) come the following Malay states, under British protection, viz: (1) Sungi Ujong; (2) north thereof, the Sultanage of Salengor, and (3) north thereof, the Sultanate of Perak, with the sub-provinces of Biruam and Larut, all of them native states, as they are called here, before coming under British rule, when not troubled with internecine (somewhat frequent) wars, or failures of crops from any cause, produced enough rice for home demand, except Larut, which had a pretty large non-cultivating population of Chinese tin miners and was supplied from Penang, where the tin was delivered. They fell under British protection in 1874, and in 1875 Perak revolted. A short, sharp war followed, and many of the people left the country but returned gradually after the restoration of peace and planted their rice-fields. After that the latter were attacked and ruined by a species of jungle rat, causing dire distress. The Government had to send supplies of rice to prevent starvation, and followed it with a policy not to trust to rice alone as chief food for the natives, but to induce them, as much as possible, to plant corn (maize) as well, importing seed for that purpose from the United States. This, however, in most parts of the country, proved a failure in the course of time, chiefly owing to a want of knowledge of proper cultivation, including selection of soil and industry as well, though in certain parts they persevered and plant it to this day, preferring corn to rice. Since British annexation tin mining increased steadily and greatly in all of said Malay states, but most in Salengore, Perak, and Larut, many thousands of Chinese laborers being employed in the many mines (about which I have written in several of my commercial reports), and as they plant nothing they have to buy everything they need for their subsistence. The British Residents of these Malay states have been and are still doing all they can to induce the resident farming population (mostly Malays) to increase the cultivation of paddy, and while in some parts the production is very fair, considering their primitive mode of planting, it must be admitted that the natives, as a rule, are too indolent to come up to anything near justified expectation. As a matter of course the deficiency in rice needed to feed the whole population, which, in the absence of a census report, I believe to be for the said native protected states fully 150,000 to 175,000 souls (probably more), must be imported. If the colonial government could succeed in inducing the Chinese and Pamils to plant paddy I think there would be no necessity of importing rice; a great deal of money would remain in the country, and the latter would prosper much more than it does now, though, through the steady increase of tin mines and consequent enterprises, it has prospered greatly since it came under British protection. No statistics of the acreage devoted to rice planting or the production of rice in any of the said states are obtainable. But it is well known that hundreds upon thousands of acres of fertile alluvial virgin lands await industrious, energetic, and skilled rice planters (it will be a long time before such will come under existing circumstances). The said native states extend from the west coast of the peninsula to about the center of the latter, a chain of mountains extending (like a backbone) from the north to the south through

about the middle thereof. To the eastward of said states lay a part of Pahang (now British suzerain) and the Siamese suzerain Malay states of Tsuiganee, Kalantan, and Patani.

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North of Perak (*i. e.*, north of its sub-province of Larut) follows the British settlement of Province Wellesley with the island of Penang, separated from the former by a strait about 1⅓ miles wide. This is the oldest (*i. e.*, longest annexed) of the Straits Settlements, and was acquired, as well as Penang, from the Sultan of Quedah (a Siamese suzerain Malay state lying due north of Province Wellesley and separated therefrom by the Mudah River) during the latter part of the last century. Penang is the seat of government of the settlement of the same name, including Province Wellesley and the small settlement of the Dinduigs, comprising the group known as the Dinduig Islands, near the coast of Perak, and a strip of land at and near the mouth of the Perak River, acquired in 1874 from the Sultan of Perak, and made a settlement of the Straits Settlements since then. With this settlement I begin first.

The inhabitants of the Dinduig Islands are chiefly devoted to fishing, timber cutting, and brick and tile making, their products going chiefly to Penang for a market. What they cultivate amounts to very little. On the Dinduig Islands, near the mouth of the Perak River, being fine alluvial land, a stock company (head-quarters at Shanghai) obtained a few years ago a portion of it for sugar-planting, but from all I have been able to learn this enterprise has thus far not proved very successful. Some sugar was, I believe, produced, but as one never hears any one speak about the enterprise, one is left to his own surmises. During my long residence here quite a number of European planting enterprises in various parts of the peninsula, most in Johore, inaugurated with a great deal of money, have come to grief from various causes, one being that those entrusted with the management never were planters before and now planters by proxy only, trusting to the superior knowledge of their coolies, with hoes, for anticipated success.

As to Province Wellesley, the largest portion of it is fertile, alluvial land. There, many years ago, European planters (among them old Jamaica sugar planters) opened sugar plantations with more or less success, and they are still in operation. Their estates are well provided with sugar-houses and modern appliances, machinery for sugar making and refining. They turn out very nice, fairly large-grained white sugar, comparing favorably with our American coffee crush-sugar, the latter being a trifle whiter, and it finds very ready sale for family use in the markets of this colony. Very little of it (*i. e.*, the white or bright yellow), if any, is exported. It retails readily at from 6½ for bright yellow to 8 cents for white per cattie (100 catties = 1 picul = 133⅓ English pounds avoirdupois); this has been its almost permanent value for years. The molasses produced on these estates is distilled into rum. According to the Colonial Blue Book for 1887 about 10,000 acres were devoted to sugar planting, and 500 on Penang Island. Whether this is meant for European plantations only, or for both European and Chinese, the said book

does not say, but I think that it is meant for European only as to Province Wellesley, and for Chinese on Penang Island. I think, too, that much more than 10,000 acres are devoted to sugar in Province Wellesley, since it is well known that a great many Chinese farmers and gardeners plant more or less sugar-cane there; that they have no sugar-houses or modern appliances for making sugar, but follow the old, simple, patriarchal way of squeezing the juice out of the canes between cylinders, oxen or buffaloes furnishing the power (the wealthy have steam-power), and that they boil the juice down in iron kettles and pans to sirup and strain it when granulation follows. The sugar thus produced is dark-colored and heavy, and, put in bags, it is taken to Penang for a market, where about $2.50 per picul is a fair average price. In the bazars it is retailed either as "crushed" or in hard cakes, maple sugar-like, at about 4 cents per catty. By far the largest portion of this heavy Chinese bag sugar is exported to England and China, and at different times goodly quantities of it were exported to the United States. The European sugar estates in Province Wellesley are worked by Pamil coolies (Hindoos from the Coromandel coast) exclusively, as they can endure the labor in this trying climate much better than the Chinese, and are more docile and law-abiding as well.

As to rice, much more is planted in Province Wellesley than in any of the settlements of this colony, and the Malay population, which plants the most of it (the Chinese, though, I think are not far behind them), is larger. According to the colonial census of 1881 the entire population of this province was 97,294 souls, in which the Malays led with 61,200 (30,600 males and 30,600 females); next, the Chinese with 22,219 (20,491 males and 1,728 females); and the Pamils with 10,749 (7,823 males and 2,926 females). The rest, 65 Europeans (of which 13 are females) excepted, consisted of Eurasians and sundry Asiatics, all of which, in the main, subsist chiefly on rice. According to the Colonial Blue Book for 1887, 45,000 acres in Province Wellesley were devoted to rice planting and 9,000 acres on the island of Penang; but the said book does not show (and can not be correctly ascertained) how much rice these acres produced. If 45,000 acres in Province Wellesley and 9,000 acres in Penang, total 54,000 acres, produced the average of 40 piculs, or, to take it lower, say 35 piculs of paddy per acre, this would make 1,890,000 piculs. Taking from this sum 25 per cent., or one-fourth, for paddy hulls and siftings, it would have 1,417,500 piculs of clean rice; more than enough to feed the entire population of both Penang and Province Wellesley. But the trade statistics for 1887 contradict such a supposition, as I shall show elsewhere in this report.

Penang Island is about half as large as Singapore Island, and fully one-half of it consists of high, undulating land and a ridge of high hills, from 2,500 to 3,000 feet above the sea-level. The latter are situated on the western part (or shore) of the island, tapering off and forming an angle to the southwest, and on the northeast side there are several fairly high and nicely rounded and wooded hills, facing Province Wellesley promontory-like, as

well as the sea to the north. A light-house was erected not long ago on the northeast promontory, doing good service. All the land lying between the west and northeast hills, and facing the straits, is level, and a goodly portion of it is marshy, or, in heavy rains, covered with water, answering well for rice planting. The most of the low shore land (sandy) is devoted to cocoa-nut palms, and on higher ground there is a profusion of bitelmet palms. The Colonial Blue Book for 1887 claims 1,500,000 betelmet palms for Penang and the same number for Province Wellesley; 4,000 acres of nutmeg and clove trees for Penang and 600 for Province Wellesley. The port and town of Penang lays on the east and southeast side of the island, facing the straits dividing it from Province Wellesley, and the straits in the narrowest part form the port or anchorage of Penang, the entrance thereto and sailing therefrom for vessels of the large sort being to the north, the south entrance answering for light draft vessels only. As to the population of Penang, it was, according to the colonial census of 1881, a total of 90,951, of which 61,924 were males and 29,027 females. Of this total the Europeans had 607, of which 96 were females, *i. e.*, 275 residents, 139 floating population, and 194 British military; the Malays had 21,724 (10,908 males and 10,816 females); the Tansils, 14,271 (11,237 males and 3,034 females). The balance consisted, in the main, of other and sundry Asiatics. Since 1881 the population has largely increased by several thousand, which the next census no doubt will reveal. Very nearly the entire population at Penang depends on rice as the chief article of subsistence. The total population of the entire colony of the Straits Settlements, not including the protected or semi-independent Malay states, named in the foregoing, being, according to the census of 1881, a total of 423,384 souls, of which 281,687 were males and 141,697 females. I think it is safe to say that to-day the number of adults of the rice-eating population would be equal to the said grand total alone. While, as the Department foresaw, it is utterly impossible to obtain correct statistics of the production and consumption of rice and sugar, I find, upon close inquiry, that it is pretty safe to say that the rice-subsisting population requires about 4 piculs of rice (533⅓ pounds avoirdupois) per head per annum, which would require for a year at present, on a rough guess, taking sundry matters and things into consideration, for the colony of the Straits Settlements alone, in the neighborhood of 2,500,000 piculs of rice (15 piculs= 1 ton of 2,000 pounds avoirdupois; 2,500,000 piculs=166,666⅔ tons), and about one-sixth more for the native Malay states. A hard-working Chinese coolie eats rice three times per day and requires from 5½ to 6 piculs per year. Some natives, especially in the towns, eat a good deal of bread (this is increasing), and, all depending on their financial ability, beef, pork, fish, fowls, eggs, vegetables, and fruits, and average about 4 to 5 piculs of rice per annum. The great majority of the rice-eating population is poor, and besides rice, eat only a few simple, cheap condiments (for curry). I inclose with this table marked "A," taken from the recently issued Colonial Trade Statistics for the year 1887, showing the imports and exports of rice at

the three ports of this colony—Singapore, Penang, and Malacca. By deducting the total of piculs exported from the total of piculs imported at each port this will give approximately the quantity retained by local consumption. But it remains to be said that the grain shown to be "rice" on the federal statistics, is, when imported, what is known under the name of "cargo rice;" *i. e.*, not clean, and in reality half-hulled paddy, the outer hull removed and the inner or white hull remaining. In this state it is sent to the rice-cleaning mills before it goes into the market as clean rice fit to be cooked. The cleaning process causes a loss of from 10 to 15 per cent. in hulls, dust, and broken grain-siftings. A great deal of clean rice is also imported from Bangkok and Saigon, where they have complete rice-mills. As the port statistics show no distinction between "cleaned" and "cargo" rice, one can not say how much of either was imported. The sifted, broken kernels go into the market under the name of "black rice," being the lowest grade of bazaar rice, bought by the poorest of the poor, and what they do not buy is bought for stock feeding—to fatten swine—and more or less mixed with paddy as feed for working bullocks.

In addition to rice, much paddy (unhulled rice just as it comes from the planters, the hull not loosened) is imported here, at Penang, and Malacca, to be fed to horses and working cattle. The horse-feed consists, as a rule, of paddy and "gram," a species of pea imported from Upper India (via Calcutta). The average daily ration of a horse is about 8 English quarts of paddy and 2 of gram; for ponies about one-fourth of each less. As there are thousands of horses and ponies and working cattle, all heavy hauling—merchandise, building material, etc.—is done on two-wheeled carts by bullocks and buffaloes here, at Penang and at Malacca, pro rata of local demand, the quantity of paddy required to feed them (as feed) is very large, and at Singapore all of it has to be imported, and, in fact, at Penang and Malacca as well. A horse requires, at 8 quarts per day, 2,920 quarts per year (365 days). The quart is called here the "chupak," and the gallon is called the "gantang" (4 chupaks = 1 gantang, and 20 gantangs, or 80 quarts, are reckoned for 1 "bag of paddy of rice," and the bag is reckoned 1 picul). Thus one horse, per annum, requires (2,920 quarts=730 gantangs) 36½ piculs of paddy per year; but as the paddy bags as imported rarely weigh a full picul, I think that 30 actual piculs (by weight, this being my own experience) may be taken as a pretty correct standard. It is utterly impossible, though, to ascertain what the actual quantity required in the whole colony for horses, ponies, cattle, buffaloes, goats, etc., is, and I can only say that it is very large.

Table "B" inclosed shows, as per Colonial Trade Statistics, the imports and exports of paddy at Singapore, Penang, and Malacca for 1887, quantity and value. By deducting the exports from the imports, we find the quantity retained for local consumption and its average value per picul for the year. I can not ascertain how many horses, ponies, cattle, buffaloes, goats, etc., there are at and near any and all of the three ports of this colony, and only that it goes into the thousands.

Table "C" inclosed shows the imports and exports, where from and where to, of sugar (taken from the Colonial Trade Statistics, at Singapore, Penang, and Malacca, for 1887, quantities and values. By deducting the exports from the imports we find approximately the quantity retained for local consumption for the year. It will be noted in Table C that some sugar was imported at Penang from Germany, and at Singapore from the United Kingdom. This was lump sugar, not obtainable here, for fruit preserving, and powdered sugar, and the German lump sugar (beet sugar) costs less delivered at Penang than the locally-made white crushed sugar.

Table "D" gives the imports and exports at the said three ports for 1887 (in like manner) for joggery, or palm sugar, above alluded to. This is consumed chiefly by the natives, both raw and in cookery.

Now, as to the consumption of sugar, it is exceedingly difficult to rate it on an average per capita per year; but I feel certain that much more sugar was consumed at Singapore in 1887 than the difference between imports and exports in Table C would indicate. But I think I can account for this evident shortcoming very easy, in view that this is a free port, no custom-house; that sugar can not be stored long in large quantities or in bulk (all is shipped in bags or baskets, none in barrels or boxes), in view of ants and other insects in swarms; that retail dealers carry only a small stock, replenishing constantly by one or a few piculs at a time, which the Chinese supercargoes or other employés on steamers plying between Penang or ports in Java, on private speculation, can supply from time to time, or by contract with a firm to the same effect. In other words, sugar is a perishable article in this climate, requiring quick handling and selling. Thus the difference (retention) between imports and exports shown in Table C was, in my opinion, a quantity sufficient for three or four months, or less. My opinion is, that at the present time from 40,000 to 50,000 piculs of sugar (including joggery, and a great deal of it) are required per annum to supply the entire population of the island of Singapore. Those following western civilization use, as a rule, sugar in both tea and coffee, for lemonade, sherbet, ice-cream, cooking, and preserving fruits. Among them are several thousand more or less wealthy, and the shipping, too, lays in needed supplies of sugar. The Chinese, the main bulk of the population, drink, as a rule, no coffee, only tea, and that unsweetened. But they use much sugar in lemonade and other refreshing drinks; in cooking, confectionery, and the preservation of fruits, in which they are great adepts. The wealthy Chinese, and there are many, live well, and use, in my opinion, more sugar than the Europeans. The wealthy Hindoos and Arabs consume a great deal also, and all Hindoos use more or less sugar in cooking and in confectionery, in which rice-flour and cocoa-nut are prominent ingredients, and in preserving and stewing fruits. The Malays, as a rule, don't use much cane sugar, mostly joggery (dissolved in cocoa-nut milk with boiled rice stirred in it. Some of them use it in preserving fruits, and nearly all of them eat the joggery, in small cakes, raw). Upon the best obtainable authority, and following my own judgment, I

average the annual consumption of sugar per capita of the entire population at from one-fourth to one-third of a picul. Last but not least there are a few factories here preserving pine-apples and other indigenous fruits for exportation in tins on a large scale, all of them requiring large quantities of first quality Java or Penang sugar.

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THE METHODS OF CULTIVATING RICE AND SUGAR.

The methods of cultivating rice by the natives of the Peninsula of Malacca, no Europeans being engaged in rice planting, and chiefly only Malays, and in part Chinese, is in the main as follows: About the month of June patches of good, moist land are selected and prepared to serve as nurseries for seedlings to transplant. The ground is well and carefully hoed, and (as an average per farmer) about three-fourths of a picul of good paddy is strewn broadcast on the seed-beds. After germination and the growth of the plants to 7 or 8 inches high, water to a depth of 3 or 4 inches is let in on the land. When the plants are about 12 inches high, more water, to a depth of 6 or 7 inches, is let in and kept in that state. Then the land or rice-field to receive the seedlings is plowed and banked up in partitions or patches of four to six to an acre; and when ready, and rain has fairly set in about the middle of August (beginning of monsoon change), the seedlings are transplanted into the prepared land. Women, as a rule, do this work. They take a bundle of seedlings tied in front and a pointed stick and make a hole in the land about 4 inches deep, and in this they set from 6 to 8 seedlings. As to space, they plant (or hole) about 1 foot apart each way. Before transplanting, the roots of the seedlings are dipped in a solution of powdered bone manure until all are planted. All depends now on the weather; if there is not too much rain or drought, or tempestuous weather, the crop will be good, and yield on an average per acre about 800 gantangs of paddy (at 20 gantangs per picul, this would give 40 piculs=5,333⅓ pounds avoirdupois). To transplant the seedlings after the first good rain in August is the correct thing to do to give them a good start. Many plant later (the procrastinating sort) with varied success. In January and February the crop is ripe and harvested with small cycles.

The whole process of cultivation, harvesting, drying, threshing, and unhulling the paddy to make rice is most primitive, patriarchal, and slow. In harvesting, some cut the straw near the ground (those that plant largely and have bullocks or buffaloes to tread over it on dry, smooth, clayey ground, instead of threshing with flails), and others cut it from 18 inches to 3 feet below the ears. In harvesting, if the weather is fine, the grain is dried on rude platforms made of sticks near the field, and then threshed. If the weather is bad, they hang it up to dry in open at top or grass-covered sheds, if they have much to dry; or, in case of poor, small farmers they hang it up under the projecting roof of the hut they live in. The grain being dry enough for threshing, those that have no cattle to tread it out, beat the paddy from the straw with a small club while holding a sheaf or handful over the edge of a block or large strong box, and pull off with their hands what

escaped the club. To prepare the rice they need for daily consumption (this where more or less remote from a town with a rice-mill) they beat or pound the rice in small heaps with a club until the hulls become well loosened and then they rub it between their hands until the rice kernels drop out. Therefore these people, when they have a surplus of their crops to sell, do, as a rule, not sell rice but paddy. As to the cost or value, including tillers and taxes, of cultivating an acre of paddy till it is harvested and secured, much depends on the locality, circumstances, and conditions in and under which they live and labor. I consulted various authorities. Some claim that in some parts in a fair year they can harvest from 50 to 55 piculs of paddy; in other parts 40 to 45, and in others 36 piculs only. Some value the cost or value of tilling, planting, harvesting, threshing, *i. e.*, planting and securing the grain, as high as $50 or $45, or $40 down to $25 per acre. I think, upon careful reflection, that $30 is a good average calculation within my entire consular district.

The retail price of good clean rice per picul was ten years ago about $2.70, and from $2.50 to $2.60 for second quality. Since then, regardless of wholesale quotations of white or cargo rice, it slowly and steadily increased, and retails at the present time at $3.10 per picul for first, $2.95 for second, and about $2.75 for third quality, and in view that the rice crops are a failure (partial or entire) this season in sundry parts of the rice-producing districts of southern Asia in consequence of long-continued and most unusual drought at planting time prices now, wholesale and retail, have an upward tendency. If the natives on the peninsula had good plows, and were otherwise taught to use labor-saving machinery, and had ambition at the same time to promote their own welfare, they could not engage in a better paying cultivation than that of rice. If properly fostered and encouraged, the territory embraced within my consular district, instead of being a (heavily) rice importing country, could in a few years be made a self-sustaining one, at least. Of this I feel certain, if actual experienced and energetic planters would take hold of it. Speaking about the mode of cultivation and about making ready the land into which to transplant seedlings by "plowing," it is rather interesting to know what sort of a "plow" the natives use. If any one thinks that it is a usual field plow, as used in our country, he is much mistaken. The native takes a medium-sized sapling and makes of it the plow-beam and fastens at the thicker end two bent sticks to answer as plow handles; about the middle of the sapling he mortises a hole to hold the plowshare, sometimes made of iron, but in the remote jungle districts of very hard wood, many species of which abound in the forests. This ground-stirring arrangement called a plow has no land-sides or mold-boards; it is simply a very stout bar, which below the beam fastening takes a gradual inward curve forward, and at and near its end it broadens and there are two arrow or anchor-like shaped flukes that give it the appearance of a small pointed shovel. It looks somewhat like an American single-shovel plow, only that the shovel is smaller and the entire plow is of rude, primitive construction and finish.

To this he hitches his bullocks, or, what is more frequent, only one of the indigenous ponderous buffaloes, with an iron ring or rattan though his nose, between nostrils, to either side of which he fastens a small rope or rattan to answer as rein, which gives the farmers complete control over the beast. On the top of the plow-beam, in the middle of it, he fastens heavy iron or stone weights to enable him to enter as deeply as possible into the wet soil. They manage to stir up and loosen the mud pretty well with this machine, and that is what in the main is needed. The paddy land, it must be remembered, is marshy or low river bottom, and water is let on to it if none is laying on it. Upland or "hull paddy" is also planted in places, generally near the base of a hill on gently sloping land. In this case the plow is not used, but the land is hoed as finely and deeply as possible, and land above it, higher laying, is so arranged by little ditches as to give the rice fields below, even distributed, all off-flowing storm water. Hull paddy, while it produces good, well-flavored rice, gives a smaller, less plump grain than swamp paddy, and as a rule it is consumed by the natives planting it, not sent to market.

As to the mode of sugar planting within my district, as the actual plantations for sugar are at the northern end thereof, in Province Wellesley, and I have never visited that part, I cannot write about it with the same authority as if I had been there, and base what I write upon hearsay; that is, that the European planters cultivate their fields with labor-saving machinery, while the Chinese, ever conservative, stick to their rude Chinese implements, essentially the hoe, and hard manual labor. From all I can gather the same mode of planting and cultivating the cane as in most sugar-producing countries is observed, viz: The rattoons are laid in drills, the latter about 3½ feet apart, and as the rattoons sprout and the cane grows the soil is drawn from between the drills to the latter, giving the field the appearance of ridges and small ditches between them. Chinese planting small fields lay no rattoons, but stick the tops of canes into the drills at regular distances of about 15 inches. When cultivating new or virgin soil no fertilizers are used until signs of weakening in growth are perceivable, when sundry fertilizers (any they can get as to Chinese) are resorted to. The European planters fertilize carefully, using guano, phosphate, and dung. According to the Colonial Blue Book for 1887 there were at Penang two sugar factories worked by buffaloes, and in Province Wellesley thirty-two sugar factories, of which eleven are worked by steam and twenty-one by buffaloes, and also five rum distilleries.

The facilities for shipping rice or sugar, or any kind of merchandise for that matter, at Singapore are first-class, easy, and cheap. The harbor is almost land-locked, and, barring occasional sharp and copious rain-squalls or strong monsoons, lighters can go alongside vessels and discharge or receive rapidly. Steamers lying alongside the wharves, nearly four miles in extent with docks, can, let the weather be what it may, with rare and short-lasting exceptions, take in cargo or discharge in a remarkably short time, large well-covered store-houses being close by.

At Penang there are no wharves. Merchandise, fuel, crews, and passengers have to go and come by lighters or boats to and from the vessels anchored out in the straits, already mentioned in the foregoing, not far from the Penang shore, where the water is deepest. What makes it somewhat unpleasant there is the strong current prevailing at the rate of about 4 miles per hour; but the boatmen are used to this and vessels are discharged or loaded very promptly and comparatively quickly. Large store-houses are near the shore.

As to Malacca, it can not be said that it has a port. The town is situated along the beach for a goodly distance and here and there landward. Transoceanic vessels never go there at all; only steamers and small sailing vessels engaged in the coastwise trade. The water is shallow for over a mile from shore, and beyond that steamers or vessels of from 800 to 1,200 tons may anchor. The roadstead and town is fully exposed to the southwest monsoon from March till September, which renders the discharge or receipt of cargo and passengers unpleasant and difficult. Malacca comes handy as a marketing town for the planters and tin miners thereabouts (settlements of Malacca and adjacent or neighboring provinces) to obtain needed supplies, have repairs made, and to ship therefrom any and all of the products of the country to Singapore and places on the coast that may stand in need of any or all of them. In that way the place at the present time has its importance, but in nothing else.

As to the cost of freight on rice and sugar, if asked with regard to the United States, I can only say that neither Singapore nor Penang have, as long as I have been here, ever exported rice to the United States, and only comparatively very little sugar. For a number of years no sugar has been sent from Singapore and only now and then from Penang as part cargo, answering at the same time as ballast for vessels coming to this port to load sundry Straits produce, and to complete cargo. This Penang sugar, in bags or baskets, was taken as dead-weight, say at 20 shillings to £1 5*s*. per ton. Freight of late years has been very low, and only lately has (sailing vessels becoming constantly scarcer) improved a little—a few shillings per ton The freight rates for sailing vessels bound for Europe are about the same as to the United States.

Saigon, French Cochin China; Bangkok, Siam; and Maulmeim, Rangoon, Chittagong, and Bassein, in Burmah, are the most important rice-exporting ports in southern Asia, and thither many sailing vessels proceed in ballast from this port and Penang after discharging their cargoes of coal, petroleum, etc., to load rice for transoceanic ports, but at what rates of freight I am not prepared to say, many being chartered on private terms. As to the export of sugar, ports in Java and the Philippine Islands have ever been most prominent.

As to the wholesale prices of sugar and rice, the prices of sugar have never experienced a noteworthy change. Dark Chinese sugar, exported to China, England, and the United States, ranged between $2.50 to $3.50 per picul; Province Wellesley sugars, refined, from $4 to $5.50 for light brown

to bright yellow; about $6 to $6.50 for fair white, second quality, and $7 to $7.50 for good white, the highest refined made there; and good white coarse-grained Java sugar commanded a trifle (say 50 cents per picul) more than the last mentioned.

For wholesale quotations of rice, first and second quality, from Saigon, Siam, and Burmah, I inclose Table E, which gives them, taken from the Singapore market report, for every month from January 1, 1887, to the present time. In examining this it will be found that from August to September, this year, the prices of rice rose in an extraordinary manner from 170 to 200 per cent. This violent change must be attributed to an unusual drought in the rice-growing districts of China, as well as in this latitude, and all neighboring islands and countries, preventing the natives from planting their rice crop—the fact that they will have no rice at harvest time, and, further, that they will have to buy what they need until they have a crop. Reports, while writing this, have been received from Sambas (Dutch residency of Poutianak), southern Borneo, that the Dyaks were destitute of rice, and many were starving, and a steamer with 3,000 piculs of rice was quickly dispatched to relieve the most pressing wants. Rice, therefore, will continue unusually dear for months to come, and this will be most seriously felt by all laboring classes, whose staff of life it is, and this, too, at a time when the value of silver is so low.

SUGAR.

The area of land under sugar-cane cultivation in Province Wellesley is about 10,000 acres, 4,000 of which are cultivated by Europeans comprising five estates, which are worked with the latest improved machinery.

The Chinese form a great part of the planting element. About 6,000 acres are under cultivation by them; but they work with rude implements mostly on a very cheap basis, in consequence of which they produce only, or mostly, common dark sugar.

European estates turn out the finer qualities of sugar, viz: Light brown, nearly dry; granulated, off white; white refined. It is, however, almost impossible to get any exact items as to the percentage of any of these qualities produced and sold during the year out of a production of nearly 450,000 piculs at 133⅓ pounds each.

EXPORTS.

The sugars produced in the Straits Settlements find a ready market in the neighborhood—China, India, and the United Kingdom; nothing whatever is exported to the continent of Europe. On account of low prices in the later years, the production has been reduced by 250,000 piculs, so that the exports in 1887 amounted only to about 447,000 piculs, as follows:

	Piculs.	
China	117,907=	$502,016
United Kingdom	57,000=	290,000
Singapore for Siam	44,030=	177,076
British Burmah	30,130=	176,840

	Piculs.	
Native states	21,673=	108,684
Siam, Western Province	8,320=	41,139
British India	18,005=	101,021
Sumatra	99,000=	505,000
Local consumption	50,000=	350,000
Total for 1887	446,065=	2,251,776

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The yield per acre would be thus about 44 piculs, which seems enormous. It must, however, be remembered that the Chinese growers clear out mostly heavy sugar, of which most goes to China, as it is the cheapest; it is commonly known as "basket sugar."

All molasses is used for home consumption and nothing is exported. No figures can be had as to the quantity manufactured. Rum is only produced from sugar by European estates, and about 250 puncheons is the total export.

The consumption of sugar compared for the different nationalities is expected to be as follows: Europeans, one adult each, 100 pounds per annum; Malays, one adult each, 60 pounds per annum; Chinese, one adult each, 45 pounds per annum; Klings and others, one adult each, 40 pounds per annum.

The wholesale price at which the different qualities are sold for export are as follows:

Basket sugar, wet, per picul	$3.50
Brown sugar, fairly dry, per picul	3.75
Light brown, fairly dry, per picul	4.00
White, fairly dry, per picul	5.90
Granulated, fairly dry, per picul	6.50

Retail price from 7 to 12 cents per pound.

RICE AND PADDY.

There is little to say about this staple, as there is no export possible of the quantity grown. The production is far from being sufficient for the requirements of the people of Penang and provinces, and large quantities have to be imported from British Burmah, Java, Siam, and Saigon, which is used for all classes of people, and from Bengal, which is used principally by the Tamil population, this latter class of people requiring the rice to be parboiled when in the state of paddy, and by using this it is not liable to ferment when it is allowed to cool down. A very small export takes place of Province Wellesley rice, however; for instance, the Pacific and Occidental Mail steamers take away monthly to Bombay a certain quantity, as the passengers by these steamers prefer Province Wellesley rice to any other.

The area of land under cultivation in Province Wellesley and Penang is about 40,000 to 50,000 acres, mostly in the hands of Malays, as they plant just as much as they want for a living.

IMPORTS.

As already mentioned, a large import business is done, and the following figures will give an idea of the marketing of this staple:

	Piculs.	
Imports of clean rice from—		
British Burmah	1,829,704	$3,850,348
British India	98,198	201,799
Native states	763	1,884
China (Saigon)	4,773	14,702
Singapore (Siam)	97,070	247,189
Siam (direct)	21,019	44,722
Imports of paddy from—		
British Burmah	1,590	1,558
British India	70	100
Native states	1,412	1,500
Singapore	932	1,020
Siam	106,474	88,659
Grand total of import for 1887	2,162,005	4,453,481

EXPORTS.

	Piculs.	
Exports of clean rice to—		
British Burmah	9,465	27,969
British India	779	1,482
Native states	1,542,317	1,472,722
China	188,126	426,911
Singapore	11,698	29,138
Siam	56,117	146,267
Exports of paddy to—		
Native states	2,640	3,652
China	101,554	149,891
Singapore	5,152	6,998
Siam	322	545
Grand total export for 1887	1,918,170	2,265,575

The import as well as export business are both in Chinese hands, and the grain is carried to and from this port by mostly, say at least, one-half Chinese-owned vessels.

CONSUMPTION.

The consumption of rice is enormous, the people are all, with the exception of Europeans, great rice consumers, and it is believed that an adult person will consume as much as 3 or 4 pounds of rice per day. The Mohammedans are by far the heaviest consumers, as the Chinese go in for pork and vegetables.

The value of rice is generally from August to December the dearest, because new crops come in. In January and February the price for large lots ranges from $3.30 and to $3.75 per bag of 224 pounds; retail price, $4.25 per bag.

ARRAC.

A great deal of low arrac is manufactured from rice and sold under the name of "samsu," the consumers of which are natives of Hindostani and coolies from China.

Paddy is largely used for house and animal food in general.—SINGAPORE, *September, 27. 1888.*

A. G. STUDER,
Consul.

TABLE A. — *Straits Settlements' imports and exports of rice for the year 1887, from the officially published colonial trade statistics.*

Countries and places.	Imports.						Exports.					
	Singapore.		Penang.		Malacca.		Singapore.		Penang.		Malacca.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Piculs.	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*
Arabia							550	1,527				
Australia							43,874	88,931				
Austria							3,352	7,990				
Bali Island (Netherlands India)	18,394	38,660										
British Burmah	1,042,071	2,542,500	1,529,704	3,850,348			853	1,881	9,465	27,969		
British India	34,682	100,771	98,198	201,799					779	1,482		
Borneo proper							1,433	3,301				
British North Borneo							14,055	35,770				
Ceylon							97	272				
China	2,743	8,114	1,637	5,640			2,332	5,229	5,600	14,681		
Cochin China	21,540	40,905					26,190	54,275				
East Malay peninsula	960	1,660					155,623	320,665				
France							2,933	8,799				
French Cochin China	238,210	518,982					3,570	8,427				
French India	1,476	4,377	7,586	22,026			64	256	4	9		
Hong-Kong	19,882	62,172	3,136	9,062			147,610	334,167	182,526	412,230		
Italy							3,375	10,925				
Java	629,327	1,380,684	300	850			4,368	10,180				
Johore							441,339	1,096,875			7,343	17,481
Labuan (Borneo)							9,155	23,358				
Malacca	317	757	377	1,050			87,786	214,633	89,197	235,865		
Mauritius							46	161				
Natunas Islands							33,970	75,058				
Other Dutch islands	9,840	18,200					312,768	803,677				
Penang	27,527	67,218			89,367	220,094	102,917	255,100			48	192
Perak (protected Malay state)			386	834			2,366	5,797	453,120	1,236,857		
Portuguese India							10,638	26,873				
Philippines							322,184	832,792				
Rheo (Netherlands India)	2,900	5,800					92,900	215,800				
Sarawak (Borneo)							65,275	154,129				
Salangore (native protected state)							131,764	326,894			5,562	14,149
Siam proper	956,463	2,112,977					40	90				
Siam (west coast)	480	740	21,019	44,722			1,325	2,390	56,117	146,267		
Singapore			97,070	247,189	143,274	395,592			11,698	29,138	1,295	3,102
Sumatra	80	160	7	20			107,944	263,485	557,356	1,497,873	3,583	8,968
Sooloo Archipelago							11,013	28,523				
Sungie-Ujong (protected Malay state)							12,555	32,438			53,712	136,925
Turkey in Asia							421	900				
United Kingdom							17,228	29,656				
Total	3,006,892	6,904,677	1,759,420	4,383,540	232,641	615,686	2,173,913	5,281,224	1,365,862	3,602,371	71,543	180,817

TABLE B. — *Straits Settlements' imports and exports of paddy (unhulled rice) for 1887.*

[Taken from the official published colonial trade statistics.]

Countries and places.	Imports.						Exports.					
	Singapore.		Penang.		Malacca.		Singapore.		Penang.		Malacca.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Piculs.	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*
Australia							24	48				
British Burmah	192	240	1,490	1,558								
British India			70	100								
British North Borneo							6	16				
China									3,481	4,500		
Cochin China	11,520	11,619					600	654				
East Malay Peninsula	820	833					300	310				
French Cochin China	5,254	8,851										
Hong-Kong							4,705	7,192	98,073	145,391		
Java	43,793	66,040										
Johore							4	8			213	207
Malacca	2,426	4,240	480	480			15	30				
Other Dutch Islands	7,000	7,020					10	17				
Penang	10,907	18,406			200	220						
Perak			932	1,090					2,640	3,652		
Rheo							1,352	1,438				
Sarawak	1,000	1,200										
Salangore							183	237			1,090	1,038
Siam proper	3,490	4,004										
Siam, west coast	180	200	106,474	88,659					322	545		
Singapore									5,152	6,998	4,163	4,219
Sumatra	7,045	7,185	43,555	41,841	56,450	47,068	14	35	1,309	1,658	80	60
Sungie Ujong	84	126									390	383
Total	93,721	129,964	153,001	133,658	56,650	47,288	7,213	9,985	110,977	162,744	5,936	5,907

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TABLE C.—*Straits Settlements' imports and exports of sugar for the year 1887.*

Countries and places.	Imports.						Exports.					
	Singapore.		Penang.		Malacca.		Singapore.		Penang.		Malacca.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Piculs.	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*
Arabia							59	415				
Australia							701	4,150				
Bali (Dutch Malay island)	422	1,340					9	51				
British Burmah							5,387	36,585	30,130	176,480		
British India			7	65			31	178	1,805	10,121		
Borneo proper							52	351				
British North Borneo							682	3,186				
Ceylon							162	1,385				
China	1,090	5,742	16	202					9,712	36,570		
Cochin China							138	552				
East Malay Peninsula							678	4,209				
French Cochin China							3,257	18,095				
French India			43	240			59	421	3	25		
Germany			500	3,200								
Hong-Kong	12,816	88,262	8,175	60,187			160,015	707,682	108,195	465,446		
Java	135,972	729,094					15	80				
Johore							567	3,912				
Labuan (Borneo)							390	2,550				
Malacca	18	108					464	3,378	2,489	10,468		
Mauritius	610	3,782										
Natunas Islands							101	691				
Other Dutch islands	3,469	10,407					4,496	30,465				
Penang	48,767	211,653			1,784	7,240	1,214	8,689				
Perak			1,090	3,110					19,184	98,216		
Rheo	470	3,000					2,841	16,505				
Sarawak							2,033	14,013				
Salangore							1,932	12,492			124	744
Siam proper							11,159	65,415				
Siam (west coast)			140	610					8,320	41,139		
Singapore			3,393	22,932	1,406	10,029			44,030	177,070		
Sooloo Archipelago							329	1,717				
Sumatra	53	127	15	45			2,483	17,529	29,092	163,818	35	281
Sungie-Ujong							118	548			297	1,886
Turkey in Asia							13	63				
United Kingdom	62	836							31,934	101,902		
United States									9,256	28,253		
Total	203,749	1,054,351	13,379	90,591	3,190	17,269	199,385	955,307	294,150	1,309,514	456	2,911

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TABLE D.—*Straits Settlements' imports and exports of "joggery," or palm sugar, for 1887.*

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Countries and places.	Imports.					
	Singapore.		Penang.		Malacca.	
	Amount.	Value.	Amount.	Value.	Amount.	Value.
	Piculs.	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*
Cochin China	15	90	.....	.....	.....	.....
East Malay Peninsula	749	2,170	.....	.....	.....	.....
Johore	868	2,498	.....	.....	18	56
Malacca	4,345	8,600	370	2,164	.....	.....
Total	5,977	13,358	370	2,164	18	56

Countries and places.	Exports.					
	Singapore.		Penang.		Malacca.	
	Amount.	Value.	Amount.	Value.	Amount.	Value.
	Piculs.	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*	*Piculs.*	*Mex. dolls.*
East Malay Peninsula	12	36	.....	.....	.....	.....
Sundry Dutch Malay Islands	14	39	.....	.....	.....	.....
Penang	.....	.....	.....	.....	237	873
Salangore	102	308	.....	.....	23	73
Singapore	.....	.....	.....	.....	3,999	8,025
Sumatra	68	154	.....	.....	2,107	5,736
Sungie-Ujong	.....	.....	.....	.....	75	285
Total	196	537	.....	.....	6,441	14,992

NOTE.—Singapore has 5,781 piculs of imports over exports in addition to locally made and consumed joggery. Penang shows only a small importation and no export, though the circumstances for consuming and the facilities for making palm sugar are about the same as here. Cane sugar being plentiful and cheap there it is possible that less joggery is made. Malacca has an export of 6,423 piculs over imports, besides unknown thousands of locally made and consumed palm sugar (or joggery). The importations from the first four above-named countries consisted in the main of sugar made of kaboug-palm juice.

TABLE E.—*List of monthly wholesale prices of No. 1 and No. 2 rice at Singapore, from January 1, 1887, to September 20, 1888.*

	Month.	Rangoon—white.		Siam—white.		Saigon—white.	
		No. 1.	No. 2.	No. 1.	No. 2.	No. 1.	No. 2.
1887.	January	$104.00	$96.00	$114.00	$104.00	$96.00	$91.00
	February	95.00	93.00	112.00	103.00	93.00	89.00
	March	84.00	83.00	102.00	95.00	88.00	87.00
	April	86.00	84.00	100.00	89.00	84.00	80.00
	May	88.00	86.00	105.00	93.00	85.00	82.00
	June	93.00	91.00	103.00	92.00	88.00	84.00
	July	90.00	89.00	100.00	87.00	81.00	80.00
	August	94.00	92.00	102.00	91.00	95.00	87.00
	September	93.50	92.50	102.00	98.00	88.00	86.00
	October	90.00	88.00	101.00	91.00	85.00	80.00
	November	96.00	95.00	101.00	99.00	83.00	80.00
	December	100.00	98.00	102.00	.....	88.00	81.00
1888.	January	99.00	98.00	105.00	94.00	94.00	84.00
	February	92.00	91.00	102.00	92.00	92.00	84.00
	March	97.00	96.00	104.50	95.00	94.00	86.00
	April	98.00	97.00	100.00	92.00	94.00	87.00
	May	96.00	94.00	110.00	90.00	94.00	84.00
	June	97.00	96.00	103.00	91.00	95.00	84.00
	July	99.00	98.00	108.00	96.00	94.00	90.00
	August	103.00	102.00	110.00	95.00	96.00	89.00
	September	2.60	2.57½	2.87½	2.40	2.40	2.20

PROGRESS OF SOUTH AUSTRALIA.

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The colony of South Australia having just completed the fiftieth anniversary of its foundation, the statistics embodied in this report will give some idea of the rapid strides this country has made in material progress and civilization since it was made a colony five decades ago. Then, like most early settlements, the land presented all the possibilities for the formation of a great colony, and only required labor and population to convert the wilderness into the prosperous towns and flourishing farms that are spread over the land to-day. This has not been done without a great struggle; a struggle that has been more severe than in most new colonies, owing to the irregularity of the rain-fall and the consequent scarcity of water. The numerous checks that the colony has received in its onward march may all be traced primarily to dry seasons and their inevitable result, bad crop and depression among the sheep raisers. Until very lately wheat, wool, and copper have been almost the only products of the colony. When from any cause the supply of the two former has failed, or the price of copper has fallen, the result has been disastrous to the colony. But now that the resources of the land have been better developed, and gold, silver, copper, and tin mining are flourishing industries and the manufacture of jams, agricultural implements, wine, and oil are carried out upon a large scale, the prosperity of the land depends less than formerly on the one hazard of a good wheat crop. Thus the result of seasons of drought will not be so widely felt or so generally disastrous, and the colony in all probability will make far greater progress during the next fifty years of its existence than it has done in the half century that has just passed away. In the details of the progress of the colony and its present status the first item is

POPULATION.

The population at the end of last year was estimated at 317,446, which is only 4,000 more than in 1885, but as the estimate for 1886 was only 312,758, it shows an increase of nearly 5,000 for last year. The subjoined table shows the estimated population of the colony for the past ten years:

1878	248,795	1883	304,515
1879	259,460	1884	312,781
1880	267,573	1885	313,423
1881	286,324	1886	312,758
1882	293,509	1887	317,446

It will be seen that the increase in population from 1878 to 1879 was over 8,000, from 1880 to 1881 over 18,000, from 1881 to 1882 over 7,000, from 1882 to 1883 over 11,000, and from 1883 to 1884 over 8,000. Since 1884 the increase has not been 5,000. The average access to population from 1878 to 1884 was over 9,000, but from 1884 to 1887 it had fallen to 1,500, a decrease of 600 per cent. This is mainly due to the depressed times, resulting from overspeculation in land combined with continued bad har-

vests. The phenomenon of decreasing population in bad times is common to all the colonies, and seems to be the outcome of the oscillations of what may be called a "floating population," who wander from colony to colony in search of prosperous times, and have no home or ties sufficiently strong to induce them to settle permanently in any one province. In addition to that, the newly founded mining towns of Silverton and Broken Hill have been chiefly populated by South Australians, to which colony those towns geographically belong, though they are under the New South Wales administration, but considering that all the business in those places is transacted through South Australia, this colony reaps the substantial benefit of the population. About 15,000 of the population were lost in this way during 1885, 1886, and 1887. However, population is steadily increasing now, especially in Adela de and suburbs, where the former decrease was most acutely felt. Adelaide and suburbs now contain 113,000 souls.

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LAND.

The whole province contains an area equal to 578,361,600 acres, which gives the proportion of three square miles of country to every soul in the colony. The total acreage alienated to January 1, 1888, was 9,860,927, or in the proportion of 31 acres per head of the population. Included in the total are 7,308¾ acres which were taken up last year as workingmen's blocks, containing from 5 to 20 acres each, and leased for twenty-one years at an average rental of 22 cents per acre.

The greater portion of the land alienated outside city and township property has been sold under the "credit selections act," which permits farmers to select land on payment of a deposit of 10 per cent. of the purchase money and spreads the payment of the balance over a number of years. The act has worked fairly well, but it has been found that the upset price of $5 per acre has been in a great many instances too high, and has tended to make the lot of numbers of the small farmers a simple struggle for existence. Of the 9,860,827 acres alienated, 6,310,497 acres have been taken up on credit at a price of $41,902,640.

WHEAT CROP.

About 2,800,000 acres of the land alienated from the Crown were cultivated last year and most of it—2,008,100 acres—was utilized for growing wheat and produced about 20,023,000 bushels of grain, or an average of 10 bushels per acre. It will be seen from the following table that this is the best yield the colony has had since 1875–6:

	Bushels.	Pounds.		Bushels.	Pounds.
1875–6	11	57	1882–3	4	13
1876–7	5	24	1883–4	7	56
1877–8	7	46	1884–5	7	32
1878–9	7	9	1885–6	3	45
1879–80	9	47	1886–7	5	15
1880–1	4	58	1887–8	10	...
1881–2	4	34			

The figures give an average yield of 6 bushels 55 pounds per acre for the last 13 years, which is 3 bushels and 53 pounds less than last year's yield. The low average for the last thirteen years is due in a great measure to the improvident manner in which the farmers sterilize the land by sowing wheat on the same land year after year without any attempt to irrigate, rest, manure, or in any way vary the crop. A second factor may be traced to the large area of land upon which wheat is grown, which is situated beyond what is known as "Goyder's line of rain-fall." This line has been marked down by the surveyor-general of this province, north of which he declares to be too uncertain for wheat growing purposes, and though in one or two years fair crops have been grown beyond this limit, the average yield for that portion of the country has tended to verify Mr. Goyder's statement.

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Out of the 20,023,000 bushels of wheat produced at least 2,000,000 bushels will be required for seed purposes, and say 1,732,500 bushels for home consumption. There would then remain available for export 16,290,500 bushels and this, with some 1,440,000 bushels still on hand at the end of 1887, make a total of 17,730,500 bushels available for export this year. This, at the low average price of 75 cents per bushel, means a sum of $13,297,875 to the colony. Though the yield has been prolific, the sample is not quite up to the average for the past ten pears. The sample this year weighed 66 pounds 11½ ounces.

Decimal return of weight of wheat per imperial bushel.

	Pounds.	Ounces.		Pounds.	Ounces.
1878	66	5	1883	68	9
1879	65	1	1884	67	14
1880	68	0½	1885	66	5
1881	66	6	1886	65	10
1882	67	11	1887	66	11½

A reference to the table of the average yield will show that the weight of the sample does not depend upon the abundance of the yield, for though the sample has been generally of good weight in good seasons, still the best wheat has been produced in the bad seasons, notably in 1883, when the yield only averaged 4¼ bushels, but the sample weighed the heaviest recorded in the ten years, namely, 68 pounds 9 ounces. The reason for this appears partly from the fact that bad harvests have been the result of other causes than dry seasons. Heavy storms, when the grain is ready for reaping, red rust, and grasshoppers have all added their quota at different times towards ruining the harvest.

THE FLOUR INDUSTRY.

The manufacture of flour in South Australia, always a great industry here, has improved in a wonderful manner during the past few years, and the introduction of the roller system has given it a great impetus. The quality of our wheat enables the miller to turn out an article which commands attention in every part of the world, and it is not so surprising therefore that a ready sale is obtainable in places where competition is not

so keen as to cause too great a difference in price between the home and South Australian produced article. It is only lately that China has been drawing supplies from South Australian flour, but during the present season a large quantity has found its way to Hong-Kong. New South Wales has for many years purchased most of her flour in this colony, and during the last twelve months close on to 20,000 tons have been sent to Sydney and some 10,000 tons to Queensland, another old customer. About 3,000 tons have gone to South Africa and Ceylon; New Caledonia and Cochin China have also drawn small lots. For the twelve months ending September 30 75,349 tons had been exported, representing a value of $3,237,315. Of this 60,000 tons are credited to Port Adelaide, Port Pirie coming next with 8,628 tons. For the manufacture of flour there are eighty-five mills in the colony, with a total horse-power of 1,951 and employing 644 hands.

RAIN-FALL.

In no country in the world is the rain-fall a matter of so much consequence as in this province. A succession of dry seasons not only causes wide-spread depression, but absolutely paralyzes all the business of the country. The one great cry of the land is for water, of which it is almost impossible to get too much. The Government has awakened to this fact, and to minimize the effects of long droughts is carrying out large schemes for water conservation, such as the construction of large dams and reservoirs where the rain-fall is good and the conformation of the country affords facilities for such operation. In drier districts, where rain is scarcer, recourse is had to boring, and artesian wells are now fairly numerous in the arid back country and promise to be a great source of benefit to the sheep raisers.

Only twice in the last twenty-five years has the rain-fall exceeded the amount recorded last year, 25.701 inches. In 1883 the fall was 26.761 inches, and in 1875 28.964 inches were registered. By comparing the following table of the rain-fall since 1875 with the table of the wheat yield during the same period it will be seen how uniformly the heavy rain-fall is succeeded by a good crop:

Table of rain-fall for the past thirteen years.

	Inches.		Inches.
1875	28.964	1882	15.742
1776	13.434	1883	26.761
1877	24.949	1884	18.738
1878	22.083	1885	15.887
1879	20.709	1886	14.420
1880	22.226	1887	25.701
1881	18.192		

EXPORTS.

The annual value of the exports of the colony is in a great measure dependent upon the crops, but the highest figure the exports ever reached was

$26,461,110 in 1884, when there was only a medium harvest. The exports for 1887, owing to the failure of the harvest of 1886, and the dullness of the times, only reached $16,742,805. Of this amount $8,754,260 worth, consisting of everything the colony produced, found its way to the United Kingdom, while only $140,530 worth of exports, consisting chiefly of kangaroo skins, reached the United States from here. The total value of kangaroo and opossum skins exported was $249,225, and they were chiefly for the American market, but as the total exports for the States direct was only $140,530 it shows that more than 50 per cent. of the exports from here to the States found its way there from some other country. This is accounted for by the fact that, owing to the want of direct communication between this colony and America, parcels for America are consigned to England, and from thence re-exported to their destination. Of the total exports—about $16,750,000—nearly $14,000,000 were made up of the six following items:

Wool (most ever exported)	$6,790,580	Flour	$3,488,340
Copper and copper ore	1,201,665	Bark	284,935
Wheat	1,801,870	Bullion	360,000

The only remaining articles besides live stock and perishable articles that exceeded $10,000 in value were:

Agricultural implements	$123,995	Meat (preserved and salt)	$22,010
Apparel	10,220	Manganese ore	25,720
Beer	12,310	Potatoes	13,075
Bone-dust	13,290	Saddles and harness	13,960
Boots and shoes	15,650	Kangaroo-skins	197,840
Butter	15,080	Rabbit-skins	37,670
Eggs	148,110	Opossum-skins	13,510
Bran	120,775	Sheep-skins	492,210
Pollard	33,315	Soap	48,720
Hay and chaff	184,430	Tallow	43,065
Iron girders and columns	31,740	Tannage	18,020
Jams and jellies	116,465	Vehicles	53,330
Leather	186,845	Unenumerated articles	25,100
Manure	17,835	Wine	118,935

The item of wine has been steadily increasing in the amount exported, and since the Indian and Colonial and Adelaide jubilee exhibitions the trade has assumed much larger proportions. The wines made here are finding great favor in the English market, where they are considered to compete favorably with the best French wines. The amount of wine annually produced now is 600,000 gallons, from 4,850 acres of vineyard. In 1886 the acreage under cultivation for this industry was 6,679 acres, and the wine produced was 895,000 gallons, but of much inferior quality to that now manufactured. The large wine-makers now buy the fruit of the small grape growers, and by this means the product is kept more uniform in character and can be reproduced year after year.

BARK.

The supply of wattle-bark which this colony produces is practically unlimited in extent, and is one of the finest tanning agents in the world. The following is the report of the royal imperial commissioners for the colonial and Indian exhibitions: "They have an admirable tanning agent in the bark of the *accacia mimosa*, or wattle, as it is spoken of in the country. The leather produced by this bark is some of it of bright color and high excellence, and large quantities are sent to England, where it sells as readily as the production of their tan-yards. The black wattle-bark is the richest in tanning properties, and the best is that shipped from Adelaide, where the chopping, grinding, packing, etc., are as well done as they are capable of being." The wattle grows wild now, but would prove an immense source of revenue to cultivate, as the trees would yield easily a ton to the acre, and at $37 or $40 per ton would pay the small expenses incident to cultivation and an almost princely profit.

IMPORTS.

The import trade of the colony for the past year reached the value of $25,481,465, and though this amount is less by $5,750,000 than the imports in 1882, it shows a large increase over the past year (1886), for which the figures are $24,113,750, and a slight decrease on the $26,445,070 imported in 1885. The imports from the United States declined from $914,865 in 1885 to $852,520 in 1886, and last year there was a further drop to $571,220, a clear indication that from some cause the trade between this colony and the United States, which might be developed to an unlimited extent, has gradually fallen away. The English imports have also fallen off, especially between 1885 and 1886, when the decrease amounted to $3,940,000, and last year was $125,000 less than in 1886. The increasing trade between this colony and New South Wales has been mainly responsible for this. In 1886 the trade between here and Sydney showed an increase of nearly $5,000,000 over 1885, and last year about $1,250,000 over 1886. The imports from Queensland have also grown a hundred per cent since 1885, when they were valued at $370,000. Trade between this and the remaining colonies during the last three years has shown a decided downward tendency. At all events, the figures show that the merchants in this colony are not so wedded to English manufactures as to decline to go elsewhere, and a little energy on the part of American houses could increase a hundred-fold their present exports to this colony, which, in the undeveloped state of its manufactures, affords such a splendid field for the more matured manufactures of older nations. That there is a wide field here for American enterprise and trade may be easily gathered from the following table of articles imported last year and whose import value exceeded $25,000,000:

Wool	$3,865,000	Cotton, linen, and woolens	$1,180,000
Sugar, molasses, and glucose	1,390,000	Tea	605,000
Drapery	1,360,000	Apparel	530,000
Bullion	1,185,000	Beer	530,000

Bags and sacks	$530,000	Dried fish	$115,000
Boots and shoes	415,000	Deal and battens	115,000
Coal	395,000	Coffee, raw and roasted	85,000
Spirits	390,000	Malt	85,000
Machinery	370,000	Boards	80,000
Drugs	275,000	Carpet and druggeting	70,000
Oil in bulk	275,000	Candles	70,000
Galvanized iron	225,000	Wine	70,000
Tobacco, cigars, and snuff	200,000	Wood spans and quartering	65,000
Fancy goods	195,000	Leather	60,000
Books	185,000	Potatoes	60,000
Hardware	180,000	Rice	60,000
Agricultural implements	180,000	Hops	60,000
Tweeds and cloths	165,000	Musical instruments	60,000
Furniture	140,000	Plate and plated ware	55,000
Bar and rod iron	140,000	Glass and glassware	55,000
Wire	140,000	Earthen ware and china	55,000
Stationery	140,000	Jewelry	50,000
Wood (unenumerated)	135,000	Chocolate	45,000
Grain, barley, and maize	135,000	Clocks and watches	45,000
Oats	130,000	Nails	30,000

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The articles in the above list supplied by Great Britain were chiefly machinery, iron-mongery, printed books or stationery, drapery of all sorts, spirits, drugs, jewelry, tweeds, cloths, and every variety of manufactured articles. The imports from the United States consisted chiefly of kerosene and other mineral oils, tobacco, and musical instruments, thus leaving the bulk of American manufactures comparatively unrepresented. England monopolized 44.1 per cent. of the entire trade, and the other colonies 45.1 per cent., whilst the imports from all foreign countries, including America, only reached 6.5 per cent. upon the total amount.

The protective tariff which was adopted last November will probably have a deterrent effect upon the import trade during the current year, and this will probably be more marked as time goes on and manufactures which have risen under the sheltering wing of protection commence to put forth their supply. However, the tariff, though distinctly protective, is by no means prohibitive, and the free-list is the most extensive of all, consisting chiefly of articles which the colony affords no facilities to produce. The large import of wool into the colony is due to the South Australian ports being easier of access to many of the back country stations in Victoria, Queensland, and New South Wales.

VITAL STATISTICS.

It is a feature in South Australia, as well as in the statistics of all the colonies, that there has been for many years a steady decrease in the birth and marriage rates.

It is somewhat difficult to account for the falling off in births, and the explanation, if any, would probably be more readily ascertained by an inquiry into the morals of the community than by an analysis of its commer-

cial status. The marriage rate is always low in depressed times, and the present falling off in the number of marriages may possibly be due to the wave of dull times which has swept over the whole world during the last few years. In 1878 there was an average of 38.22 births per thousand of population in this colony, and though the average has fluctuated a little since it now stands at 35.07 per thousand. Marriages in 1878 averaged 9.47 per thousand, but in 1887 they only reached 6.40 per thousand, a fall of nearly 33 per cent.

The death rate has declined from 15.44 per thousand in 1878 to 12.77 in 1887, which is the lowest death rate in the colonies. This low rate may be traced pretty clearly to the adoption of the deep drainage system in Adelaide and some of the suburbs, and it is mainly there that the great decrease in the number of deaths has been apparent. The following is a decennial return of the proportion of the births, deaths, and marriages to the living population of the colony:

Proportion to every 1,000 of the population.

Year.	Births.	Marriages.	Deaths.
1876	38.22	9.47	15.44
1879	38.81	8.77	14.04
1880	38.81	8.66	14.79
1881	37.11	8.00	13.90
1882	36.64	8.55	14.84
1883	36.64	8.33	14.55
1884	37.69	8.13	15.24
1885	37.70	7.65	12.38
1886	35.32	6.24	13.38
1887	35.07	6.40	12.77

Possibly all the birth, death, and marriage rates would be somewhat lower if the actual population of the colony could be definitely ascertained, but there has been no census taken since 1881. A census should have been made in 1886, but owing to the bad financial position of the colony then it was decided, for economy's sake, to make no census and to abandon the annual collection of the live stock and agricultural returns. In those matters, therefore, all the figures should be taken as approximate. They are chiefly compiled from the returns of the daily papers, who spare no pains to insure their accuracy, but being unsupported by act of Parliament they have no means to compel those who are unwilling to furnish returns to send them information.

MINING.

The mining industry in this colony has received a great impetus by the discovery of the Broken Hill and other mines in the Barrier district of New South Wales, about 9 miles from the South Australian border. As mentioned before, these places belong geographically to this colony. Though situated in New South Wales, the population is mostly derived from here, and the greater part of the trade and the substantial benefits of the discovery flow into this province. A branch from this colony's main trunk line of railway brings Broken Hill within sixteen hours' journey of Adelaide.

The Broken Hill proprietary mine is one of the richest silver mines ever discovered, and it is said to rival even the great Comstock mine. The lode is several miles in length and varies from 60 to 100 feet in width. The weekly output of ore from the mine varies from 1,200 to 1,500 tons, which yield from 40 to 45 ounces of silver per ton. The capital of the company is $160,000, in shares of $100 each, issued as being paid up to $95. Dividends are paid at the rate of $10 per share per month, and already $2,520,000 have been paid in this way. The shareholders have also received for block 14 shares in that company whose value was $2,160,000. For blocks 15 and 16, $2,880,000 in cash and 80,000 $25 shares, fully paid up. For block 10 they received 96,000 $50 shares, paid up to $48. This makes a total of $14,120,000 received by each shareholder in two years for an original investment of $95. All the skilled labor for the mine has been imported from America, notably Mr. Patton, the manager, who filled a similar position at the great Comstock. Mr. Schlapp, the underground manager, occupied a like situation at that renowned mine. The assayer is also an American. There are numerous other mines in the district which are not doing as well as they might, owing to the difficulty in obtaining machinery to concentrate ores which are easily obtainable from extensives lodes that are not of a rich description. There is a wide field open here for the ingenuity of machinists in America, who might make an immense trade with this colony by manufacturing machinery of the nature indicated.

Some silver mines of great promise are also being developed in South Australia proper about 250 miles from Adelaide and bid fair to be equally as productive as the Barrier reefs. The deposit is said to be 20 or 30 square miles in extent, with lodes that exceed 100 feet in width. Assays of ore from the field have given from 60 to 100 ounces of silver per ton and from 40 to 60 per cent. of lead. In spite of all these finds the share market is dull, owing partly to the reaction after the excited state of the market when the discoveries were first made and partly to the natural delay that must occur between the floating of the companies and the proper development of the mines.

The revival of the price of copper through the operations of a French syndicate has given a fresh impetus to the working of the copper mines here. Most of the mines were closed and the towns around them robbed of half their inhabitants, and the houses fallen to decay, but the rise in the price of copper has stimulated the mining companies to fresh exertions, and has induced the opening up of new mines that would not pay to work during the time that copper was quoted at the low figure of $156 per ton. The Moonta and Wallaroo mines are in full work again and are paying good dividends. During 1887 there was a larger amount of copper exported than in any year previous, except in 1884, when the amount exported was 91,441 hundredweights of copper and 23,968 tons of ore exported last year. Though the amount of copper and ore sent away last year was, except one, the largest amount exported in one year, the money return for it was the lowest but

once, viz, $1,599,770. The lowest value was in 1886—$1,376,400 for 72,711 hundred-weights of copper and 14,782 tons of ore.

Gold mining is progressing steadily, and in addition to the Teetulka and Woodside finds a fresh discovery is reported beyond Terowie, about 180 miles from the capital. The reefs appear to be of exceedingly rich description, and quartz that has been tested has given from 6 to 140 ounces per ton. Gold has also been found in the McDonnell ranges near the reported find of rubies. The reefs there are extensive and rich and afford a great opportunity for thorough miners to make a fortune.

There has been a great deal of excitement over the reported find of rubies in the McDonnell ranges in the far North, but from the report of experts in England it appears that the gems are only garnets of a very superior kind. It is probable that mining in all its branches will receive a very great stimulus when the act legalizing mining on private property, which is now before the legislature, becomes law. Now that the finds of gold are so extensive it might be pointed out that America might command the whole trade and supply the demand for gold crushing and concentrating machinery, which now, for the want of a little pushing, finds its way to England and the other colonies.

SHIPPING.

The shipping trade in the colony shows a large increase in the last few years, both in cargo and passenger steamers, but the sailing-vessel trade is steadily growing weaker as the greater facilities for transferring cargo and the shorter times in which steamers deliver it increase. There are two lines of mail steamers, the P. and O. Company and the Orient Company, both of which receive aid from the English and colonial governments. Their fleets are composed mostly of steamers whose tonnage exceeds 5,000 tons. In addition to these the Messagerie's Maritime Company's boats and those of the Nord Deutscher Lloyds Steam-ship Company call every month. Both of these lines are subsidized by the governments of the countries to which they belong. There are several lines of British cargo steamers that call, and the British India Steam Navigation Company's boats put in an appearance occasionally. It is most noticeable that there are no steamers from the United States calling here, although there is a splendid opening for them. Most of the prominent mercantile marine countries in the world, except the United States, are represented by steamers calling for our trade. The San Francisco mail steamers only come as far as Sydney, and as a result this colony has to pay 38 cents per pound for the carriage of letters that come by that route from Sydney to Adelaide, and for which the United States makes no allowance to this Government. This could easily be obviated by the steamers calling here via Melbourne, and would be the means of opening up direct communication between here and America. In course of time the vessels that are trading here now will have obtained such root in commercial circles that any opposition then will be a tedious and expensive undertaking. Only 17 vessels arrived here from American ports last year, and out of this number

only two ships, whose combined tonnage only reached 1,400 tons, were flying the American flag. The remainder were all foreign vessels that were doing the trade that America itself neglected. Latest advices state that a large company has been formed in Hamburg for the purpose of running a line of boats from there to Australia. It will be seen from the following decennial statement of the number and tonnage of vessels arriving at Port Adelaide that 1884 was the best year in the last ten, both as regards the number of vessels and tonnage outward and inward. Since then the large steamers calling here have naturally decreased the number of smaller vessels.

Years.	Arrivals.		Departures.	
	No.	*Tonnage.*	*No.*	*Tonnage.*
1878	1,026	452,738	1,035	452,535
1879	1,092	467,729	1,039	465,182
1880	1,045	590,085	1,111	610,819
1881	1,072	640,885	1,081	628,606
1882	1,113	675,441	1,099	661,771
1883	1,062	748,926	1,074	755,839
1884	1,120	909,334	1,111	925,197
1885	1,072	893,092	1,091	913,950
1886	859	770,922	878	787,554
1887	907	841,422	905	836,461

It is interesting to note that during the last ten years the annual number of ships arriving at our port decreased 11.6 per cent., but the tonnage increased 85.8 per cent., so that though the number of vessels that arrived last year was 119 less than in 1878, their tonnage was greater by 388,684 tons.

The following is a list of vessels owned and registered in the colony: Steamers, 88, tonnage, 11,481; sailing vessels, 134, tonnage, 15,583; barges, hulks, and lighters, 82, tonnage, 7,804; total, 307 vessels, tonnage, 34,868, or an average of a little more than 112 tons each. The Government vessels are not included in this. They consist of 8 steamers, 2,220 tons; 7 dredges, 1,800 tons; 3 launches, 50 tons; 8 light ships and hulks, 420 tons; 9 barges, 2,000 tons; 53 pontoons, 2,000 tons; 6 life-boats and H. M. C. S. Protector, 1,000 tons, 10 guns, and equipped in the most complete manner with the latest improvements.

FOREST DEPARTMENT.

This department is developing into one of the most useful departments in the colony, and is yielding a revenue that promises to be of substantial value to the colony. The forest department was first established in 1876, and since then natural forests have been protected and reserves granted, which have been planted with trees of a useful description. These have all been wonderfully successful, and, as tree nurseries, bring in a good income. In the northern district of the colony there are eight reserves containing 23,134 acres, in the western district one reserve of 4,174 acres, in the southern district nine reserves containing altogether 45,440 acres; in all twenty-four reserves containing an aggregate of 165,324 acres. Additional

to this are 6,685 acres of land inclosed and devoted to the purpose of planting and encouragement of a natural growth of trees in the indigenous forests. There are six nurseries under the department of an aggregate area of 33 acres, from which about 1,000,000 trees have been raised annually, but it is hoped, with recent improvements, to double this number in future.

Last year the expenditure for this department was $27,315, and the revenue $40,615. Since the establishment of the department the expenditure has been $290,000, and the revenue $295,000. Thus the whole work of the department has been carried on without any actual expense to the country, and at the same time the reserves are valued at $750,000, and are a permanent source of revenue. A contract has been entered into by the forest department with the Broken Hill proprietary mine for the supply of 200,000 feet of sawed timber per month for the next three years. Besides smaller contracts, large quantities of railway sleepers are supplied to the Government as required. To encourage the planting and culture of trees an act has been passed authorizing the payment of $10 per acre for every acre planted by a land-owner, under certain specified conditions.

RAILWAYS.

The railway system of South Australia now extends over 1,499¾ miles, and there are 273¼ miles in course of construction. The lines extend nearly 690 miles to the north of Adelaide and nearly 200 miles to the south. The most important line yet opened is the one to the Victorian border, which connects this city with Melbourne and Sydney. The distance by rail from here to Melbourne is 510 miles, and the express train occupies 18 hours in performing the journey. There is railway communication with Broken Hill, a distance of 310 miles, which taps all the trade from the Barrier district.

The transcontinental line, from Adelaide to Port Darwin, is completed nearly as far as Angle Pole, 690 miles north of Adelaide. There is a line being constructed from Palmerston, in the northern territory, to Pine Creek, 146 miles, which line it is proposed to push inland and eventually connect with the trans-continental line, of which there are still 1,000 miles to construct. There is considerable difference of opinion about the construction of the intervening 1,000 miles to complete the line. Many are averse to the colony increasing its public debt to the extent that would be necessary for finishing the work. There seems to be a growing disposition to have it finished on the land-grant system. American capitalists who have had any experience in this kind of work would find here a splendid opening for them. The line will traverse some of the richest grazing and mineral country on the whole continent, besides opening up a route that would, with efficient steam service, bring the colonies in the matter of mail communication several days closer to England. The railway returns show that the total cost of construction of the railway in the colony has been $48,531,185, and the revenue was $4,298,140, or 4.45 per cent. on the total cost of construction. The average interest on the money borrowed for construction is 4 per cent., so that the money invested in railways has, after paying interest

on money borrowed, contributed 0.45 per cent. profit to the general revenue. The total working expenses were $2,170,000 and the earnings $4,330,000, leaving a profit of $2,180,000. This is the best return the railways of the colony have made, for in no previous year has the excess of receipts over expenses been sufficient to cover the interest on the original cost. The railways have now been placed under a board of three commissioners, who are not subject to parliamentary control. The chairman of the board is Mr. J. W. Smith, who was manager of the Great Western line in England. His two colleagues are Mr. Hill, who has been manager of a large coaching company for many years, and Mr. A. S. Neil, a gentleman of wide commercial experience. It is hoped that under this management the railways will be considerably more profitable than hitherto.

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SKINS.

Perhaps the largest item of trade between this colony and the United States consists of kangaroo and wallaby (a smaller marsupial) skins. Owing to the growing demand for these skins large parties are engaged in catching these animals, male and female, old and young, in season and out of season, and as they are classed as vermin by the Government there is no close season, and these marsupials will very soon be exterminated. Considering the prospects of this trade, and the extent to which it might be developed, the Government should take some step to prevent the total destruction of these animals and encourage their production within inclosed areas. The tails and hind-quarters are considered a delicacy, and a large trade might be done by preserving them. At present the slaughter is conducted on a wholesale principle. The animals are driven in great numbers into an improvised stock-yard and are then knocked on the head with waddies. This is found preferable to shooting, because skins that have been perforated by shot lose considerably in market value.

Rabbits have simply overrun the colony, and many thousands of dollars are paid annually for their scalps. They are exceedingly destructive, and in those districts where they are most numerous make a most palpable decrease in the wheat yield. The supply of these skins is practically unlimited.

FINANCE.

The financial position of the colony, which has during the past few years been the cause of so much anxiety to all, has at length assumed a brighter aspect. Retrenchment has been the order of the day in all Government departments, and this, combined with the increased trade, due to the plentiful harvest and the development of the mineral wealth of the colony, have tended to assist the treasurer in putting before the country a statement which shows an estimated surplus of $865,000 of revenue over expenditure for the present financial year. It will be seen by reference to the following table of revenue and expenditure that since 1882 the expenditure has been in excess of the revenue, until now there is a deficit of $5,892,895.

	Revenues.	Expenditures.
1883	$10,300,695	$11,650,395
1884	10,124,640	11,990,995
1885	11,547,995	11,274,040
1886	9,876,345	11,171,975
1887	10,070,510	10,725,675

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The Government proposes to provide for this deficiency by issuing treasury bills for the amount, bearing interest at the rate of $4\frac{7}{8}$ per centum per annum. One hundred and twenty-five thousand dollars' worth of these bills have already been issued at a satisfactory rate. The public debt of the colony, including the amount of the deficit, now totals $101,685,395, which averages $305 per head of the population. The interest on this, which varies in rate from 4 to 6 per cent., is $4,236,790 per annum. Thus nearly one-fifth of the yearly revenue of the colony goes to pay the interest on the public debt, but as most of the principal has been expended on reproductive works, such as railways, jetties, reservoirs, wharves, etc., it can only be looked upon in the light of a good investment, which will, in course of time, be the backbone of the colony.

TELEGRAPH, TELEPHONE, AND POSTAL.

The total length of telegraph lines in the colony is 5,485½ miles, which is an increase of only 81 miles over the previous year. Length of wires in use, 11,008½ miles; number of intercolonial telegrams sent, 793,575; receipts from same, $211,925; telegrams, international, 53,788; gross value of same, $1,380,400; proportion due to South Australia, $162,250; total revenue of department, $974,975; total expenditure of department, $893,080; excess of revenue over expenditure, $440,180.

Since the opening of the telephone exchange in 1882, the business has increased at a great rate. Now there are 1,100 instruments in use and 1,620 miles of wire. There are six telephone exchanges and 439 subscribers altogether. In Adelaide alone there are 362 subscribers. The revenue from this source for 1887 was $55,530.

The postal arrangements of the colony are very extensive, and are a fair source of revenue. Last year the sum of $120,000 was expended on the carriage of inland mails, and $85,000 was paid for the carriage of English mails. There are 586 post-offices in the colony, through which no less than 15,181,309 letters and postal cards, 708,542 packets, and 7,376,953 newspapers were transmitted. The revenue from this department was $523,375. There are 174 money-order offices in the colony, through which 64,753 money-orders for $955,780 were issued. Sixty-four thousand two hundred and seven orders were paid for $971,415. The revenue amounted to $11,420.

In connection with this, the anomalous state of things in existence, as regards the postal rates between here and the United States, might be mentioned. Letters for the United States, via San Francisco, cost 12 cents per half ounce, and via England 16 cents per half ounce. Letters from the States here, however, only cost 5 cents per half ounce, though, as a matter

of practice, it continually happens that double and treble the required amount is put on letters for this colony.

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CHINESE.

The question of the admission of Chinese into the colonies is the burning question of the hour through all Australia. As far as this colony is concerned, the influx of Chinamen has been very small, and the whole Chinese population does not exceed 350 in South Australia proper, exclusive of the Northern Territory. In none of the colonies is the Chinese population sufficiently numerous to cause any alarm, but the people have heard so much of their evil influences in California and other portions of America that they are determined, by preventive measures, to obviate the necessity for curative legislation in the future. Of course, the greatest outcry is from the laboring classes, who fear the competition of the Chinaman in the labor market, and as members of Parliament are so largely dependent upon the working classes for their seats in the legislature, they find it absolutely necessary to cry down the Chinaman, right or wrong, and endeavor to hide the real cause of the agitation (the competition with European labor) behind the moral reason that the Chinese are not desirable colonists. To illustrate this view, the most degraded representatives of that nation are held up as samples of them all. The consequence is that almost the whole land cries out: "Exclude them."

There are really two classes of Chinamen who emigrate to these colonies—the loafing criminal and the trader. The former class are guilty of those crimes and offenses for which both classes are blamed. The latter are a steady, thrifty, law-abiding people, whose presence in our midst is a direct gain to the country, and whose commercial integrity is beyond cavil. The proper course of legislation there should be not to exclude all, but a class, and in this they would have the co-operation not only of all right-thinking colonists, but also of the Chinese Government itself. Some extracts from the report of Inspector Foelsche on the Chinese in the Northern Territory will be found interesting and tend to bear out this view of the subject. He estimates the number of Chinese in the Northern Territory at 6,000. In Palmerston (the capital) the number varies from 800 to 1,300. They have in that town 39 stores, 3 carpenter shops, 2 shoemaker shops, 3 laundries, 5 tailoring establishments, 4 eating houses, 3 fishing establishments, 32 fruit and vegetable gardens, 6 gambling houses, 7 Chinese brothels (occupied by 24 prostitutes), and there are about 5,000 employed on railway works.

The gambling houses are attended by all classes of Chinamen. The brothels are conducted quietly, and drunkenness among the prostitutes is unknown. The Chinese engaged in the various business and occupations before enumerated, with few exceptions, are thrifty and law-abiding, and so are a portion of the laboring class, who came here under the auspices of the leading storekeepers, who, as a rule, obtain work for them on commission; but by far the greater number of the Chinese population who came here of their own accord to get a living as best they can are of the lowest and most undesirable class, and give the police a great deal of trouble. They monopolize our gold fields without paying for miner's rights,

and if they do not get sufficient gold to supply their wants, they steal and rob each other. A great many of them are old jail-birds from China and Hong-Kong, and would just as soon be fed in jail as having to work for a living themselves.

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He further points out that the punishment by imprisonment has no terrors for the Chinaman, and as they are accustomed to live on a much more meager diet than that provided at the jail, they have no efficient control over the majority of the lower classes.

THE LABOR MARKET.

With the gradual decay of the depression in the colony, the glut in the labor market became daily less pronounced. At present there is a fair demand for all kinds of labor, especially tradesmen and artisans, who can always find employment at remunerative rates. Domestic servants find plenty of openings for their services, and farm and station hands have no difficulty in obtaining engagements. The following is the ruling rate of wages:

For farm servants.—Plowmen, $5 per week; newly-arrived immigrants, $4 to $5 per week; married couples, $5 to $6 per week; indifferent farm hands, $4 per week; boys and youths, $2 to $2.50 per week; bullock drivers, $4 per week, all with board and lodging included.

Tradesmen.—Blacksmiths and bricklayers, $2 to $2.25 per day; brick-makers, $3 to $3.25 per thousand; cabinet-makers, $2 to $2.50 per day; engineers and iron-founders, $2 to $2.75 per day; plasterers and plumbers, $2.25 to $2.50 per day; miners, $1.50 to $1.75 per day; masons, $2.50 per day; quarrymen, saddlers, and sawyers, $1.50, $1.75, and $2 per day, respectively; shoeing-smiths, $1.75 to $2.25 per day; farmers, $2 to $2.50 per day; firemen, $1.50 to $2.25 per day; watch-makers, $2.50 to $3.50 per day; wheelwrights, $2.25 to $2.50 per day.

Domestic servants.—Housekeepers, $2.50 to $3; cooks, $2.50 to $3.75; housemaids, $2 to $2.50; laundresses, $2.25 to $2.50, and general servants the same.

Hotel servants.—Barmen, $4.25 to $5; barmaids, $2.50 to $3.72; cooks (men), $5 to $7.50; women, $2.50 to $3.75; boots and hostlers, $3.75 to $5, all per week, with board and lodging.

Station hands (with lodging, rations, and expenses paid to station, per year).—Shepherds, $175 to $200; hut-keepers, $130; married couples, $300; knockabout hands, $195 to $225; bush-carpenters, $325 to $350; men cooks, $105 to $225, and in shearing time $390 to $500; horse-drivers, $210; drivers on roads, $260; wool-pressers, $260 to $325; stock-riders, $260 to $325; sheep-drovers, $260; youths, $130 to $155.

BANKING STATISTICS.

The banking statistics for the December quarter, 1887, read as follows:

Average liabilities.—Notes in circulation, $1,943,750; bills in circulation, $65,620; balances due to other banks, $247,075; deposits bearing interest, $18,691,675; deposits not bearing interest, $7,563,355; total average liabilities, $28,561,475.

Assets.—Coined metals, $6,335,185; bullion and ingots, $37,365; public securities, $102,200; land and buildings, $1,981,215; notes and bills of other banks, $143,745; balance due from other banks, $948,805; other debts due to banks, $42,511,905; total average assets, $52,060,210.

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The savings bank returns for January last show an increase of four hundred and ninety eight in the number of depositors, which brings the total number up to fifty-eight thousand five hundred and seven. The receipts from the depositors during the month amounted to $487,920, and the repayments to $546,365, which shows a balance of $58,445 in favor of repayments. Taking the agencies apart from the Adelaide office an increase is shown of deposits over withdrawals of $43,465. The actual decrease in Adelaide was $201,910. The large amount withdrawn from the Adelaide branch can be accounted for by the excitement in the mining market at that time. Since January the number of depositors has grown, and so also have the amounts deposited.

THE JUBILEE EXHIBITION.

The jubilee of the colony was celebrated by the holding of the jubilee exhibition at Adelaide. The idea of holding an exhibition was first mooted during the acute stage of the depression which we have just passed through, and the scheme had many opponents. However, through the determination of Sir E. J. Smith it was carried out by private individuals for the public benefit. The Government only paid for the permanent buildings. It was a great success and paid for itself. The building is a fine structure, situated on North Terrace, from whence the grounds slope gradually down to the Torrens Lake. The site commands a fine view of the hills at the back of Adelaide, and was in every way eminently fitted for the object for which it was selected. The grounds extend over an area of 18 acres, and was more than half covered by the main buildings and temporary annexes. The total expenditure was $396,000, of which some $255,000 were spent on buildings, $50,000 on general working expenses, and $20,000 on electric lighting. For receipts, $165,000 were received from the Government on account of the permanent buildings; money received for space, $30,000; admission, $112,500; sundries, $9,500; so that it is estimated that by the time the temporary buildings are disposed of all expense will be paid.

In the matter of exhibits, Great Britain was more numerously represented than any other country, and was well represented in almost every branch of trade. Austria, Belgium, and Germany were also well represented and were fairly successful in the matter of awards.

New South Wales was by far the best represented among the colonies. The exhibits were varied and excellent, and included mineral products and gems of great value and beauty. All the countries of Europe contributed to the excellence of the show, and Algiers, Fiji, India, Johou, Manila, the Seychelles, and North Borneo were represented by interesting exhibits. To a citizen of the United States it was not a flattering thing to see his country

so poorly represented at an exhibition which would have afforded so many opportunities for opening up a trade, which it could easily obtain, but is left without an effort to restrain it to flow into other channels from which, in years to come, it will be difficult to divert it. The only exhibit from the United States that attracted any great amount of attention was a centrifugal amalgamator for saving gold from pulverized quartz. It was generally considered a first-class machine, and was far superior to anything else of the kind exhibited. This is the class of thing with which, considering the growing importance of gold mining in the colony, a great trade might be made between here and the States, but unless the business is pushed the trade will go to the other colonies or to England. The following is the number of awards issued to the various countries represented: Austria and Hungary, 94; Belgium, 159; British Northern Borneo, 2; Denmark, 2; France, 19; Germany, 115; Holland, 2; Italy, 3; New South Wales, 427; Victoria, 516; South Australia, 1,015; Seychelles, 4; Sweden, 4; Switzerland, 1; United States, 90; Great Britain and Ireland, 995; Algiers, 1; Canada, 10; Fiji, 5; India, 3; Johou, 3; Manila, 1; New Zealand, 10; Queensland, 4; Tasmania, 13; Singapore, 1.

The attendance at the exhibition numbered 789,671, an average of about 5,700 per day. In proportion to our population, the show was more numerously attended than either in Melbourne or Sydney. The proportions were: Sydney (1879), 158.934 per cent.; Melbourne (1880), 154.262 per cent.; Adelaide (1887), 254.816 per cent. Taking it altogether, the exhibition was an almost gratifying success, and in no small means tended to give that impetus to the trade of the colony which it so much needed after the troublesome times it had gone through. It was the first step around the corner, and it was speedily followed by the discovery of the alluvial gold diggings at Teehulpa; then followed the discovery of the Barrier silver mines, then a bountiful harvest, and finally the revival in the price of copper, so that now the colony stands in a position of greater prosperity than it has at any time since its foundation fifty years ago.

If the colony is able to stand five such disastrous years as those from 1883 to 1887, it must have great resources, and surely in the prosperous times that are now upon us, we may expect to make rapid strides in overtaking the other colonies in the onward march of progress, population, wealth, and civilization.—ADELAIDE, SOUTH AUSTRALIA, *October 29, 1888.*

CHARLES A. MURPHY,
Consular Agent.

ABOLITION OF EXPORT DUTIES FROM TRINIDAD, BRITISH WEST INDIES.

Under date of January 28, 1889, Consul Sawyer, of Trinidad, forwards to the Department ordinance No. 22, to take effect January 1, 1889, which virtually abolishes the duties heretofore levied in Trinidad on exports of sugar, molasses, rum, cocoa, and coffee.

FOREIGN COMMERCE OF FRANCE.

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According to French official returns the foreign commerce of France was as follows during the year 1887: General imports, $953,941,000; special imports, $777,018,000; general exports, $817,973,000; special exports, $626,574,000. As compared with 1886 this shows the following decrease: In general imports, $33,563,000; in special imports, $35,145; in general exports, $1,486,000; in special exports, $444,000. The following table shows the value of merchandise imported into and exported from France and also annual excess of imports for last six years:

*General commerce.**

Year.	Imports.	Exports.	Excess of imports over exports.
1882	$1,150,647,080	$919,452,000	$231,195,000
1883	1,136,139,000	880,108,000	255,725,000
1884	1,011,127,000	814,151,000	196,976,000
1885	951,470,000	763,469,000	138,021,000
1886	987,504,000	819,459,000	168,045,000
1887	953,941,000	817,973,000	135,968,000

* "General commerce" embraces all importations, whether entered for consumption in the country or in transit to other countries, and all exportations, including articles in transit from other countries as well as those of French production and manufacture.

*Special commerce.**

Years.	Imports.	Exports.	Excess of imports over exports.
1882	$930,607,000	$689,859,000	$240,748,000
1883	927,230,000	666,817,000	261,018,000
1884	838,295,000	623,872,000	214,423,000
1885	789,023,000	596,003,000	193,020,000
1886	812,163,000	627,018,000	185,145,000
1887	777,018,000	626,574,000	150,444,000

* "Special commerce" represents importations entered for consumption in the country and the exports of articles of French production and manufacture, including also such articles as become "nationalized" by being first entered for consumption and afterwards exported, and is, therefore, the commerce proper of France. The difference between the general and special commerce represents the movement of goods through the country in transit.

The preceding statement shows that the total estimated value of merchandise imported into and exported from France has not much varied, but the relation between the values and the corresponding quantities have remarkably changed.

Prices of merchandise are steadily falling. In 1877 general imports into France amounted to 16,111,300 tons, estimated at $881,990,700; in 1887 they amounted to 22,461,649 tons, valued at $953,941,000. The increase in

the value was 8 per cent., while the increase in the corresponding quantities was 40 per cent. In 1877 general exports from France amounted to 5,756,965 tons, valued at $843,564,400. In 1887 they amounted to 6,894,687 tons, valued at $817,973,000. The decrease in the value was 3 per cent., while there was an increase of 20 per cent. in the corresponding quantities.

The nature and value of the special imports were as follows:

Years.	Alimentary substances.	Industrial materials.	Manufactured articles.	Total.
1882	$322,445,000	$458,658,000	$149,594,000	$930,607,000
1883	316,173,000	462,756,000	148,301,000	927,230,000
1884	277,611,000	426,221,000	134,463,000	838,295,000
1885	280,873,000	390,400,000	117,788,000	789,061,000
1886	297,355,000	401,903,000	112,905,000	812,163,000
1887	274,639,000	388,779,000	113,600,000	777,018,000

The nature and value of the special exports were as follows:

Years.	Alimentary substances.	Industrial materials.	Manufactured articles.	Total.
1882	$169,608,000	$155,809,000	$364,442,000	$689,859,000
1883	163,934,000	145,059,000	357,224,000	666,217,000
1884	151,196,000	146,487,000	326,170,000	623,853,000
1885	144,711,000	136,528,000	314,764,000	596,003,000
1886	141,122,000	149,189,000	336,708,000	627,019,000
1887	135,679,000	155,365,000	335,530,000	626,574,000

The following statement shows, by customs districts, the values of merchandise imported into and exported from France during the year 1887:

Imports and exports by customs districts.

Customs districts.	General imports.	Special imports.	General exports.	Special exports.
Atlantic and channel ports.				
Bayonne	$3,223,000	$2,876,000	$2,412,000	$1,872,000
Bordeaux	73,012,000	58,054,000	75,733,000	61,046,000
Boulogne	30,224,000	22,060,000	36,187,000	27,665,000
Calais	15,536,000	11,136,000	19,030,000	13,684,000
Dieppe	8,492,000	5,829,000	21,944,000	19,068,000
Dunkirk	63,034,000	61,663,000	9,187,000	7,585,000
Havre	156,162,000	94,107,000	161,136,000	106,883,000
Nantes	8,724,000	8,376,000	1,988,000	1,447,000
Saint Nazaire	8,743,000	5,404,000	15,401,000	12,062,000
Total	367,150,000	269,505,000	343,018,000	251,312,000
Belgian border.				
Jeumont	14,900,000	14,321,000	9,689,000	7,430,000
Lille	4,960,000	6,060,000	4,362,000	3,937,000
Tourwing	16,617,000	16,444,000	15,710,000	15,479,000
Roubaix	2,355,000	2,451,000	7,778,000	7,759,000
Valenciennes-Blanc-Misseroz	5,616,000	5,327,000	7,894,000	6,002,000
Total	44,448,000	44,603,000	45,433,000	40,607,000

Imports and exports by customs districts—Continued.

Customs districts.	General imports.	Special imports.	General exports.	Special exports.
German border.				
Avricourt	$9,013,000	$8,859,000	$4,072,000	$4,014,000
Belford (German and Swiss border)	12,719,000	10,827,000	15,093,000	13,278,000
Pagny	5,211,000	5,057,000	1,853,000	1,621,000
Total	26,943,000	24,743,000	21,018,000	18,913,000
Mediterranean ports.				
Cette	38,040,000	36,651,000	9,496,000	7,855,000
Marseilles	193,482,000	143,824,000	128,113,000	76,305,000
Nice	3,455,000	2,934,000	444,000	135,000
Island of Corsica	1,540,000	868,000	637,000	637,000
Total	236,517,000	184,277,000	138,690,000	85,132,000
Interior districts.				
Rouen	31,459,000	31,594,000	8,241,000	7,315,000
Paris	61,914,000	67,494,000	75,733,000	72,587,000
Total	93,373,000	99,028,000	83,974,000	79,902,000
All other customs districts	186,110,000	155,249,000	186,670,000	150,675,000
Grand total	953,941,000	777,018,000	817,973,000	626,575,000

The following statement shows in detail, by countries and by articles, the value of special imports into and special exports from France during the years 1886 and 1887:

Special imports into France by countries.

Rank, 1887.	Whence imported.	1886.	1887.	Per cent. of total.
	Europe.			
1	England	$101,344,300	$91,810,000	11.8
2	Belgium	80,867,000	79,883,000	10.4
3	Spain	76,756,100	68,843,000	8.9
5	Germany	64,616,400	62,127,000	8.0
6	Italy	59,694,900	59,386,900	7.7
9	Russia	32,810,000	34,450,000	4.4
12	Switzerland	20,959,800	20,226,000	2.6
13	Austria	20,824,700	19,126,000	2.5
14	Turkey	24,028,500	18,740,000	2.4
16	Sweden	9,244,700	9,650,000	1.2
19	Portugal	14,339,900	7,392,000	1.0
20	Roumania	5,191,700	6,813,000	0.9
21	Netherlands	7,797,200	6,678,000	0.8
24	Greece	9,071,000	4,902,000	0.6
29	Norway	3,724,900	4,130,000	0.5
46	Denmark	598,300	675,000	0.1
54	British possessions in the Mediterranean Sea	77,200	77,000	.....
	Africa.			
38	Africa, Western Coast	4,618,700	2,256,000	0.3
23	Egypt	4,072,300	5,403,000	0.7
31	Barbary States (Tripoli, Tunis, Morocco)	3,358,200	4,053,000	0.5
42	British possessions in Africa	1,158,000	1,505,000	0.2
41	Other countries in Africa (except French possessions)	1,312,400	1,756,000	0.2

Special imports into France by countries—Continued.

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Rank, 1887.	Whence imported.	1886.	1887.	Per cent. of total.
	Asia and Oceanica.			
7	British East Indies	$37,113,900	$35,203,000	4.5
11	China	22,909,100	22,716,000	3.0
18	Japan	7,108,400	7,566,000	1.0
25	Dutch East Indies	5,423,300	4,844,000	0.6
40	Australasia	1,659,800	1,969,000	0.2
51	Siam	154,400	139,000	.....
50	Philippine Islands	328,100	143,000	.....
57	Oceanica, other islands, except French possessions	135,100	39,000	.....
	North America, Central America, and West Indies.			
4	United States	56,491,100	62,725,000	8.3
17	Hayti and San Domingo	7,083,100	9,013,000	1.2
39	New Grenada	2,065,100	2,239,000	0.3
45	Mexico	868,500	1,004,000	0.1
37	Spanish possessions in America	2,566,900	2,509,000	0.3
42	British possessions in America	1,235,200	1,100,000	0.1
55	Dutch possessions in America	96,500	58,000	.....
44	Guatemala, Costa Rica, and Honduras	424,600	1,023,000	0.1
.....	St. Thomas	19,300	19,000	.....
	South America.			
8	Argentine Republic	44,061,900	35,087,000	4.5
15	Brazil	10,190,400	13,278,000	1.7
26	Peru	3,860,000	4,535,000	0.6
27	Uruguay	5,828,600	4,478,000	0.6
34	Venezuela	2,952,900	3,300,000	0.4
35	Chili	2,605,500	3,107,000	0.4
48	Ecuador	231,600	359,000	.....
59	Bolivia	135,100	19,000	.....
	French Colonies.			
10	Algeria	24,028,500	25,845,000	3.3
22	St. Pierre, Miquelon, etc	7,198,900	5,636,000	0.7
28	Martinique	3,493,300	4,188,000	0.5
30	Guadaloupe	3,088,000	4,092,000	0.5
32	French East Indies	4,747,800	3,667,000	0.5
33	Senegal	3,995,100	3,648,000	0.5
36	Island of Reunion	2,837,100	2,644,000	0.3
47	Cochin China and Tonquin	386,000	521,000	0.1
49	Mayotte, Nossi-Be, and St. Mary of Madagascar	250,900	212,000	.....
52	French Guiana	38,600	135,000	.....
56	New Caledonia, Tahiti, and Nouka-Hiva	77,200	58,000	.....

RECAPITULATION.

1	Europe	531,966,000	494,968,000	63.8
6	Africa	14,513,600	14,975,000	1.9
3	Asia and Oceanica	74,826,100	72,619,000	9.3
2	North and Central America, West Indies	70,850,300	79,690,000	10.4
4	South America	69,866,000	64,113,000	8.2
5	French Colonies	50,141,400	50,646,000	6.4
	Total	812,163,000	777,011,000	.....

Special exports out of France by countries.

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Rank, 1887.	Whither exported.	1886.	1887.	Per cent. of total, 1887.
	Europe.			
1	England	$165,015,000	$158,183,000	25.0
2	Belgium	86,464,000	92,756,000	14.9
3	Germany	57,437,000	61,027,000	9.7
5	Switzerland	40,511,000	41,804,000	6.7
6	Italy	37,152,000	37,075,000	5.9
8	Spain	33,447,000	28,815,000	4.6
11	Turkey	8,936,000	9,013,000	1.4
13	Netherlands	5,848,000	5,732,000	0.9
16	Portugal	4,497,000	4,265,000	0.7
18	Austria	3,107,000	3,821,000	0.6
20	Russia	2,084,000	2,934,000	0.5
23	Greece	4,053,000	2,046,000	0.3
26	Denmark	1,312,000	1,872,000	0.3
32	Sweden	1,448,000	1,293,000	0.2
37	Roumania	579,000	1,004,000	0.2
43	Norway	965,000	849,000	0.1
46	British possessions in the Mediterranean Sea	637,000	560,000	0.1
	Africa.			
27	Egypt	4,593,000	3,937,000	0.9
25	Barbary States (Morocco, Tunis, Tripoli)	4,671,000	4,323,000	0.7
33	British possessions in Africa	1,428,000	1,274,000	0.2
52	Africa, western coast	212,000	135,000	.....
47	Africa, other parts, except French possessions	870,000	386,000	0.1
	Asia and Oceanica.			
28	British East Indies	1,659,800	1,525,000	0.2
35	Australasia	1,254,500	1,139,000	0.2
41	China	849,200	868,000	0.1
29	Japan	984,300	1,486,000	0.2
49	Dutch East Indies	482,300	347,000	0.1
50	Philippine Islands	173,700	270,000	.....
54	Other Oceanica islands	139,000	58,000	.....
	North America, Central America, and West Indies.			
4	United States	54,464,600	52,361,000	8.3
12	New Granada	5,133,800	7,102,000	1.1
14	Mexico	3,898,600	4,458,000	0.7
31	St. Thomas	1,273,800	1,390,000	0.2
34	Hayti and San Domingo	1,080,800	1,216,000	0.2
30	Spanish possessions in America	1,852,800	1,447,000	0.2
42	British possessions in America	694,800	868,000	0.1
56	Dutch possessions	19,300	19,000	.....
51	Guatemala, Costa Rica, and Honduras	154,400	193,000	.....
	South America.			
9	Argentine Republic	21,326,500	27,734,000	4.2
10	Brazil	11,039,600	11,503,000	1.8
19	Uruguay	3,860,000	3,706,000	0.6
22	Chili	2,702,000	2,046,000	0.3
26	Peru	1,273,800	1,062,000	0.2
36	Venezuela	398,300	965,000	0.2
38	Ecuador	231,600	347,000	0.1
48	Bolivia	2,600	8,000	.....

Special exports out of France by countries—Continued.

Rank, 1887.	Whither exported.	1886.	1887.	Per cent. of total, 1887.
	French colonies.			
7	Algeria	$36,515,600	$29,548,000	4.7
21	Martinique	1,930,000	2,741,000	0.4
24	Cochin China and Tonquin	1,737,000	1,930,000	0.3
25	Guadaloupe	1,756,300	1,891,000	0.3
27	Senegal	1,524,700	1,660,000	0.3
39	Island of Reunion	1,215,900	946,000	0.2
40	New Caledonia, Tahiti, and Nouka-Hiva	810,600	888,000	0.1
44	French Guiana	868,500	830,000	0.1
45	St. Pierre, Miquelon, etc	791,300	829,000	0.1
53	French East Indies	115,800	58,000	.....
55	Mayotte, Nossi-Be, and St. Mary of Madagascar	77,200	39,000	.....
	RECAPITULATION.			
1	Europe	453,491,600	453,049,000	72.6
5	Africa	11,174,700	10,065,000	1.6
6	Africa and Oceanica	5,404,000	5,665,000	0.8
2	North and Central America	68,573,000	69,054,000	10.8
3	South America	41,031,800	47,371,000	7.4
4	French Colonies	47,342,900	41,380,000	6.5
	Total	627,018,000	626,584,000	.....

Special imports, by articles, into France.

Rank, 1887.	Articles.	1886.	1887.	Per cent. of total, 1887.
	Animals, live:			
11	Cattle	$22,117,800	$14,957,000	2.0
45	Horses	3,116,000	2,760,000	0.4
21	Butter and cheese	7,874,000	7,102,000	0.9
30	Cacao	4,381,000	4,478,000	0.6
57	Clocks and watches	965,000	1,100,000	0.1
10	Coal and coke	24,048,000	24,537,000	3.2
9	Coffee	19,918,000	25,630,000	3.3
24	Copper	5,115,000	6,466,000	0.8
5	Cotton, raw	31,131,000	39,237,000	5.1
25	Cotton yarn	6,987,000	6,022,000	0.8
16	Cotton, other manufactures of	11,001,000	9,689,000	1.2
17	Fish, salt-water	10,847,000	9,283,000	1.2
15	Flax, raw	10,345,000	9,959,000	1.3
58	Flax or hemp tissues	1,100,000	1,042,000	0.1
55	Flax or hemp yarn	1,370,000	1,409,000	0.2
12	Fruits for the table	24,704,000	14,263,000	1.8
19	Grease, all kinds	5,964,000	7,680,000	1.0
41	Guano and other manures	3,011,000	3,416,000	0.4
49	Hats, straw	2,084,000	2,200,000	0.3
7	Hides and skins, raw	33,736,000	29,490,000	3.8
28	Hides and skins, dressed	5,520,000	5,095,000	0.6
40	Hemp	2,605,000	3,435,000	0.4
59	Hops	753,000	946,000	0.1
38	Indigo	3,551,000	3,648,000	0.5
52	Iron and steel, rough	1,660,000	1,583,000	0.2
62	Iron castings, rough	598,000	270,000	.....
53	Jewelry and plated ware	1,274,000	1,448,000	0.2

Special imports, by articles, into France—Continued.

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Rank, 1887.	Articles.	1886.	1887.	Per cent. of total, 1887.
39	Jute, raw	$2,104,000	$3,455,000	0.4
35	Lead	3,744,000	4,034,000	0.5
50	Leather, manufactures of	1,679,000	1,988,000	0.3
18	Machines and machinery	7,508,000	8,396,000	1.1
51	Mats and matting, straw	1,756,000	1,641,000	0.2
22	Meat, fresh, salted, or preserved	7,508,000	7,102,000	0.9
31	Metals, manufactures of	4,458,000	4,439,000	0.6
27	Oil, olive	4,864,000	5,172,000	0.7
8	Oil, seeds, and fruits	31,816,000	25,823,000	3.3
44	Oils, vegetable, except olive oil	5,385,000	3,127,000	0.4
26	Ores	6,157,000	5,558,000	0.7
23	Paper, books, and engravings	6,002,000	6,466,000	0.8
36	Petroleum and other mineral oils	4,188,000	4,033,000	0.5
43	Pewter	2,837,000	3,223,000	0.4
33	Rice	3,686,000	4,362,000	0.6
60	Saffron	695,000	772,000	0.1
56	Seeds for sowing	1,061,000	1,100,000	0.1
4	Silk and silk waste	56,472,000	53,017,000	6.8
14	Silk, manufactures of	8,299,000	10,306,000	1.3
32	Soda and potash	3,744,000	4,420,000	0.6
42	Spirits and brandy	3,320,000	3,358,000	0.4
20	Sugar from French Colonies	6,234,000	7,373,000	0.9
47	Sugar, foreign	3,899,000	2,451,000	0.3
54	Sulphur	1,428,000	1,409,000	0.2
37	Tobacco, leaf	6,215,000	3,860,000	0.5
61	Tobacco, manufactured	212,000	521,000	0.1
34	Vegetables, dried, and flour of	3,513,000	4,323,000	0.6
3	Wheat and other cereals	50,644,000	55,816,000	7.2
1	Wines	99,916,000	85,634,000	11.0
2	Wool, raw	74,672,000	62,841,000	8.2
48	Woolen yarn	2,914,000	2,413,000	0.3
13	Wool, other manufactures of	13,664,000	12,333,000	1.6
29	Wood, cabinet	4,169,000	4,883,000	0.6
6	Wood, common	27,638,000	30,552,000	3.9
46	Zinc	2,451,000	2,741,000	0.4
.....	All other articles	100,418,000	101,291,000	3.2

RECAPITULATION.

.....	Total alimentary substances	297,355,000	274,639,000	35.2
.....	Total articles necessary to industry	401,903,000	388,779,000	50.0
.....	Total manufactured articles	112,905,000	113,600,000	14.8
	Grand total of imports	812,163,000	777,018,000	.....

Special exports, by articles, from France.

Rank, 1887.	Articles.	1886.	1887.	Per cent. of total.
	Animals, live:			
25	Cattle	$4,552,000	$6,137,000	1.0
18	Horses	7,188,000	9,168,000	1.5
39	Antiquities, collections of	2,034,000	2,953,000	0.4
56	Arms	811,000	1,177,000	0.2
13	Brandy and spirits	14,357,000	12,873,000	2.1
32	Building materials	4,130,000	4,458,000	0.7

Special exports, by articles, from France—Continued.

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Rank, 1887.	Articles.	1886.	1887.	Per cent. of total.
11	Butter and cheese	$17,158,000	$16,347,000	2.6
59	Candles, all kinds	772,000	676,000	0.1
17	Chemicals	9,341,000	9,283,000	1.5
33	Clocks and watches	3,783,000	4,323,000	0.6
53	Coal and coke	1,448,000	1,467,000	0.2
38	Copper	2,162,000	2,972,000	0.5
20	Cotton, unmanufactured	5,925,000	8,627,000	1.4
60	Cotton yarn	367,000	483,000	0.1
8	Cotton, other manufactures of	20,690,000	22,735,000	3.6
43	Drugs and medicines	2,451,000	2,509,000	0.4
34	Dye-wood, extracts of	3,416,000	3,899,000	0.6
27	Eggs	5,172,000	5,327,000	0.9
5	Fancy goods and furniture	24,086,000	24,723,000	3.9
24	Fish, salt-water and preserved	6,272,000	6,195,000	1.0
40	Flax and hemp	2,471,000	2,934,000	0.4
47	Flax and hemp yarn	1,177,000	1,969,000	0.3
51	Flax and hemp, manufactures of	2,567,000	1,486,000	0.2
22	Fruits	8,299,000	7,508,000	1.2
23	Glass and earthen ware	7,045,000	7,353,000	1.2
37	Grease, all kinds	2,625,000	3,069,000	0.5
44	Hair (animal) and bristles	1,776,000	2,509,000	0.4
58	Hats, felt, wool, or silk	1,216,000	868,000	0.1
15	Hides and skins, raw	11,522,000	11,059,000	1.8
9	Hides and skins, dressed	18,644,000	18,084,000	2.9
57	Indigo	868,000	946,000	0.2
36	Iron and steel, rough and castings	1,544,000	3,204,000	0.5
14	Jewelry and plated ware	9,380,000	12,391,000	2.0
6	Leather, manufactures of	25,688,000	24,337,000	3.9
26	Machines and machinery	5,308,000	6,060,000	1.0
45	Meat, salted or preserved	2,335,000	2,470,000	0.4
12	Metals, manufactures of	11,908,000	14,321,000	2.3
29	Millinery and artificial flowers	6,234,000	5,211,000	0.9
52	Musical instruments	1,544,000	1,486,000	0.2
61	Oleaginous seeds and fruits	482,000	444,000	0.1
42	Oil-cakes	2,895,000	2,567,000	0.4
49	Oil, olive	1,679,000	1,621,000	0.3
30	Oils, vegetable, except olive oil	4,586,000	4,979,000	0.8
50	Paints and colors	1,467,000	1,602,000	0.3
19	Paper and manufactures of	8,685,000	8,685,000	1.4
48	Perfumery and toilet articles	1,698,000	1,795,000	0.3
28	Rags	5,481,000	5,307,000	0.9
54	Saffron	599,000	1,409,000	0.2
41	Seeds for sowing	2,953,000	2,702,000	0.4
4	Silk	28,448,000	27,290,000	4.4
3	Silk, manufactures of	46,706,000	40,491,000	6.5
55	Soap, other than toilet	1,486,000	1,293,000	0.2
62	Sugar, raw	1,332,000	328,000	0.1
16	Sugar, refined	9,013,000	11,040,000	1.8
63	Tobacco, manufactured	328,000	290,000	0.1
46	Vegetables, dried	2,027,000	2,200,000	0.3
10	Wearing apparel	15,150,000	17,409,000	2.8
35	Wheat and other cereals	5,771,000	3,648,000	0.6
2	Wines	50,103,000	45,104,000	7.2
31	Wood, common	4,343,000	4,883,000	0.8
7	Wool	25,495,000	23,237,000	3.7
21	Woolen yarn	8,473,000	7,643,000	1.2
1	Wool, manufactures of	72,491,000	67,627,000	10.8
.....	All other articles	66,816,000	69,383,000	10.8

Special exports, by articles, from France—Continued.

RECAPITULATION.

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Rank, 1887.	Articles.	1886.	1887.	Per cent. of total.
.....	Total alimentary substances	141,122,000	135,679,000	22.0
.....	Total articles necessary to industry	149,189,000	155,365,000	24.0
.....	Total manufactured articles	336,708,000	335,530,000	54.0
	Grand total of exports	627,019,000	626,574,000	.....

TRADE BETWEEN FRANCE AND THE UNITED STATES.

According to French official returns the special imports from the United States into France during the year 1887 amounted to $62,534,343, an increase of $6,049,343 as compared with the year 1886.

The following comparative table shows for the last eight years the value of special imports into France from the principal countries, with the rank of importance occupied by these countries in each year:

Year.	United States.		England.		Belgium.	
	Rank.	Value.	Rank.	Value.	Rank.	Value.
1880	1	$141,000,000	2	$128,000,000	8	$88,000,000
1881	2	98,000,000	2	136,000,000	3	91,000,000
1882	4	75,000,000	1	139,000,000	2	78,000,000
1883	6	68,000,000	1	134,000,000	2	95,000,000
1884	6	54,000,000	1	119,000,000	2	89,000,000
1885	5	52,500,000	1	104,000,000	2	78,000,000
1886	6	56,500,000	1	101,300,000	2	81,000,000
1887	4	62,700,000	1	91,800,000	2	80,000,000

Year.	Germany.		Italy.		Spain.	
	Rank.	Value.	Rank.	Value.	Rank.	Value.
1880	4	$85,000,000	5	$77,000,000	6	$66,000,000
1881	4	88,000,000	5	84,000,000	6	72,000,000
1882	3	72,000,000	6	70,000,000	5	71,000,000
1883	3	89,000,000	4	82,000,000	5	72,000,000
1884	3	80,000,000	4	71,000,000	5	58,000,000
1885	3	72,000,000	6	51,000,000	4	70,000,000
1886	5	65,000,000	4	60,000,000	3	77,000,000
1887	5	62,000,000	6	59,400,000	3	68,800,000

In the matter of special exports from France in 1887, the United States occupied the fourth place, viz, England, $158,183,000; Belgium, $92,756,000; Germany, $61,027,000; United States, $52,361,000.

The two following statements exhibit the value of the principal articles imported into France from the United States for consumption, and the value of French merchandise exported from France to the United States during the year 1887:

Special imports from the United States into France during the year 1887.

[Compiled from French customs returns.]

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Articles.	Customs valuations.	Estimated values.
Albumen	$30.64 per 100 pounds	$4,965
Bark, for tanning	1.12 per 100 pounds	3,788
Blacking	7.00 per 100 pounds	816
Bones, hoofs of cattle	.96 per 100 pounds	3,906
Breadstuffs:		
Bran	.96 per 100 pounds	87,445
Corn	114.67 per 100 pounds	1,297,675
Rye	109.43 per 100 pounds	44,639
Wheat	171.58 per 100 pounds	15,888,450
Wheat flour	232.85 per 100 pounds	2,993
Bristles	43.77 per 100 pounds	73,597
Brushes	61.28 per 100 pounds	1,117
Carriages, and parts of	70.04 per 100 pounds	2,946
Chemicals, dyes, and medicines:		
Dye-woods	1.75 per 100 pounds	16,258
Dye-woods, extracts of	12.26 per 100 pounds	645
Potash, carbonate of	4.90 per 100 pounds	38,865
Sarsaparilla	9.63 per 100 pounds	10,662
Soda, silicate of	1.05 per 100 pounds	60
Cider	.18 per gallon	116
Cocoa	15.93 per 100 pounds	14,824
Coffee	18.12 per 100 pounds	1,277,778
Copper, unmanufactured	10.07 per 100 pounds	910,242
Cotton, and manufactures of:		
Unmanufactured	11.99 per 100 pounds	26,183,231
White, manufactured	30.64 per 100 pounds	109
Colored	48.15 per 100 pounds	15
Printed	40.27 per 100 pounds	112
Earthen, stone, and china ware	3.50 per 100 pounds	281
Fancy articles, curiosities		29,249
Feathers, ordinary	87.54 per 100 pounds	5,244
Feathers, fine	394.00 per 100 pounds	84,444
Fish:		
Cod-fish and mackerel	3.06 per 100 pounds	14,305
Lobsters	17.51 per 100 pounds	388,320
Oysters	17.51 per 100 pounds	1,353
Flax and jute, and manufactures of:		
Flax, unmanufactured	2.19 per 100 pounds	52,963
Jute yarn	7.00 per 100 pounds	2,349
Fruits:		
Apples, dried	4.38 per 100 pounds	67,352
Grapes, dried	3.50 per 100 pounds	1,039
Other, preserved	3.06 per 100 pounds	18,380
Grease, tallow	4.99 per 100 pounds	639,839
Gold leaf	280.14 per pound	2,058
Hair, human	113.60 per 100 pounds	6,774
Hardware	10.94 per 100 pounds	12,234
Hides and skins, undressed:		
Sheep	11.38 per 100 pounds	32,085
Kid	54.72 per 100 pounds	43,660
Other	29.76 per 100 pounds	52,378
Honey	12.26 per 100 pounds	16,334
India rubber, unmanufactured	48.15 per 100 pounds	86,770
India rubber, manufactures of	87.54 per 100 pounds	4,970
Iron and steel, and manufactures of:		
Agricultural machinery		176,900
Steam-engines, stationary		8,237
Sewing-machines		12,859

Special imports from the United States into France during the year 1887— Continued.

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Articles.	Customs valuations.	Estimated values.
Iron and steel, and manufactures of—Continued.		
Tools		$89,041
Other manufactures		112,117
Jewelry, other than gold and silver	$17.51 per pound	386
Marble and stone:		
Marble, unmanufactured	.88 per 100 pounds	197
Grinding stones	62.59 per 100 pounds	2,916
Talc, pulverized	.88 per 100 pounds	624
Other stones	.88 per 100 pounds	4,263
Meats, canned	13.13 per 100 pounds	697,979
Musical instruments, pianos	386.00 each	1,544
Mother of pearl	22.76 per 100 pounds	60,764
Naval stores:		
Bitumen	.26 per 100 pounds	1,612
Tar	.22 per 100 pounds	608
Turpentine and pitch	1.05 per 100 pounds	4,056
Oakum	1.66 per 100 pounds	1,126
Oil cake:		
Cotton	.87 per 100 pounds	2,316
Flax	1.13 per 100 pounds	17,941
Oils:		
Animal—		
Lard	7.97 per 100 pounds	4,554,274
Fish	8.75 per 100 pounds	55,633
Mineral—		
Crude	1.14 per 100 pounds	3,256,073
Heavy	1.31 per 100 pounds	145,608
Refined	1.48 per 100 pounds	691,355
Other	.88 per 100 pounds	207,325
Vegetable—		
Cotton-seed	5.69 per 100 pounds	244,900
Linseed and other	5.60 per 100 pounds	30,178
Volatile or essential	175.09 per 100 pounds	9,739
Paints and painters' colors		1,130
Paper hanging	14.88 per 100 pounds	1,234
Plated ware	175.09 per 100 pounds	130
Rice	3.06 per 100 pounds	1,071
Seeds:		
Cocoa-nut	2.63 per 100 pounds	7,643
Cotton	1.28 per 100 pounds	292
Sowing	7.00 per 100 pounds	32,074
Other	2.45 per 100 pounds	1,046
Silk, manufactures of	595.20 per 100 pounds	2,205
Silver, unmanufactured	14.00 per pound	1,254,099
Silver ware	350.18 per pound	248
Spermaceti	43.77 per 100 pounds	5,137
Spices:		
Mustard	2.19 per 100 pounds	609
Pimento	5.25 per 100 pounds	2,866
Spirits	8.05 per 100 pounds	1,266
Sponges	157.30 per 100 pounds	166,095
Sugar and molasses:		
Molasses	.87 per 100 pounds	193,379
Candy and confectionery	17.51 per 100 pounds	484
Tobacco and manufactures of:		
Leaf	8.75 per 100 pounds	2,649,981
Cigars	5.40 per hundred	4,874
Chewing	43.77 per 100 pounds	206
Vanilla	350.80 per 100 pounds	14,524

Special imports from the United States into France during the year 1887—Continued.

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Articles.	Customs valuations.	Estimated values.
Varnish	$17.51 per 100 pounds	$5,357
Whalebone, unmanufactured	332.60 per 100 pounds	290,338
Wine	.73 per gallon	3,956
Wood and manufactures of:		
Lumber, sawed	.07 per 100 pounds	42,292
Lumber, other	.03 per 100 pounds	13,067
Timber	1.00 per 100 pounds	899
Hoops	1.05 per 100 pounds	586
Oars	3.68 per 100 pounds	5,352
Staves	.17 each	272,513
Box and other cabinet wood	2.98 per 100 pounds	46,541
Wooden ware	3.94 per 100 pounds	101,094
Total for the year 1887		62,725,000
Total for the year 1886		56,485,000

Special exports from France to the United States during the year 1887.

[Compiled from French customs returns.]

Articles.	Quantities.	Estimated values.
Antiquities and objects for collection		$954,515
Argols and cream of tartar	pounds	147,092	593,141
Barrels, empty	do	13,568,709	237,570
Bristles and animal hair	do	2,220,959	942,360
Brandy, spirits, and liquors	gallons	192,468	218,174
Cheese	pounds	358,104	44,191
Clocks and watches			393,216
Cork wood, manufactures of	pounds	10,044	5,276
Cotton, manufactures of	do	1,742,007	1,952,373
Dyes from coal tar	do	131,182	80,353
Dye-woods, extracts of	do	1,025,974	130,236
Fancy articles	do	3,538,020	2,363,859
Feathers, ornamental	do	337,957	840,628
Fish, preserved	do	2,363,288	412,540
Flax or hemp, manufactures of	do	73,356	282,984
Flowers, artificial	do	742,366	684,891
Fruits, fresh	do	13,182,429	1,098,045
Fruits, preserved	do	315,575	82,880
Furniture	do	503,992	162,901
Furs	do	353,732	95,832
Glassware and pottery			510,090
Glycerine	pounds	4,750,379	499,038
Gums, pure	do	376,292	115,298
Hair, human	do	3,369	5,308
Hides and skins, undressed	do	3,402,398	782,367
Hides and skins, dressed	do	1,901,719	1,730,668
Horses	number	5,019	929,063
India rubber, manufactures of	pounds	202,753	115,374
Instruments, scientific and surgical	do	137,767	144,739
Iron, steel, and castings	do	58,230,546	406,105
Jewelry, other than gold and silver	do	77,666	1,359,839
Leather, manufactures of	do	355,408	3,160,958
Machines and machinery	do	399,564	86,896
Mats and matting	do	2,915	2,289
Metals, manufactures of	do	2,942,606	679,387
Millstones	number	4,711	191,626

Special imports from the United States into France during the year 1887—Continued.

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Articles.	Quantities.	Estimated values.
Musical instruments		$148,234
Oil, olive	pounds	1,050,735	131,536
Oils, volatile, and essences	do	147,041	634,352
Paper, books, and engravings	do	2,815	477,698
Platinum	do	866,518	227,576
Perfumery	do		192,790
Seeds	do	1,141,129	84,528
Silk and waste silk	do	321,570	814,900
Silk, manufactures of	do	2,640,401	11,287,412
Stones and earths	do	13,746,729	144,340
Vegetables, dried	do	13,638,346	322,366
Vegetables, preserved	do	3,300,726	288,958
Wearing apparel	do	433,426	1,530,111
Wines	gallons	1,709,920	1,878,657
Wool, raw	pounds	4,796,004	830,718
Wool, manufactures of	do	7,771,470	9,307,489
Other articles			1,855,432
Total special exports during the year 1887			52,361,000
Total special exports during the year 1886			54,465,000

NAVIGATION.

The total number of voyages performed by vessels of all classes and of all flags, with cargoes, to and from French ports during the year was 50,854, representing 22,523,000 tons burden. Compared with the year 1886, this shows an increase of 1,209 voyages and an increase of 804,000 tons burden. As to tonnage, the French mercantile marine participated in 1887 in the proportion of 41 per cent. Distinguishing between navigation by rail and navigation by steam, the French flag participated in the former category in the proportion of 44 per cent.

The countries with which France has maintained the greatest maritime relations are presented in the following table in their relative order, the United States appearing fourth on the list:

Countries.	1887.	Countries.	1887.
	Tons.		*Tons.*
England	7,013,593	Belgium	259,488
Algeria	2,541,028	Netherlands	250,350
Spain	1,935,665	Austria	247,069
United States	1,551,417	Portugal	245,130
Italy	1,355,369	Tripoli	209,265
Russia	903,552	Brazil	206,737
Argentine Republic	690,379	Roumania	179,118
Germany	676,670	Tunis	157,818
Sweden	472,402	Norway	156,176
British East Indies	373,969	Chili	151,024
Turkey	299,973	China	143,424
New Granada	283,484	Mexico	142,360
Egypt	273,707	Cochin China, Tonquin	140,632

The following tables show the condition and employment of the French mercantile marine during the year 1887:

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Condition of the French mercantile marine, December 31, 1887.

Classification of vessels.	Sailing vessels.			Steam vessels.			
	Number of vessels.	Tonnage.	Number of seamen.	Number of vessels.	Tonnage.	Number of seamen.	Number of engineers and firemen.
Under 30 tons*	11,427	88,151	45,953	311	4,528	936	479
30 to 50 tons	895	33,229	5,044	99	3,819	446	245
50 to 60 tons	222	12,166	1,668	26	1,426	133	68
60 to 100 tons	571	44,782	4,657	76	5,971	411	219
100 to 200 tons	648	88,372	7,029	52	7,501	404	206
200 to 300 tons	221	54,282	2,544	31	7,874	366	177
300 to 400 tons	92	32,190	1,147	33	11,589	399	251
400 to 500 tons	70	31,195	941	34	15,241	407	243
500 to 600 tons	32	17,656	438	26	14,383	369	211
600 to 700 tons	36	23,665	680	33	21,951	519	342
700 to 800 tons	18	13,329	359	27	19,921	416	310
800 to 1,000 tons	7	6,100	166	45	41,048	1,007	541
1,000 to 1,200 tons	7	7,605	176	54	56,152	1,207	723
1,200 to 1,500 tons	3	3,792	84	29	39,870	792	434
1,500 to 2,000 tons	.....	.....	.....	38	66,429	1,393	788
2,000 tons and over	4	9,359	122	73	188,949	3,942	1,791
Total	14,253	465,873	71,008	984	506,652	13,147	7,008

RECAPITULATION, SAILING AND STEAM VESSELS.

Classification of vessels.	Number of vessels.	Tonnage.	Number of seamen.	Number of engineers and firemen.
Under 30 tons*	11,738	92,679	46,889	479
30 to 50 tons	994	37,048	5,490	245
50 to 60 tons	248	13,592	1,801	68
60 to 100 tons	647	50,733	5,068	219
100 to 200 tons	700	95,873	7,433	206
200 to 300 tons	252	62,156	2,910	177
300 to 400 tons	125	43,779	1,546	251
400 to 500 tons	104	46,436	1,348	243
500 to 600 tons	58	32,039	807	211
600 to 700 tons	69	45,616	1,199	342
700 to 800 tons	45	33,250	775	320
800 to 1,000 tons	52	47,148	1,173	541
1,000 to 1,200 tons	58	63,757	1,383	723
1,200 to 1,500 tons	32	43,662	876	434
1,500 to 2,000 tons	38	66,429	1,393	788
2,000 tons and over	77	198,308	4,064	1,791
Total	15,237	972,525	84,155	7,008

*These figures do not include vessels under 2 tons burden engaged in coast fisheries not required to make formal entries, which numbered 12,631, with a total measurement of 18,438 tons, and employed 24,368 men. The total horse-power of steam vessels amounted to 258,085.

Employment of the French mercantile marine during the year 1887.

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Services.	Number of vessels, all classes.	Tonnage.	Number of crew.
Long voyages	684	491,853	16,367
European and Mediterranean waters	597	205,786	8,623
Coasting trade	2,026	101,703	7,916
Bank fishing	409	47,606	8,393
Coast and small fishing	10,158	85,356	45,936
Pilotage, towing yachts, etc	1,363	40,227	3,948
Total	15,237	972,525	91,183

Statement showing the nationality and tonnage of vessels entered into the ports of France during the year 1887.

Nationality.	Number of vessels.	Tonnage.	Nationality.	Number of vessels.	Tonnage.
French	8,696	4,770,858	Nicaraguan	1	1,458
Austrian	226	112,548	Norwegian	1,427	528,171
Belgian	112	39,691	Portuguese	23	11,281
Brazilian	1	722	Russian	324	128,169
British	14,118	5,738,614	Spanish	1,582	476,079
Dane	373	131,275	Swedish	431	195,766
Dutch	317	194,116	Turkish	3	658
German	752	574,140	United States	38	44,580
Greek	277	88,340	Total	31,081	13,483,614
Italian	2,381	457,908			

The following table shows the figures of navigation between the United States and France:

Statement showing the flag, number, and tonnage of vessels engaged in commerce between France and the United States during the year 1887.

Flag.	With cargo.		In ballast.		Total.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Entered:						
United States	35	42,250	.....	.....	35	42,250
French	130	363,422	.....	.....	130	363,422
Others	526	584,878	.....	.....	526	584,878
Total	691	990,550	.....	.....	691	990,550
Cleared:						
United States	14	20,800	9	11,503	23	32,303
French	118	358,027	5	8,061	123	366,088
Others	196	259,291	88	64,343	284	323,634
Total	328	638,118	102	83,907	430	722,025

Statement shewing the number and tonnage of American vessels engaged in commerce between France and the United States from 1873 to 1887, inclusive.

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Year.	Entered.		Cleared.	
	Number.	Tonnage.	Number.	Tonnage.
1878	195	139,779	176	132,214
1879	146	137,337	126	122,648
1880	149	138,447	110	95,802
1881	83	83,251	62	61,218
1882	77	97,780	55	66,520
1883	34	35,500	20	18,567
1884	40	45,450	20	23,470
1885	18	19,733	18	16,353
1886	30	39,898	10	17,073
1887	35	42,250	23	32,303

The following statement shows the imports into and the exports from France during the first ten months of 1888 as compared with the imports and exports for the corresponding period of 1887:

Commerce of France during the first ten months of 1888.

Description.	Imports.		Exports.	
	1887.	1888.	1887.	1888.
Articles of food	$215,673,254	$232,560,561	$105,281,114	$100,513,435
Industrial material	306,195,079	307,539,710	107,195,867	109,143,430
Manufactured articles	85,644,136	86,914,076	263,156,658	264,949,049
Other merchandise	18,506,191	18,516,550	28,492,397	30,324,739
Total	626,018,660	645,030,897	504,126,036	504,930,653

FISHERY PRODUCT.

Cod fishing.—The French vessels engaged in the cod fishery for the year 1887 brought into the various ports of France 121,722,853 pounds, against 150,474,045 pounds for the year 1886. The number of vessels and crews engaged in the cod fishery for the year 1887 were 901 vessels and 11,275 men, against 1,039 vessels and 13,729 men in 1886.

Herring fishing.—There were 598 vessels of 19,916 tonnage, having on board 6,689 men engaged in the herring fishery for the year 1887. They brought in 92,510,418 pounds, against 85,579,244 pounds for the year 1886.

CEREALS.

The following statement shows the wheat, maslin (mixed wheat and rye), and rye production of France, including the island of Corsica, for the five years from 1884 to 1888, inclusive:

WHEAT.

Years.	Area sown.	Production.	
	Acres.	*Bushels.*	*Pounds.*
1884	17,427,045	324,127,892	19,452,253,000
1885	17,191,299	311,732,446	18,779,348,000
1886	17,189,822	304,426,596	18,156,722,000
1887	17,217,743	319,075,179	19,354,351,000
1888	17,441,701	273,620,130	16,132,489,000

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MASLIN (MIXED WHEAT AND RYE).

1884	889,392	16,909,253	962,403,000
1885	817,831	14,728,813	855,583,000
1886	852,835	14,669,087	840,382,000
1887	809,248	14,524,205	838,010,000
1888	778,852	12,433,642	711,755,000

RYE.

1884	4,263,706	74,501,188	4,139,768,000
1885	4,133,956	68,310,905	3,833,622,000
1886	4,038,401	64,156,650	3,577,361,000
1887	4,013,725	67,182,673	3,736,143,000
1888	4,089,972	62,128,658	3,463,781,000

SUGAR.

The quantity of refined sugar produced in France during the year 1887 amounted to 756,185,500 pounds, being a decrease of 200,715,300 pounds as compared with the year 1886, and of 11,362,600 pounds as compared with the average production for the last five years. The quantities of sugar consumed were as follows:

Items.	1886.	1887.
	Pounds.	*Pounds.*
Beet-root sugar manufactured in France	693,428,000	717,751,000
Sugar-cane from French colonies	165,316,000	195,606,000
Sugar from foreign countries	83,457,000	56,830,000
Total	942,201,000	970,187,000

WINE, CIDER, AND ALCOHOL.

The production of wine for the year 1887 was 642,812,363 gallons, a decrease of 19,286,010 gallons as compared with the year 1886, and a diminution of 281,711,997 gallons as compared with the average production for the last ten years.

The production of cider for 1887 was 354,955,932 gallons, being an increase of 135,675,836 as compared with the year 1886, but a diminution of 34,606,000 gallons on the average production for the last ten years.

The quantities of alcohol produced in France and the quantities imported during the years 1886 and 1887 are shown in the following statement:

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Items.	1886.	1887.
	Gallons.	*Gallons.*
Produced from wine	331,296	700,975
Produced from ciders or pears	22,534	11,200
Produced from husks of grapes	247,448	201,588
Produced from potatoes	20,407,291	19,516,638
Produced from beet roots	13,877,299	20,948,839
Produced from molasses	12,999,621	11,265,846
Produced from other substances	245,837	598,213
Total production	48,131,326	53,243,299
Importations	6,196,583	5,816,125

The following statement shows the average consumption per inhabitant of wine, cider, beer, and alcohol in the principal cities of France during the year 1887:

Cities.	Population.	Wine.	Cider.	Beer.	Alcohol.
		Quarts.	*Quarts.*	*Quarts.*	*Quarts.*
Paris	2,294,108	196.6	7.4	11.6	6.6
Lyons	334,124	190.2	.....	5.3	5.4
Marseilles	289,433	190.2	.....	10.6	6.4
Bordeaux	225,281	200.8	.....	7.4	4.9
Lille	143,135	28.5	.....	358.2	6.6
Toulouse	123,040	187.0	.....	5.2	2.8
Nantes	110,638	149.0	19.0	4.2	6.2
Havre	109,199	43.3	87.7	17.6	16.6
St. Etienne	103,229	223.0	.....	7.4	5.7
Rouen	100,043	48.6	152.2	27.5	16.9

IRON AND STEEL.

The total production of cast-iron during the year 1887 reached 1,580,851 tons, in 1886 it was 1,516,574 tons. The production of iron during 1887 was 774,260 tons, in 1886 it was 766,566 tons. The production of steel during 1887 was 450,856 tons, it was 427,589 tons in 1886.

SILK COCOON HARVEST OF 1888.

The returns of the silk cocoon harvest for 1888 show that silk worms were bred in 24 departments in the south of France. The number of scriculturists was 142,711; the total production of fresh cocoons was 21,053,899 pounds; cocoons put to seed by the producer, 678,553 pounds; quantity of seeds obtained, 1,991,578 pounds. The following official statement will show the details of this harvest:

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Race.	Quantities of seeds put to incubation.	Quantities of fresh cocoons obtained.	Average yield of fresh cocoons per ounce of seed.	Selling price of 1 ounce of seed.	Price per pound of fresh cocoons sold.	
					For reeling.	For seeding.
	Ounces.	*Pounds.*	*Pounds.*			
French	229,112	19,499,148	76.6	$1.91	$0.306	$0.362
Japan	2,567	194,812	68.3	2.04	0.298	0.357
Japan, reproduced in France	6,310	547,085	78.0	1.89	0.275	0.319
Other	9,714	812,854	76.3	2.07	0.284	0.308
Total	247,702	21,053,899				

Since the year 1884 the silk cocoon product of France has been steadily increasing, but at the same time the fall in the prices of seeds and of cocoons was much marked, as it appears from the following statement:

Years.	Quantities of seeds put to incubation.	Quantities of fresh cocoons obtained.	Average yield of fresh cocoons per ounce of seed.	Price per pound of fresh cocoons sold.		Selling price of one ounce of seed.
				For reeling.	For seeding.	
	Ounces.	*Pounds.*	*Pounds.*			
1884	254,652	13,662,018	49.2	$0.331	$0.417	$2.26
1885	230,951	14,566,286	56.7	0.327	0.421	2.19
1886	218,909	18,231,905	75.0	0.325	0.419	2.17
1887	231,930	18,907,097	73.4	0.325	0.390	2.17
1888	247,702	21,053,911	76.5	0.306	0.362	1.94

PARIS, *December 20, 1888.*

J. L. RATHBONE,
Consul-General.

EXPORTS FROM SWITZERLAND TO THE UNITED STATES.

The declared exports from Switzerland to the United States during the calendar year 1888, as shown by the reports made by the several consuls to this consulate-general, given below in a table of consular districts, with the comparative increase and decrease as compared with the preceding year, were as follows:

Consular district.	1887.	1888.	Increase.	Decrease.
Basle	$3,104,887.86	$3,675,634.19	$570,746.33	
Berne	763,406.22	898,571.85	135,165.63	
Geneva	900,690.06	912,337.63	2,647.57	
Horgen	1,697,596.89	1,942,194.06	244,597.17	
St. Gallo	6,670,598.71	6,247,443.88		$423,154.83
Zurich	1,497,202.97	1,300,888.93		196,314.04
Total	14,643,382.71	14,977,070.54	333,687.83	

BERNE, *January 14, 1889.*

BOYD WINCHESTER,
Consul-General.

JUTE BAGGING IN INDIA.

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The statistical table herewith appended shows that there are twenty-four mills in British India devoted principally to the manufacture from jute of gunny bags and cloth, twenty-two of which mills are located in the province of Bengal (mostly in or about the suburbs of Calcutta), and one each in the Madras Presidency and the northwest provinces.

In order to inform myself on this subject I applied a few days ago to the agents in Calcutta of the Baranagore Jute-Mills, mentioned in the appended list, for permission to visit the same, and was kindly furnished with the use of the steam-launch of the company, in which I proceeded 7 miles up the Hooghly River, on the bank of which two of said mills are located, and was very kindly received and shown through the same, and had explained to me all the matters pertinent to their *modus operandi*, etc. These are the largest jute-mills in India, are very complete and perfect in all their appointments, and employ over five thousand operatives, who are classified, as shown in the appended table, as men, women, young persons (aged from about twelve to sixteen), and children (aged from about eight to twelve).

These mills are only operated in the day time, and eight hours constitutes the day's work. The operatives are paid, exclusive of board and lodging, about as follows: Men, per week, 3 to 4 rupees = $1 to $1.33; women, per week, 1½ to 2 rupees = 49½ to 66 cents; youths, per week, 1 to 2 rupees = 33 to 66 cents; children, per week, 12 annas to 1½ rupees = 25 to 50 cents.

The total product from all the mills above named for the year ended March 31, 1888, was 74,367,620 gunny bags, against 64,570,157 for the preceding year.

The total exports to the United States from British India for the year ended March 31, 1888, was 15,310,163 gunny bags, valued here at 1,650,376 rupees = $350,125, against 18,301,280 bags for the preceding year, valued at 1,808,586 rupees = $602,862.

The value here of the raw jute in bales, such as is used in the manufacture of gunny bags and gunny cloths, is now about $2 per hundred-weight. It will be observed that the annexed tabular statement gives the value of the capital stock of the twenty-four jute-mills therein named in rupees, three of of which at the present rate of exchange may be considered equal to 1 gold dollar. Said statement also shows the number of native operatives of the different classes above referred to who are employed in each of said mills, as well as the amount of jute worked up during the year under review. I have also given the cost of labor and the value of the raw material used per hundred-weight. — CALCUTTA, *December 10, 1888.*

B. F. BONHAM,
Consul-General.

Statement showing the jute-mills worked by steam which existed in Bengal, northwest provinces, and Oude, and in Madras and Bombay.

Place of working.	Date of establishment.	Nominal capital.	Nominal horse-power of engines.	Number of looms.	Number of spindles.	Amount of jute worked up during year.	Description of goods.	Average daily number of hands employed.				
								Men.	Women.	Young persons.	Children.	Total.
BENGAL.		*Rupees.*				*Cwt.*						
Baranagore (North)	1857	4,000,000	220	382	7,828	321,472	Jute yarn, gunny cloth, and bags.	3,050	1,467	300	215	5,032
Baranagore (South)	1857		200	252	4,708							
Baranagore Branch (Baliaghata.	April, 1881		60	135	3,536							
Garriffa (24 pergunnahs)	1862	1,200,000	150	286	5,676	112,950	Gunny bags and cloth	898	306	310	178	1,692
Serajgunge (Pabna)	1864	(*)	†225 ‡100	300	7,200	161,633	Gunnies and canvas	2,327	632	461		3,420
Serampore	1866	1,100,900	352	300	6,000	100,000	Gunny bags and cloth	1,378	573	170	230	2,351
Bowreah	June, 1873	1,400,000	100	253			Gunnies					
Champdany, near Bydabatty	1873	2,000,000	210	358	6,352	101,000	do	1,800	700	150	40	2,690
Budge Budge (24 pergunnahs).	June, 1874	1,800,000	240	440	8,245	175,705	Gunny bags and cloth	1,380	315	584	214	2,493
43 Garden Reach (24 pergunnahs).	Sept., 1874		400	150	3,434	60,288	Gunny bags and cloth and jute twine.	604	224		224	1,052
Seebpore, Howrah	May, 1875	1,500,000	160	300	5,354	85,620	Gunnies	1,300	800	80	50	2,230
Garulia, near Shamnugger	Sept., 1875	2,000,000	260	458	9,000	240,000	Gunny bags and cloth	1,687	890	407	292	3,276
Ramkistopore, Howrah	Jan. 1, 1876	1,750,000	200	500	9,964	174,320	do	1,794	723		418	2,935
Seebpore, Howrah	May 1876	3,000,000	300	402	7,780	189,928	do	1,284	723	456	468	2,931
Rishra, near Serampore	1876		‡1,700	515	10,492	199,000	do	3,049	609	487	65	4,210
Kamarhatty	Dec. 9, 1878	800,000	‡1,160	380	5,640	134,300	do	1,580	600	150		2,330
Rishra, near Serampore	Jan., 1881	1,970,000	160	260	5,304	102,960	Gunnies	1,435	436	221	33	2,125
Sealdah (24 pergunnahs)	do	900,000	220	350	6,228	110,000	Gunny bags and cloth	1,050	390	325	150	1,915
9 Garden Reach	Jan., 1884	1,350,000	200	300	5,916	158,652	do	921	379	338	219	1,857
Kanknarah	July 1, 1884	1,400,000	250	290	5,440	116,127	do	1,380	620	220		2,220
Titaghur	Aug., 1884	1,500,000	1,400	261	4,480	140,000	Gunny bags	1,278	372	176		1,826
Ghoosery	Mar. 8, 1886	500,000	135	228	4,330	120,930	Gunny bags and hessians	700	304		196	1,200
Total for Bengal		28,170,000		7,040	132,907	2,804,885		28,895	11,063	4,835	2,992	47,785
MADRAS.												
Chittavalsa Vizigapatam	July, 1867		77	72	1,386	34,477	Gunny bags and cloth	334	102	278		714
NORTHWEST PROVINCES.												
Cawnpore	March, 1883	300,000	160	53	1,300	29,726	Gunny bags, floor cloth, and twine	431	33		52	516
Grand total		28,470,000		7,164	135,593	2,869,088		29,660	11,198	5,113	3,044	49,015

*No information available. †Nominal horse-power. ‡Effectual horse-power. ‖Indicated horse-power.

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PRESENT CONDITION OF THE COMMERCE OF CANTON—ITS FUTURE.

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[From Bulletin Consulaire Français, Decembe , 1888. — Translation.]

The geographical situation of Canton, as well as the policy of the Chinese Government, for a long time made the city the depot of an enormous commerce, as well with the interior of the country as with foreign nations. At one time nearly all the commerce of China with foreigners was centralized at Canton. The provinces sent all their productions there, and the ships of foreign powers brought in the wares of all nations. There one might find the silks of Kouang-Tong, of The-Kiang, of Kiang-Sou; the rice of Kouang-Tong, of Kouang-Si; the teas of Kouang-Tong, of Fou-Kien, of Tche-Kien, of Kiang-Sou, of Yun-nan, of Hou-Pé; the rhubarb of Chantoung, of Tché-li, of Ssen-Tch'-Ouen, of Knei-Tchéou, of Hau-nan, and of Hou-Pé; the musk of Yunnan, of Ho-nan, of Ssen-Tch'ouen, of Hau-nan and of Hou-Pé; the metals (copper, pewter, lead, iron, gold, quicksilver) of Yunnan, of Kouang-Si, of Kauei-Tchéou, etc.

In exchange, the foreigners carried away woods (ebony, sandal, and saffron), horns (of beef, buffalo and rhinoceri), cotton (raw and spun), clock-work (watches and clocks), cutlery and hardware, perfumery, elephants' tusks (entire or broken), metals, skins of beef, walrus, foxes, beavers, hares, rabbits, etc., soap, opium, cotton cloths (cambric, muslin, twilled cloth, white and yellow), chintze (Persian cloth), and Indian goods, handkerchiefs, cotton stuffs, velvets, woolen cloth (Spanish *stripies*, broadcloth, camelot, Dutch and English, rugs, flannels), linen cloth (fine and coarse, of linen and of hemp), glass and crystal, wines, beer, liquors, etc.

All the commerce of export and import was carried on by virtue of an exclusive privilege accorded by the Emperor of China through the medium of a corporation of a dozen important Chinese merchants, known under the name of the Merchants *hong* or *hanistes*;* the foreigners were not able to treat directly with the Chinese in buying or selling merchandise, either of exportation or of importation. It was thus that the Portuguese, having arrived in China in 1594, the Spaniards having come some years later, the French (1520), the Dutch (1601), the English (1635), the Swedes and the Danes (1732), the Americans (1784), conducted, for a long time, their commercial operations in China. These several nations, for a long time, hired factories, or depots, in the neighborhood of Canton, on the border of the River of Pearls. There was a Dutch factory, a French factory, an English factory, etc. The companies known as the East Indian were created in Europe to direct commercial enterprises in China.

The first French company, called "*Compagnie de Chine*," dated in 1860; four years later this was united with the *Compagnie des Indes;* two other associations, established in 1697 and in 1713, never united, and in 1719 the companies of the East, of India, and of China were coalesced under the name of the "*Compagnie des Indes*." In the beginning this company had no factories at Canton; annual voyages were made, and it had no foot-hold in China. Afterwards a fixed post was established, with a "council of direction" charged with the management of affairs. In 1770 this council was composed of three members. Six years after there was created a French consulate at Canton, "in imitation," said the royal ordinance, "of the consuls of France residing near the princes of Barbary." The chief of the council, Mr. Thimotheé, was chosen as consul, and one of the members, M. Clouet, as chancellor (3d February, 1776). These two persons not having accepted these appointments, M. Vanquelin, who had been during twenty-four years attached to the service of the Indian company in the quality of supercargo, was nominated consul, and M. Vieillard, member of the council of direction, designated as chancellor.

England, on her side, had accorded to the Indian Company, called the London Company, the privilege of commerce with China. William III authorized the installation of a rival company, under the title of the East India Company (1678), and the directors (presidents)

*These merchants correspond with the Ho-Po, or Chief of Chinese Customs, for all individuals coming to China are looked upon as barbarians.

obtained the commissions of consuls. Mr. Catchpale was the first English consul in China (1699). From that time the heads of the factories preserved the prerogatives devolving upon the consuls of the Levant by ordinance of Charles II (1662). The privileges of the Indian Company having come to an end in 1834, the port of China was opened to free competition, and the commercial houses, each for itself taking the chances, established themselves in Canton. The two most powerful were Jardine Matheson & Co., and Dent & Co.; they had to struggle with the advent of a very strong American house, that of Russell. The operations of these houses, which were especially in teas, silks, cotton, and opium, were enormous. Already rich themselves, and working with considerable capital belonging to the old Chinese merchants, the *hongs* and *parses* capitalists, for a long time they held the reins of foreign commerce in China, and took in enormous profits of the monopoly of the *hanistes*, whose entire confidence they had acquired.

The opium war, and the treaty which England concluded with China made a final ending of the supreme privilege of the *hanistes*, and struck the first blow at the commercial supremacy of Canton by opening this port to foreign commerce at the same time with the ports of Shanghai, Ningpo, Amoy and Fou-Tchéou. The establishment of an English colony at Hong-Kong and the opening of new ports by subsequent treaties achieved the ruin of the commerce of Canton. The products of the interior, instead of centralizing in Kouang-Toung, were diverted into newly-opened ports more accessible to the line of production, and foreign commodities penetrated into the interior by these new routes of commerce to the detriment of the city of Canton. It is thus that the silks and the teas, the principal articles of exportation, which had before come from all the other provinces to be sent out from here to foreign markets, are to-day carried direct from Shanghai, Fou-Tchéou and Han-Kéou.

Canton is no longer, as it was for a century, a center of general distribution, but only a center of distribution for a few places. As a consequence, there are no longer those princely houses, as they used to call the English establishments which secured all the commerce of export and import, but we find a number of rival houses, whose limited operations are confined to retail commerce.

One no longer sees the large speculators holding considerable stocks of merchandise and changing the course of the markets in sending these products to Europe. People no longer make colossal fortunes in a day, as it were.

On the other hand, the cession of Hong-Kong to the English and the rapid extension which has taken place in that colony (formerly a naked and barren rock, now one of the most beautiful cities of the far East) have changed, in a most radical manner, the conditions of import commerce. In spite of the efforts of foreign buyers, the foreign merchants have centralized in this city, and the native merchants, by reason of the little distance which separates Hong-Kong from the capital of the two Kouangs, have formed the habit of going themselves to sell their supplies of European commodities advantageously at this large market, without passing as an intermediary the buyers of Canton.

Foreign merchandise arrives in Hong-Kong from all parts of the world and is deposited in immense *godowns* or magazines, where it remains until it is sold. It is sufficient if the samples are sent to Canton and the other ports on the coast, the delivery being made at Hong-Kong itself. The geographical position of the island and the communications which it has by steam-boats with every port of China permit importation commerce to branch out in every direction. Moreover, this is a point important to be noted. Hong-Kong is a free port, and offers every facility to every nation; to merchants of Europe equally with native merchants.

The retail commerce which is done at Canton is in the hands of the English, American, and German houses, branches, for the most part, of the mother houses established at Hong-Kong.

I do not think, however, that it is impossible for the French trade to take the same course as the trade of its rivals and to sustain here the reputation of our own wares, but the only reason why our merchants are inactive is that they lack courage or ambition. It is necessary

that they take the initiative; that they give themselves the trouble to come and examine on the spot the actual conditions of Chinese commerce, study seriously the field of action, and see, in short, what new articles ought to be introduced. Export trade can not be established by itself, nor by Government help, however much this may be the opinion of our merchants; neither can it be effected by correspondence. If the merchants wish to ingratiate themselves they should come and visit the place, this alone being the means of increasing our commerce in China.

What I say of the import commerce is equally applicable to the export commerce, although this may be of less consequence than the other, owing to the presence here of a representative of the house of Cozon & Girand, who make large purchases of silks for the market of Lyons.

The chamber of commerce of Lyons knows, moreover, sufficiently well the market of Canton, and is aware of all the profit our industries are able to acquire. Many buyers of Lyons have frequently been in China. It seems to me that it would be easy to construct a sort of syndicate, the representatives of which might be installed in Canton. A silk syndicate at Canton, particularly, would have in this specialty the same success as the syndicate placed under the direction of the chamber of discount had here, and also at Tien-Tsin.

Having examined cursorily the state of commerce of Canton in the past and present, it behooves us to glance into the future.

The foreign merchants, jealous of the commercial advantages which we have had recently conceded to us by China, notably by the convention concluded the 26th June, 1886, are seeking an offset for their profit in the south of China. The opening of Louang-tchéon, in the province of Kouang-Si to the Franco-Annamite commerce will be a serious blow to the port of Canton. The French and foreign products will, in fact, penetrate more easily in this province by the River Song-ki-Cung than by following the water route running into the Si-Kiang, or the River of the West, and it is presumed that the sending by case or in pieces of the principal products of Kouang-Si will be done henceforth by the Song-ki-Cung, and by Tonkin, with a view to evading the considerable likin duties imposed by the vice-regal government of the two Kouangs. The chamber of commerce of Hong-Kong insists that the cities of Tou-tchéou-fou and of Nan-ning-fou, situated upon the Si-Kiang, or River of the West, in Kouang-Si, be open, as much as possible, to foreign trade before the stream of commerce be directed against Longhthéou and in the Tonkin.

Vou-tchéou-fou is situated in the province of Kouang-Si, at a little distance from the frontier of Kouang-Tong, under Si-Kiang, or the River of the West, in the center of the imaginary circle which passes through Canton, Hong-Kong, Kowel-Ling-Fou (the capital of Kuang-si), Nan-ning-fou and Pok-hoi, and is thus put in direct communication with the interior of China by the many water courses of Si-Kiang and with Hong-Kong by the Si-Kiang itself, which flows into the sea near Macao. This city is destined, if it is opened to commerce, to become the depot of all the commerce of the southwest of China and to take the place of Canton.

Many Europeans have been up the Si-Kiang. Lieutenant Bullock, an officer of the British navy, in 1859; Mr. Mayers, vice-consul of England at Canton, in 1862; Mr. Michael Moss, sent by the chamber of commerce of Hong-Kong, in 1870; Messrs. Colquhoun and Wahab, in 1884; M. H. Schroeter, employed by a German house in Canton, in 1886; Mr. Stewart, formerly commander of a gun-boat of the viceroy of Canton, in 1887. According to their observations it is navigable up to Vou-tchéou-fou during the whole year for steamers drawing 12 feet English (3 m. 65), and during the rainy season (from February to September) steamers are able to go up much higher. This route is now used by junks, transporting rice, indigo and palm-nut oil, cattle, fruit, salted fish, stuffs of Canton and of Fatchan (Fo-chan, mountain of Bandha, a large commercial industrial center, situated upon the River of Canton), in passing by the River of Pearls, in Si-Kiang, to smaller rivers, which unite these two courses of water. One Chinese company possesses three enormous junks, making a reg-

ular service between Vou-tchéou, Fatchan, and Canton, and back again. This commerce by junks would experience a very great impetus, if the likin established along the Si-Kiang had not hampered its transactions. If Vou-tchéou-fou were opened and under the same conditions as the other "treaty ports," and if, consequently, the foreign steamers had the privilege of going up to Si-Kiang, all the merchandise would escape impediments of passage, the delays and the taxes of likin, and would be free from all but the customs duties of the European employés of the maritime customs service, conformably to the tariff actually in force. The commerce would be under conditions singularly easy, and would find at length a great extension. It now requires, on an average, a score of days to go to Hong-Kong from Vou-tchéou-fou in passing by Canton and Fatchan; it would be possible to make the same journey in three days by steam-boat in going by the direct route of Si-Kiang. In view of all these advantages, one can easily explain the insistance of the foreign merchants in general, and of those established at Hong-Kong in particular.

Nan-ning-fou does not present conditions as favorable as Vou-tchéou-fou, which is also upon the Si-Kiang. Upon leaving Ping-nain-chien, not far from Vou-tchéou-fou, this river flows northeast to southwest, instead of continuing its course in the direction of the west, but so far from the Vou-tchéau-fou that the city can not be visited for retail commerce by Europeans. Those who have gone to these ports have encountered such hostility from the inhabitants that they have not dared to pass beyond or to violate the orders of the local authorities forbidding their disembarking. They are thus unable to render an exact account of the products they might have a market for. In addition, the navigation of the Si-Kiang is very difficult above Ping-nain-chien; one has to contend against a very violent current, shallow water, and dangerous rapids. Steam-launches alone would be able to go up so far as Nan-ning-fou. In summer, boats of some size would generally be able to make the journey, because of the natural increase of water, but the precaution should be taken that this part of Si-Kiang should be studied attentively, and that a good chart indicating minutely the shoals and rapids, the channels, and the passes should be made. It can be seen from what has been said that Nan-ning-fou occupies upon the Si-Kiang a situation analagous to that of Tchong-King (Ssen-Tch'ouan) upon the Yang-Tse-Kiang.

There is no doubt in my mind that the Government of China will make the concession sooner or later under pressure of interested foreign powers, and that the Si-Kiang will be as little removed from the open ports as the Yang-tse-Kiang, to which foreign steamers coming directly to Hong-Kong have access. The first open port would be necessarily Vou-Tchéou-fou. As for Nan-ning-fou, it is possible that the cabinet at Peking would have regard for the bad feeling animating the population against foreigners, not wishing to consent to open it so soon to foreign commerce. This would be but a partial surrender, and but an affair of time, for the interest of foreign merchants is the same in this matter as that of native merchants and of the Imperial treasury. The central Government is sufficiently intelligent to comprehend this, and to give satisfaction to the incessant demands of the foreign representatives, especially if it sees that the population are really more favorably disposed toward the Europeans.

The day when the Si-Kiang is opened the commerce of Canton will diminish still further; steamers will not pass the city any more; they will go direct to Hong-Kong by Vou-tchéou-fou, and will transport foreign products nearer the line of commerce. On the other hand, the native products, so as to go in junks on the Si-Kiang and the River of Pearls, will be embarked in the new port on board foreign ships, which will carry them direct without transshipment to Hong-Kong. There will remain for Canton but a limited retail trade.

HUART,

In charge of consulate of France at Canton.

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CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 103.—MARCH, 1889.

PASSPORT REGULATIONS OF TURKEY.

[Translation.]

IMPERIAL TURKISH LEGATION,
Washington, February 12, 1889.

Mr. SECRETARY OF STATE: I am charged by the Sublime Porte to inform your excellency that the examination of the passports of travelers arriving in Turkey is effected at the frontier. Consequently, American citizens resorting to Turkey should provide themselves with the Ottoman consular visá.

Be pleased to accept, Mr. Secretary of State, the assurance of my very high consideration.

A. MAVROYENI.

BLOCKADE OF MOZAMBIQUE PORTS.

[Translation.]

LEGATION OF PORTUGAL IN THE UNITED STATES,
New York, January 14, 1889.

Mr. SECRETARY OF STATE: In compliance with the instructions of my Government I have the honor herewith to send you a copy and an English translation of the decree promulgated by the Portuguese Government on the 6th day of December, 1888, whereby not only the importation, exportation, re-exportation, and sale of all kinds of arms and munitions of war is temporarily prohibited throughout the territory of the Portuguese colony of Mozambique, in East Africa, but also all ports and bays of the east coast of Africa, together with those of the adjacent islands, both Portuguese and foreign, are declared to be blockaded by the Portuguese vessels of the African squadron, only, however, as regards the importation of arms and munitions of war, and the exportation of slaves. These measures have been taken by

the Portuguese Government in compliance with the requests of the Government of Her Majesty the Queen of England and that of His Majesty the Emperor of Germany.

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I have the honor, Mr. Secretary of State, to renew to you the assurance of my highest and most respectful consideration.

BARON D'ALMEIRIN,
Consul and Chargé d' Affairs of Portugal.

GENERAL STATE OF THE CHINA TRADE AT LIMOGES.

There are several striking features shown in the records of china manufacture for the year just closed which specially deserve attention. First of all is the progress made in 1888. In my report dated March 5, 1888, attention was called to the fact that for the first time in six years, the statistics showed an advance in the manufacture of china over the preceding year. Since 1882, when the acme of the porcelain trade was attained, there had been a steady decline until the close of 1886, when the trade had decreased 40 per cent. below what it was in 1882. The reason of this great falling off was due principally to the following reasons: First, the inroads made upon the French market by the cheaper grades of goods, purchased at much lower rates in Germany and Austria, and which were invoiced in large quantities to the United States; second, English stone-china and crockery costing much less than French china, together with the cheaper transportation from England to the United States, forced out the cheap French goods which formed a large part of the invoices of 1882 and 1883; third, the increase of American manufacture and the general overstock of the market of the United States. This great depression in the Limoges market had a serious effect upon the manufactories of this city and its dependencies. Many of the once prosperous houses had to go out of business; others were seriously crippled, and were only kept going because, like a man running down hill, they were unable to stop. The following comparative table exhibits the decline and rise:

Number of furnaces fired at Limoges from 1882 to 1888.

Months.	1882.		1883.		1884.		1885.		1886.		1887.		1888.	
	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.	Coal.	Wood.
January	180	34	115	37	103	33	69	27	80	21	89	22	96	26
February	194	43	123	37	143	37	112	17	121	26	114	24	117	26
March	214	42	197	47	167	42	154	33	125	29	144	29	155	35
April	212	40	195	51	167	41	153	37	129	29	143	25	149	31
May	234	40	205	50	172	43	141	30	112	26	143	27	154	30
June	230	43	204	49	167	39	145	35	123	25	142	27	148	33
July	223	41	201	42	170	39	141	31	139	29	145	29	151	30
August	231	48	208	48	162	35	128	28	132	26	145	27	158	29
September	227	38	194	39	165	35	122	26	135	29	144	25	143	25
October	231	48	222	48	173	38	135	24	143	26	139	31	150	30
November	222	47	193	50	152	33	129	21	140	30	134	30	146	22
December	201	43	182	46	154	33	131	26	129	27	139	28	138	22
Total	2,599	507	2,239	544	1,895	448	1,560	335	1,528	323	1,621	324	1,705	339

The increase in manufacture shown by the above table is due to several causes. A great reaction has taken place among manufacturers. They no longer wait for trade to seek them, but now they seek the trade. Every important house sends out commercial travelers, or has established agencies in the United States, Great Britain, the chief countries on the Continent, and South America. The competition at home has been much livlier. Then the manufacturers here have sought out those articles that they could produce to the best advantage, and in certain lines have given up all attempts at competition. For example, in the invoices of 1882 we see large quantities of cuspidores, toilet sets, cheap tea sets, and certain styles of flower-pots. With the exception of the tea sets, these have almost entirely disappeared from the present invoices. The houses that exported the above articles have removed from Limoges to Bohemia. The result of this change has been that Limoges gives her whole attention to the manufacture of dinner and tea ware, the higher grades of ornamental and decorated work, such as elegant vases, plaques, bisque figures, etc. The second effect of this competition has caused almost a perfect revolution in the making of china. The whole system has been remodeled. As far as possible, hand labor, cheap as it is, has given place to machinery, and this has reduced the cost of production very much. Take, for example, the matter of kaolin. Ten years ago 25 per cent of this valuable material was wasted. The chips from the potters and molders, with the débris from the broken ware before it had been baked, was thrown away; to-day, it is all reground and worked over by machinery. The broken china is now used as an ingredient in the enamel, so that in well-conducted factories not 5 per cent. of the "pate" is lost. Another important item is the improved manner of molding. Within the last two years extensive changes have been made, and the rapidity with which ordinary dishes can be turned off is amazing. These dishes are more regular in form and perfect in shape than those molded by the hand. But by far the greatest of all the improvements has been the remodeling of the whole system of firing china. In old times, wood was the only fuel used. Coal, especially the French varieties, so discolored and soiled the clay that is put in the upper chamber of the kiln that it was rendered valueless, at the same time the china in the lower chamber was unevenly baked. If enough heat was used to bake the china in the center saggers, those on the sides were baked too much, while if the saggers on the sides were baked sufficiently, those in the center, not receiving the full force of the flame, would not be baked enough. This trouble has been obviated by recent improvements on Minturn's reverse-flame furnace. By his patent the whole lower chamber of the kiln was heated at an even temperature. Minturn's furnace differed from the others in having the fire-boxes in the interior of the kiln. Hard saggers are placed just in front of the fire-boxes, so that the first shock of the heat is broken before it reaches the saggers containing the china. Then the flames are guided by flues, which are made by arranging the saggers around the apertures in the floor through which the flames ascend, so directing them up to the roof

of the first chamber to notches in the arched roof; from thence they are guided down another flue, formed, as was the preceding flue, by a draught in the floor, which draws the flames down through an opening in the floor of the first chamber, whence they pass towards the circumference of the kiln up through other flues. Minturn's invention ended here. The heat went into the upper chamber, as in the old-fashioned way, through the center. The Limoges improvement consists in adapting the same principle to heat the upper chamber. This is done by making the flames, when they pass up the second time, go through apertures in the floor of the second chamber, thus heating this part of the kiln equally and facilitating the firing of both chambers evenly. From the above description it will be seen that there are as many apertures through which the flames pass to the upper chamber as there are fire-boxes. In large furnaces there are usually ten, and correspondingly ten entrances for the flames into the upper chamber instead of one in the center, as before. By means of this improvement fully 25 per cent. of fuel is saved and 30 per cent. in the breakage and quality of the china. Within the last two years nearly all of the furnaces have been enlarged. They are now one-fourth larger than they were formerly; so that the 2,044 furnaces fired last year would really equal 2,555 furnaces of 1882; only a difference between the out-put of 1882 and 1888 of 15 per cent., which is a net gain of 25 per cent. for 1888 over 1886.

Another noticeable feature of the present outlook is the increase of decorated ware, both in richness and in quantity. Formerly a decorator used to average the price of a cask of china, when packed and ready for shipment to America, at about 300 francs. To-day the value is 500 francs. Although white china is a trifle lower than it used to be and labor remains the same, yet the price of the decoration has increased. In other words, there has been a rise in the value. This rise consists principally in richer decorations, as the United States buys a finer grade of goods in Limoges than ever before; in fact, the cheap goods have been almost excluded. The amount of china decorated in this vicinity last year was 22,163 moufles, an increase of 1,786 over the preceding year. As each moufle has an average value of 500 francs, the whole amount of china decorated in this vicinity would equal 11,081,500 francs. The whole amount of china, decorated and white, manufactured at Limoges was about 18,000,000 francs. These figures are founded on facts carefully collated from the reports of the different kilns.

The price of labor does not vary much. The gradual tendency is downward. There has been a decrease of 10 per cent. in ten years. The following gives the general wages paid in the different factories to men and women: Boys up to sixteen years, 1.25 francs per diem; furnace men, 2 to 3½ francs a night; potters, 6 to 8 francs a day; decorators, 3 to 8 francs a day; designers, 4,000 francs per annum; girls from fourteen to sixteen years, one half franc to 1 franc per diem; girls over eighteen years, retouching and enamel, 1½ francs per diem; girls over eighteen years, impressions and retouching, 1½ to 3 francs per diem.

There are two syndicates at Limoges, one for the manufacturer and one for the workman. The ordinary run of dishes have fixed prices and are always paid for by the piece. When new shapes are invented or new and special forms are designed, the manufacturer tries to arrange with the potter. If they can agree, it is well; if not, the matter is taken before the workmen's syndicate, where it is carefully described, and they give their decision. If that is still unsatisfactory to the manufacturer he takes it to his syndicate, where a committee is formed to meet a committee from the workmen's union, who arbitrate, and the terms thus made are binding upon the manufacturer and the employé. In consequence of the above arrangement strikes have been unknown in Limoges for several years. The price of English coal used in the furnaces has advanced 5½ francs per ton; all other materials remain as given in last year's report. All the manufacturers speak very encouragingly of the prospects of trade for the coming year, and are running their kilns at nearly full force. Heavy orders from the United States have been reported and the manufacture this year bids fair to surpass its highest record.—LIMOGES, FRANCE, *January 24, 1889.*

WALTER T. GRIFFIN,
Commercial Agent.

SISAL-HEMP IN THE BAHAMAS.

At the present time, and for years past, the islands have depended for exports on such articles as sponges, pine-apples, oranges, dye-woods, and salt, of which the sponge has been really the only safe and reliable one, the others being subject to such contingencies as to seriously impair their value. Another source of income, serving the same purpose as an export, has been salvages received in consequence of marine disasters, often amounting to a large sum. But these have latterly largely fallen off, few wrecks occurring in these waters, owing to the perfect system of light-houses established on the islands by the British Government. The attempts to raise sugar and tobacco have been abandoned as failures. Under these conditions the prosperity of the colony has been on the wane, and the outlook for the future was rather discouraging, people seeking in vain for a reliable substitute that should take the place of their present uncertain industries, until their attention was directed to the matter of sisal-hemp, which promises to bring them the desired relief.

It is well known that within the last five years marvelous prosperity has come to the state of Yucatan, Mexico, from the production of hemp fiber, statistics from that state furnished to the authorities here, and unquestionably reliable, indicating that hemp culture under favorable conditions is a very profitable industry.

Fiber plants will begin to yield within three or four years from planting, and will furnish about 2,700 pounds of fiber per acre per annum. The average price of this in Yucatan during 1888 was 9 cents per pound, giving $243 an acre per annum. As the cost of producing the fiber and delivering

it at the market in Merida was only 2 cents per pound, the net profit to the planter was nearly $200 per acre. With a very large reduction in the price obtained the business would still be highly profitable.

The fact that the sisal plant has been growing in a wild state in these islands for years led to further investigation upon the subject, when it was found that all the conditions of soil, climate, etc., which made hemp raising profitable in Yucatan exist to an extraordinary degree in this colony. The conclusion, therefore, was natural and logical that hemp raising could be introduced into these islands as a regular business with every prospect of its becoming an important and profitable industry, and much interest has been awakened on this subject and important steps have been taken to further this end. Soil and climate being favorable, the question of labor is one of importance, and in this respect no objection can be raised. Labor is plentiful and cheap, employment being scarce and the laborers many. Field hands, men and women, will gladly work, finding themselves, at from 25 to 36 cents per day. It has been said that the Bahamian negro is a lazy, good-for-nothing fellow. This I emphatically deny. Give him steady work, at even moderate wages, with humane treatment, and he is as good as the average laborer similarly situated. There is plenty of land and it is not expensive. Partly improved plantations can be bought at moderate prices, and it is estimated that there are not less than a million acres of Crown land to be purchased at reasonable figures. I have known of Goverment land being sold as low as $1.25 per acre. The reason of such low prices is simply this: The land as a rule is almost worthless for ordinary agricultural purposes, being stony, with a poor, thin soil. In Yucatan this is the very soil that produces the best fiber plant, though fit for little else, and it is not impossible that the stony, sterile lands of the Bahamas may yet advance enormously in value as producers of the sisal plant.

These lands can be cleared ready for planting at a small expense, since they are seldom covered with vegetation larger than small bushes or chapparal, large trees being here an almost unknown quantity. It is not improbable that Crown lands could be leased for a term of years at a moderate rental with the option of purchase during the life of the lease at a low price, the lessee stipulating to put the land under sisal culture.

The fiber can be placed in the New York market promptly and at moderate expense. We have regular steam communication with that port, fortnightly in winter and monthly in summer, with several sailing vessels making regular trips the year round. The Bahamas are so much nearer market than Yucatan that the saving in time and freight would make a material difference in their favor.

The earnest desire of the colonists to promote this new industry is proven by the fact that two acts have been lately passed on the subject. One imposes a duty of 20 per centum ad valorem on all future importations of hemp (an article heretofore on the free list); and the other provides a bounty of 1 cent per pound on all fiber raised here and exported during the next six years. When it is considered that this bounty is equal to one-half of the

estimated cost of raising the fiber in Yucatan, it will be seen to be a most generous one indeed. Fiber machines and all machinery used in the manufacture of rope can be imported duty free. In addition to this favorable legislation an appropriation was made to defray the cost of sending a commission to Yucatan to examine into and report upon the entire subject, and the commissioner, a thoroughly competent and reliable man, is now in Yucatan in the execution of his mission, and is soon expected back with much valuable information. There are no oppressive taxes at present to burden this industry, and those in authority do not hesitate to declare that none such shall be laid in the future.

There is a great want of capital in this colony. Indeed, the people are by no means wealthy, and it is probable that the progress of the hemp industry will not be rapid unless foreign capital, English or American, shall be invested here. To the extent of their means the colonists are entering into this business, which is proof of their faith in its success. A number of small fiber machines are already at work, and several shipments of fiber have been made which bore the test of examination and found ready sale abroad at good prices. Thus we can claim that, so far as the production of the plant, the preparation of the fiber, its shipment, and its reception in the markets of the world are concerned, the hemp industry of the Bahamas has passed beyond the purely experimental period of its history, and is an accomplished fact. As I have just stated, this industry needs capital for its proper development. The climate, the soil, the labor, and the land are here, but that great motive power in all enterprises — the money — is wanting. If capital be found, then the industry will flourish vigorously and rapidly; if it be wanting, then hemp culture in these islands will develop very slowly, but I think none the less surely, for its ultimate success is, in my opinion, only a question of time. Foreign capital will receive a most cordial welcome. It will be invested in a country where there is a stable government, where good order and a boundless respect for law and order prevail, where safety to person and protection to property are guarantied by the flag of Great Britain, and where the colonial authorities will extend every facility in their power to promote the interests of investors.

Thus with a soil and climate suited to the growth of the sisal plant, with land plentiful and low in price, with labor abundant and anxiously awaiting employment, with frequent and satisfactory transportation facilities to a good market close at hand, with a good article, easily produced, readily sold, and always in demand, with a government bounty which equals one-half the estimated cost of production in other countries and lasting for six years, with large profits at a minimum of risk reasonably assured, with colonial authorities ready to assist in every possible direction — with all these conditions it would certainly seem as if an opening was here presented to American capitalists and investors to embark in an enterprise which, to say the very least, they should in their own interest be willing to promptly and carefully investigate. Parties, indeed, in New York, who have made money in hemp raising in Yucatan, have already become interested in the matter, and have

leased considerable land for a term of twenty-five years which they propose to plant without delay in sisal; and this venture is hoped by the colonists to be only the forerunner of similar investments by people from abroad.—

NASSAU, NEW PROVIDENCE, *January 15, 1889.*

THOS. J. McLAIN,
Consul.

CONDITION OF THE WOOLEN TRADE IN FRANCE.

Orders in plain and fancy cloths were numerous at the close of the year, although checked in a degree on account of the usual inventories of stock taken at this season. However, the factories at Elbeuf, Roubaix, Louviers, and Fourmies, at the north, and Mazamet, Bédarieux, and other wool centers at the south, have been running on full time.

At Roubaix, the style for dresses for the next summer has met with great success, but stuffs for general use are in less demand. Merinoes, 9-8 and 5-4 in width, have advanced 5 to 7 centimes (1 to 1⅜ cents) in the last fifteen days of the year. The sale of flannels was also large, and at better prices.

At Fourmies, the importation of new wool, in addition to the wool bought at the late London sale, has caused the best display of combed wool that has been offered in that market. Holders have been obliged, therefore, to concede in price from 15 to 20 centimes per kilogram upon the average qualities. There is no change in the price of blouses; sales are at all times easy at the same price. This situation will remain unchanged until the importations directly from Australia and Buenos Ayres begin to arrive.

For 9-8 merinoes and other stuffs for home consumption an advance of 1½ cents per meter has taken place, and in spite of the usual dull market at this season of the year some sales have been recently made.

For such articles as are prepared especially for export, such as plaids of various kinds, the advance obtained heretofore is less perceptible. However, no stock exists. There are even some orders taken at so low a figure that they will not be delivered, and will be replaced by something else.

From the study of the woolen industry, it appears that France actually is the country where the greatest quantity of wool is employed in various manufactures. The following table is compiled to show the comparative consumption of the leading manufacturing countries of the world in 1887, Spain alone being omitted, as no data of that country could be procured:

Consumption of wool in the leading manufacturing centers of the world in 1887.

	Kilograms.
France	190,000,000
England	180,000,000
United States	170,000,000
Germany	140,000,000
Russia	80,000,000
Austria-Hungary	40,000,000
Belgium	40,000,000
Italy	32,000,000
Total, less Spain	872,000,000

There were 62,429 kilograms of cloth and 441,639 kilograms of wool sent from the railway station at Mazamet during the month of November last. During the corresponding month of the year 1886 the shipments from the same station were 85,369 kilograms of cloth and 377,360 kilograms of wool. The following table shows the comparative quantity of woolen materials exported from France during the first nine months of the years 1888, 1887, and 1886:

Exports.	1888.	1887.	1886.
	Kilograms.	*Kilograms.*	*Kilograms.*
Wool in bulk (washed and scoured)	190,569	63,831	250,500
In grease or washed	15,587,735	12,811,000	13,595,000
Combed and carded	7,736,243	6,164,485	5,754,100
Waste	11,768,517	13,552,371	12,520,070
Cloths, kerseymeres, and other tissues	8,537,100	8,063,076	8,063,503
Upholstery goods	306,300	204,075	186,031
Sundries	9,139,300	8,162,758	6,356,832
Hosiery	693,600	831,386	824,013
Lace and ribbons (all wool)	600,800	537,347	784,685
Wool mixed with other materials	152,800	177,174	125,387
Wool mixed with other materials, for furniture	84,800	148,143	191,388
Miscellaneous goods	1,807,500	2,571,660	3,070,337

During the month of October last Belgium imported 78,580 kilograms of woolen yarn, 206,320 francs worth of woolen goods, such as cloths, kerseymeres, and similar goods; coatings and other heavy goods to the value of 215,390 francs, and of light fabrics 1,577,330 francs' worth.

The exports meanwhile consisted of 971,810 kilograms of woolen yarn, 71,000 kilograms of cloth, kerseymeres, and similar woolen goods, 12,460 kilograms of coatings and like goods, and 37,540 kilograms of light fabrics.

At Halifax, although the market is in the main firm, holders are willing to slightly concede in their prices.

Spinning is active, but export orders are few. Although, as is usual at this season of the year, the market is quiet, still several important purchases have been made. At Bradford purchasers buy from time to time in small quantities to supply their pressing wants.

The trade, however, in the aggregate amounts to considerable. Merinoes and twilled goods are firm, but less active. The spinning mills have considerable yarn from Australia. New orders are given with some reluctance and hesitancy on account of high prices. The sale of tissues is moderate, but the mills are running full time on orders in hand.—ROUEN, FRANCE, *January 24, 1889.*

CHAS. P. WILLIAMS,
Consul.

GLASS INDUSTRY OF BOHEMIA.

As the returns of this office show, the largest class of exports from this district are manufactures of glass. These come mainly from Gablonz, a flourishing town about 7 miles from here, and its surrounding neighborhood. Gablonz manufactures and firms are known the world over. Its prisms

ornament the palaces of the old world, and its mock-jewelry penetrates the recesses of the Dark Continent; its glass-ware ornaments our tables, supplies our offices, and furnishes decorations for our savages.

One of the great markets for Gablonz goods is Paris, and a recent report from the Austro-Hungarian chamber of commerce in Paris is, therefore, of considerable interest. It reads as follows, and its subject is

GABLONZ IMPORTATIONS IN FRANCE.

Glass beads are, as is known, one of the most important articles of fashion, and consequently the trade in this article depends most absolutely upon the caprice of the fickle dame. Since September, 1888, an unexpected crisis occurred in the bead business. The prices have fallen more than one-half, and in spite of this there has been no considerable trade. Cut beads, which formerly sold at 12 florins, are now bought at 4½ florins.

This enormous depression is attributed not only to the lack of demand, but also to overproduction and the existing stock on hand, but more properly to the great competition which has lately arisen here (Paris), and which, through the accumulated offers, has lowered the value of the wares. A large demand in the bead business can not be forced, as they are not yet *a la mode*.

If the prices were only not under the cost of production and the producer could make his living expenses; but, indeed, little attention is paid to the price at which an article can be manufactured—whether the workman earns his bread or not is not considered. In order to create business goods will continue to be offered at cheap prices.

The duty and freight arising from the franco-house delivery sales are even neglected in the calculations, the result of which is that neither workmen or manufacturer finds a profit. This state of affairs has had much to do with the impoverishment of the bead industry. Should the fashion for beads again arise and the demand for a particular kind ever be noticed, the price would jump to double or more the regular price. On account of this elevation of price, however, the goods, instead of being of the original quality, would be delivered worse and worse, and it would be impossible to count upon certain delivery.

In late years the French porcelain beads, which are distinguished by their regularity and large holes, in consequence of which they can be more easily used, have nearly displaced the Bohemian so-called "Trempelzeug," pressed beads. It is to be regretted that the experiments which were made in Gablonz in this direction had no favorable result, as the present beads from Gablonz have, in their own line, the preference, being blacker and more brilliant.

As the French beads have displaced the Bohemian pressed beads from the market, so have the Italian beads—the so-called "macca"—caused a marked competition to the Bohemian moulded beads which come before the trade under the name of "doppelschmelz." The Venetian manufacturers have, in the last year, greatly improved this ar icle, and are now in position to

insure for their symmetrical ware a considerable sale at a very cheap price. Labor being cheaper in Italy than in the Gablonz district it costs more to produce the Bohemian doppelschmelz than the macca. Were the difference in price not so great, the former would have the preference on account of their lightness, finer brilliancy, and blackness, in which they excel the Venetian article.

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Very recently a new kind of cut bead was exhibited, which passes under the name of "machine beads." These may have a future if they are produced with larger holes, and can be more easily prepared.

A prominent disadvantage for the trade in Bohemian beads is the uncertain number contained in a bunch. Buyer as well as seller is never certain really how many beads there will be in each bunch. A prolonged usage determines that there should be twelve hundred beads in a bunch, but it is one of the many results of the aforesaid competition that a reduction below the normal has been made for a long time. It was declared that during the last bead season many bunches of beads contained, instead of the usual twelve hundred, only eight hundred and fifty. This fact becoming known caused all sorts of disagreements and resulted in the consequent payment of quite enormous indemnities.

In July, 1886, the Gablonz exporters determined in common to attempt to remedy this evil and sent to their customers as well as the producers a circular, as follows:

(*a*) That under the designation "bundle" or "lot" a fixed quantity of one hundred dozen, or twelve hundred pieces, is to be understood.

(*b*) That from August 1, 1886, all Bohemian beads will be bought and sold only upon this unit of quantity.

(*c*) That the price of all Bohemian beads is fixed from this time only for the full quantity of one hundred dozen.

This alliance, unfortunately, did not come into operation.

It is known that in threading the various kinds of beads one row is counted and the others calculated therefrom, as each string must contain about the same quantity of beads. One can tolerate, if necessary, a certain percentage of shortage, but to receive in a bunch instead of twelve hundred only about nine hundred is not to be overlooked, and this abuse must finally be given up. This would be of great service to the bead trade, and restore full confidence abroad.

BUTTONS.

Lately there has been no appearance of an improvement in the button trade. Sales have decreased and prices are worse. It is a pity that also with this article competition has enormously depressed the prices, so much the more as these goods now, thanks to the new French tariff, must carry a duty up to 60 per cent. This specific duty is not sufficiently regarded by all manufacturers in fixing their prices, so that it has happened that some of the most salable articles sold "free Paris" were delivered at a price which, after payment of duty and freight, absolutely did not pay expenses.

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CRYSTAL WARE.

Prisms and "kozzen" occupy the rank of necessities, for which the demand seldom varies. During the bead season, however, there is little of this article produced, in consequence of which the prices increase extraordinarily, which gives the chandelier manufacturer in France an inducement to experiment in the fabrication of these goods. After the expiration of the bead period the production of this article is again undertaken in great quantities in Bohemia, so that large stocks are received, which, in the face of moderate orders, cause the price to again fall.

INKSTANDS.

Inkstands are, compared with former years, less bought, the greatest demand being for the cheaper cut-glass variety. Through a specific duty the charges are too great, and stand in no relation to the real value of the article.

IMITATION GEMS.

Inasmuch as the earnestly-desired fashion for jewelry has not yet materialized, there is no substantial demand for glass stones, consequently the Jura manufacturers have lowered their prices considerably and deliver certain kinds cheaper than the Bohemian manufacturer can afford to do. The little that Gablonz produces is divided among the numerous Gablonz firms who deal in stones, and the prices are much depressed. As black jewelry is only used for mourning purposes black stones have not the desired demand. In pressed stones very beautiful and cheap ware is manufactured in Paris, and it is recommended to the home fabricants to improve themselves in this direction that by later demands they may not lose their opportunity.—REICHENBERG, *January 10, 1889.*

JOHN B. HAWES,
Commercial Agent.

CONDITION OF TRADE IN ACAPULCO, MEXICO.

It is now an ascertained fact that the contemplated railroad from Acapulco to the City of Mexico will be constructed, and in a shorter period of time than could have been anticipated. The English capitalists who have undertaken the work have obligated themselves to have the road in running order within two years from last November. In May it will be finished from the City of Mexico to Amacusac, which is a little over one-third of the entire distance. When this road is completed Acapulco will occupy a position it has never before held, and its splendid harbor will be utilized by a merchant marine that will convey into it the products of Central and South America.

IMPROVEMENT OF TRADE.

It is surprising, when we consider the direct interest our Government and people have in extending their commerce and social relations with these peo-

ple, that these matters receive so little attention. The stores are full of European goods; the machinery brought here in the main comes from England, while all that is most valuable that men wear or have in their houses comes from far distant lands. This is not pleasing to the pride of an American. Even California, close as it is, with an open sea and an American steam-ship company, subsidized by a foreign power to stimulate its great city, overflowing with superabundant wealth, moves with lethargic steps to avail itself of advantages that other countries are seeking and rendering profitable.

Are we true to ourselves or to American history and traditions when our people fail to seize the opportunities presented them? This country and not Europe is the theater of American action and American statesmanship. This continent is the great fulcrum from which American sentiment will extend its influence upon the civilized world. And these countries, from the Arizona border to Buenos Ayres, are the agencies to be employed in that political and social revolution which awaits the future and is replete with blessings to humanity.

Our consular reports are full of complaints of onerous tariff exactions, of singular sales, not always uniform, bristling with custom-house fines for insignificant omissions, and the difficulty of meeting the demands of trade. But it is a significant fact that the European merchants and manufacturers make no complaints. They wisely adapt themselves to the situation, acquaint themselves carefully through their merchants with the laws of the country and comply with them. When their goods arrive here their papers are all properly made out, and their goods are of the quality desired and put up in such safe packages as to render them salable. They and their merchants rarely have any trouble with the custom-house. They sell by sample. Being informed, as in this locality, that a high-priced article of prints or domestics or other goods will not sell, they send, as directed, a cheaper article. They are told, for instance, that cotton goods must be put up in 24-yard packages, and white goods in 40-yard packages, and they comply. If an implement is to be made the directions are strictly carried out. When Americans violate all these rules of plain common sense; when they quarrel with the custom-house, send goods that are unsalable and put up in packages that are unsatisfactory, fail to make implements as desired, and attempt to sell by circulars instead of samples, and with no American merchants to represent them, is it surprising that our country is losing a trade it ought to enjoy in its fullness? On this coast there are Germans, Englishmen, Frenchmen, and Italians engaged in trade, and but very few Americans, not many of these being representative men. The Europeans evidently read carefully the CONSULAR REPORTS issued by the Department and note the advice given in them, and also seek advice here. The American merchant and manufacturer takes no such pains. The numerous letters which consuls receive show that a very large class of Americans seemingly are not aware of the efforts made by the Government, at such great expense, to inform them and to promote trade. If American merchants and manufacturers would move more intelligently and

harmoniously they would secure a trade that will ultimately develop into grand proportions. It is not simply that they have the best claim to it and greater reasons to endeavor to secure it, but their opportunities are greater. Why, then, neglect it?—ACAPULCO, MEXICO, *January 24, 1889.*

R. W. LOUGHERY,
Consul.

THE GLOVE INDUSTRY OF PRAGUE.

HISTORICAL DEVELOPMENT.

The capital of Bohemia, with a population of more than 300,000, including the suburbs, has become the center of a considerable glove-making industry. The so-called French glove-making trade was introduced in Prague about one hundred years ago. The ancient home industry having been annihilated by the thirty years' war and its consequences, like many other branches of industrial activity in Bohemia, the new start was not made until the year 1784, when M. Etienne Boulogne came to Prague from France and founded the first glove manufactory, not only in this city but in the whole Austrian Empire. He called his workmen from France, and had to carry on the process of manufacture in all its stages—from preparing the raw material to the finishing of the gloves; from tanning the skins to the trimming of the finished article.

For several years there was no home competition at all, and for half a century the firm of Pierre Boulogne & Co. was the leading glove manufacturing firm in Prague. This firm received a prize at the industrial exhibition in Berlin in 1844, the jury having found the goods to be "substantially made, of a beautiful color, the stitch very neat, and the price reasonable."

In 1850 the union of the glove manufacturers of Prague was formed, which took part, as a body, in the industrial expositions of London in 1851, New York in 1853, and Paris in 1855, through which the Bohemian article became more extensively known. The importation of French kid gloves to Bohemia nearly stopped, and kid gloves of Bohemian manufacture found a market abroad.

From the Paris Universal Exposition in 1855 one of the glove manufacturers of Prague brought home Jouvin's cutting-machine and introduced it in the factories of this city. At the Centennial Exposition in Philadelphia the glove manufacturers of Prague were represented by a collective exhibit, to which the jury awarded a bronze medal.

STATISTICS OF THE TRADE.

The state of the glove-making industry of Prague at the close of the first century of its existence (1884) is shown by the following figures: There were 120 firms engaged in the manufacture of gloves, employing 586 workmen, 225 apprentices, and 65 cutting-machines, and producing yearly 300,000 dozen of gloves, valued at 3,000,000 florins, 1 florin being equal to about 40 cents in American money.

At the present time there are 125 firms, the great majority having only small-sized shops. Not more than four or five of them employ 25 workmen or over, and they are ranked among "large factories." In round numbers about 600 men and 300 boys, besides some 1,200 seamstresses, find employment in the trade.

The annual production is about 400,000 dozen, worth about 4,000,000 florins. The leading firm of Prague employs some 80 men in the factory, and ships about 35,000 dozen to England and 8,000 dozen to America. On the whole, only common goods are made in Prague, the manufacture of which does not require the employment of skilled and expert seamstresses. Consequently the finest sorts, or Piqué gloves, are still imported from France and England.

THE EXPORT TO THE UNITED STATES.

The first shipment of Bohemian gloves to the United States was made in 1860, but until 1883 the export to the United States was limited. Only within the last five years has it assumed larger proportions, as will appear from the subjoined table:

	Value of exports.
1884	$22,132
1885	26,973
1886	99,292
1887	121,660
1888	206,644

The total export of gloves from the Austrian Empire to the United States in 1887 was $170,554, so that the shipments from Prague were over 70 per cent. of the whole.

WORK AND WAGES.

Apprentices must be at least fourteen years of age. They are indentured for from three to five years, during which time their pay is very small, in fact, only nominal, commencing with 50 kreuzers a week, and reaching finally a maximum of 2 florins a week (1 florin of 100 kreuzers having a value of 40 cents). Sewing is done on machines, always by women. The machine does everything except embroidery, and the sewing of common gloves is learned by any person of ordinary intelligence within a week. The wages paid to men for cutting are shown in the following table:

	Florins.
One dozen gloves for men, two buttons	1.00
One dozen gloves for women, two buttons	.96
One dozen gloves for women, four buttons	1.02
One dozen gloves for women, six buttons	1.14

For every additional button, a half kreuzer per pair more.

A good workman cuts thirteen or fourteen dozen a week, working ten hours daily, and with overtime work he cuts fifteen to eighteen dozen a week. The average weekly earnings of cutters may be set down at 10 to 15 florins. Foremen instructing five or six apprentices are paid 20 to 25 florins a week.

For sewing the following wages are paid:

	Kreuzers.
One pair, two buttons	8
One pair, four buttons	9
One pair, six buttons	10

For every additional button a half kreuzer more is paid,

The day's work of a good seamstress is on the average fifteen to twenty pairs; sometimes, by great effort, thirty to thirty-five pairs a day are sewn. The work of sewing, however, is subdivided. One person makes holes, another performs the sewing and hemming, and the third embroiders, so that a seamstress must have two assistants. The embroidery is paid, according to strength of silk, from 80 kreuzers to 2 florins a dozen, including the material; for the work exclusively only 24 to 36 kreuzers per dozen is paid. Hence the wages of the seamstress are reduced by the amount she pays her assistants, and they are also reduced through the system of middlemen or "sweaters," which obtains in this trade. On the whole the earnings of a good seamstress do not exceed 6 or 7 florins a week. — PRAGUE, *January 10, 1889.*

CHARLES JONAS,
Consul.

RUSSIAN PETROLEUM IN NETHERLANDS INDIA.

A trial consignment of 2,000 cases of Russian petroleum has been landed at this port, and 10,000 cases have also been received by the same firm at Sourabaya. This experiment has been discussed for two years or more, but it was not until the last of November that the project took the practical form above indicated. Sales of part cargoes were made easily at 3.625 guilders per case, while the American article was quoted at 3.65 guilders per case only.

No other importer has, up to the present, followed this example, as it is too early yet to learn the result of the experiment. Should the oil prove, however, sufficiently satisfactory as to meet the needs of the native population, with whom cheapness is the most powerful argument, the interests of American producers in this line are likely to suffer from a competition which, until now, has been absent from one of their best markets in the East. Next to piece goods, petroleum has become of preponderating importance in the import trade, as there is scarcely any other country where the use of this oil has extended with such rapidity as in Netherlands India. At all events, the contrast with British India is marked, for that immense territory, with its 200,000,000 population, does not consume, on an average, more than three-quarters of a liter per person, while Java's 27,000,000 only require 3 liters at least on an average for each person. In 1886 the import for Netherlands India was 17,467,560 gallons, and in 1887 15,661,800 gallons, while the amount received for the past year also promises to reach the latter figure. — BATAVIA, JAVA, *December 15, 1888.*

HORATIO G. WOOD,
Vice and Deputy Consul.

TOBACCO CULTURE IN DUTCH INDIA.

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REPORT OF VICE-CONSUL WOOD, OF BATAVIA.

In view of the growing importance of tobacco culture in this colony, and too, in consideration of the prominent place which this article occupies among the imports into the United States of produce from Netherlands India, now amounting to an annual value of between $3,000,000 and $4,000,000, I have procured information tending to indicate the encouragement given for great outlays to establish and promote this interest, as well as to show the source of the large profits attending these investments. Regarding the industry itself, it may be said that tobacco is planted very generally throughout the island of Java. In fact, wherever a native householder has a patch of land suitable to the growth a small quantity of seed is sown to supply the wants of his family, and to make an honest penny by disposing of the surplus of the crops to the Chinese traders. The plant is inferior, however, and produces a leaf which finds favor in the native markets, but is, generally, of too rank a flavor to suit the tastes of most Europeans. A superior quality is, nevertheless, raised at Gourabaya and Madicen, where the cultivation is in the hands of Europeans, who possess lands ceded by the Javanese. But it is in the other provinces of Pasaranan, Probalingo, Banjoumas, Kediri, and Besouké, that the largest quantities are grown by native planters, who sell the crops to dealers in the bazars. From data furnished by the latter it may be stated that the harvest for 1886 amounted in round numbers to 16,905,000 pounds, and in the year following to 19,539,640 pounds, while the exports for these periods were, respectively, 1,110,000 and 1,997,700 pounds.

As regards the European market, however, the Java product bears little comparison, either in quality or in quantity exported, with the Sumatra product from the eastern districts of Deli, Langkat, and Siak, especially, where the importance of the culture is increasing from month to month and is rapidly becoming one of the chief sources of revenue for the Government, by which, therefore, every inducement is held out to capitalists and planters towards expending money and effort in these fertile regions. At present the sole hindrances to a most remunerative business seem to be due to the difficulty of procuring efficient labor and to the unsettled condition of the country.

The Malays have settled along the coast only, as is their custom, and occupy a belt of land not wider than 20 miles. Back from the sea, towards the interior, there is another race of people, called the Battaks, who are native to Sumatra, and have not yet been brought into subjection by the Dutch authorities, and whose presence is a source of much anxiety and loss to the planter, since, though by nature gentle and peaceable enough, they are prompt to avenge a wrong by pillaging and burning property, in which destruction the innocent often suffer alike with the guilty. Again, carelessly guarded live stock and open buildings prove an irresistible temptation to

theft, especially in view of the refuge from pursuit and punishment which the jungles and mountains behind them offer. One cause of grievance which deserves attention lies in the fact that many plantations sold to Europeans by the Malays were wrongly claimed by them from the Battaks, while the latter—naturally, too—resent the daily encroachment by the Europeans upon their domains which deprives them of their old haunts and dwelling places.

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Concessions are now to be obtained from the native rulers themselves, subject, of course, to the approval of the Government of Netherlands India, for a period of seventy-five years, with the right of the lessee to sublet, in whole or part, one-third of his grant. Formerly the very best localities were bought for a small present of watches, knives, musical instruments, weapons, and the like. Nowadays, however, the Battak sultans and emperors, awake to the signs of the times, and having learned by costly experience the cash value of their estates, demand payment in money. The amounts required vary with the nature of the soil and the climatic advantages adapted to tobacco growing. For example, at Deli 1 *bonn* (8,487.72 square yards) brings $50, Mexican standard; at Sirdang, $5; while at Assil-Tanah a yearly rent of 50 cents is charged per *bonn*.

COST OF CONCESSION.

To estimate the cost of concession allowance must be made for differences due to the site of the plantation, whether upon the plain or upon the mountain side. Now that the lowlands have been claimed, newcomers are obliged to resort to the high plateaus, at an elevation of from 1,500 to 3,000 feet above the sea, thereby increasing the expense of transport and road making, though this outlay is, in a great measure, balanced by the expenditure upon the valley territory for ditches and suitable dikes along the river banks. The preliminary expense for a concession of, say 1,000 *bonnes*, situated 5 miles from the sea, with a force of two hundred coolie farm hands, may be stated as follows:

1. Expense of survey, traveling expenses, and presents to natives	$6,000
2. Drains, ditches, dikes for two rivers for 6 miles; small canals, for first year, traversing fields for a distance of 12 miles at, say 30,000 meters at 5 cents per meter	1,500
3. Clearing land for drainage	500
Highway for approach to plantation and for base of system of roads, 3,000 meters at 20 cents per meter	600
4. House for planter	300
House for two assistants	300
House for Chinese overseers	100
Six houses for coolies and six foremen	150
Six houses for Javanese, or natives	150
Hospital, two shops, and store-house	150
Twenty drying-sheds for tobacco, dimensions 25 by 36 meters, to accommodate twenty coolies, at $6 per 1 m. 20 c	2,400
One shed of heavy planks to shelter leaves while fermenting	400
Rafters for roofs of above buildings, 320,000 at $16 per 1,000	5,120
Also 140,000 cross-beams, at $10 per 1,000, and $800 worth of rattans	2,200

5. Five baling presses	800
Scales and thermometers for fermenting process	40
Six ox-carts at $40, and six yoke of oxen at $80	720
Three horses, harness, saddles, and one carriage	400
6. Cost of hiring sixty laborers for making drains, traveling expenses, fees to commissioners at Batavia, Samarang, or Singapore, at $15 per man	900
Engaging two hundred and fifty coolie planters, the expense including fifty persons more than are necessary, as the working force soon decreases in number by desertions, sickness, etc	2,500
Other losses	1,500
Total	26,960

Though the site of the area under cultivation is changed from year to year the sheds are, however, left standing for three seasons.

HOW THE DWELLINGS ARE BUILT.

The dwellings intended to be permanent are solidly built, and are grouped as closely together as possible. In building them the hard woods in the vicinity are employed, or those kinds of more durable nature may be obtained from the Chinese and Malay lumber merchants along the coast. Poles for drying the tobacco cost from $8 to $12 per thousand; the supports are valued at from $40 to $60 per thousand; braces, from $25 to $100 per hundred. Sometimes the boards are sawed upon the plantation, but more frequently they are brought from Penang or Singapore at an expense of from $25 to $70 per hundred, the dimensions being 15 feet by 1 foot and of varying thickness. The price of rafters is about $12 per thousand. Of materials for roofing zinc has been found to make the buildings too warm, and only boards and fluted tiles have proved satisfactory. Before the opening of the railway, in 1884, wood was almost exclusively used in building. Since that date, however, planters have erected commodious and substantial bungalows of brick and stone.

PEOPLE EMPLOYED IN RAISING TOBACCO.

The character and number of the people engaged in raising tobacco may be briefly set down as follows: In the Deli, Siak, and Langkat residences there are from one hundred and forty to one hundred and fifty plantations, worked, on an average, by 300 Chinese, 100 Javanese or other laborers, besides 100 natives engaged in building; from 40,000 to 50,000 Chinese coolies, 20,000 to 30,000 Chinese traders, 8,000 to 10,000 hired Javanese, 2,000 to 3,000 others, 6,000 to 8,000 hired Tidians from Malabar, 800 Europeans, planters or salaried; 200 Europeans, merchants; 200 Government officials, and 200 to 300 soldiers.

LACK OF SKILLED LABOR.

The question of efficient labor is the source of perhaps the greatest annoyance to planters, both on account of the difficulties in the way of procuring desirable workmen, who will not join in a strike; who are intelligent, law abiding, and industrious; and, too, because of the constant attention

necessary to control the large numbers required for the culture, and to prevent broils between the different races and among their members. So troublesome, indeed, has the present system become that, it is stated, a Dutch commission visited Madras recently with the purpose of seeking, with the aid of the English authorities, some method of removing the difficulties above mentioned, and of facilitating the emigration of Hindoos, since here, as at Penang and Singapore, the latter control immigration into Sumatra by requiring their visa to all contracts made by these people for this country, as well as by requiring all Chinese and Siamese to appear before the commissioners at the latter ports to pay the necessary fees and to become entitled to British protection. Laborers are of different races, though the majority are Chinese from Amoy. There are, under the control of each planter and in the charge of a director, from three to four hundred coolies, separated into gangs of forty men under an overseer. Their contracts are made out at Singapore or Penang before a Chinese commissioner for a term of three years, though as soon as they have paid their debts they are free.

WAGES.

The rate of wages depends upon the demand for labor, but when there is, as in 1887, a brisk call for coolies, each man receives $120 for the term of the contract and $33 in advance. As the accounts are not closed until the end of the season, in December and January, prepayments are allowed semi-monthly and on every feast day. The employer agrees also, on his part, to pay for medical attendance and medicine in case of sickness, and to supply each gang of forty coolies with a house, well, and water-filter. If neglectful of his employés in the above particulars, he becomes subject to prompt and severe punishment by the authorities, while misdemeanors by the former are punished by the court by imprisonment, and crimes by hanging after a trial at Batavia.

Chinese in the neighborhood of a plantation, but not employed thereon, usually find work in the shops of their countrymen. In the absence of these dealers stores of provisions of rice and dried fish are kept in the planter's storehouse. The workmen buy what they need, and, if near a village, are granted leave every fifteen days to get their supplies from its shops. Two days of rest are allowed each month, together with six or seven feast days, including four days' holiday at New Years.

COOLIE, CHINESE, AND JAVANESE LABORERS.

The coolie breaks and works the soil, sows the seed, cares for the plant, gathers the leaves, and hangs the crop in the drying-sheds on his own account. He has, besides, to obey rules regarding working hours, giving not less than ten daily. The employer pays him $8 per thousand plants, according to their quality, and, also, 1 mill per bundle for tying together the leaves and 3 mills to assort them according to color and length; and for many other duties, such as repairing roads, making drains and the like, 20 cents per day; so that an industrious fellow makes a clear profit of from $50 to $200.

The Chinaman who re-engages at Deli makes a contract for a year only, at the expiration of which he is free, unless there are advances to his debit. In this case he is retained during the following year, and if still uncancelled, for another year additional, but for no longer period.

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The Javanese are engaged at Batavia or Samarang at the rate of 6 guilders a month of twenty-eight days of ten hours each, with an advance of 40 guilders and a prepayment of traveling expenses by the planter. This sum, small as it may seem, is, however, an advance for them of from 25 to 50 per cent. over the wages procurable in Java, a third of which are required for daily living expenses. They are, nevertheless, rarely employed in cultivating the tobacco, though several endeavors have been made to encourage them to plant in the Javanese manner. But as they require constant direction and oversight, for they have not as yet acquired habits of industry or independence, though emancipated from slavery some thirty years since, this project has been abandoned, for the present at least, and it has been necessary to return to the Chinese, who are excellent farmers, interested in their work, intelligent and active, but restive under control. The same experience has resulted from the trials of the natives of Madras, Pondicherry, and Ceylon, who, also, proved inferior workmen to the Chinese. The Hindoos, or Klings, as they are called by Malays, excel, however, in making chains, dikes, roads, and water-ways; and, too, in the care of live stock. The Bengalese are good watchmen and messengers. For the smaller buildings, such as sheds and stables, natives from Borneo and Siam are engaged at a salary of $8 per month each, the contract made at Singapore with the latter people being for eight months usually. Battaks and Malays make clearings in the forest in consideration of $30 per opening of 200 meters square, or $7.50 for 2½ acres, though a smaller sum is accepted if the jungle growth is young.

THE DELI TOBACCO DISTRICT.

Of the districts in Sumatra best adapted to this industry that of Deli deserves first mention, since it yields the best results, which are due in a great measure to the richness of the soil, and, also, to a most favorable climate, enjoying, as the country does, frequent light rains, and possessing, besides, advantages shared in a less degree by other residencies, and not at all by Java. The Deli lands lie upon tracts of country sloping from the mountains to the sea, and extend from 6 to 40 miles from the shore inland, with an average width of territory of 8 miles. East of Deli lie the Girdang plantations, and those of Bidoquet and Padang, stretching along the eastern slopes of the mountains. They are under the sway of native princes, however, though within the limits of the Deli residency. All soils found in this region are not equally favorable to the culture of tobacco, for, while at Deli and Kunghast the land is of volcanic origin and is rich and easily worked, that towards the east is sandy, lacks fertility, and produces inferior tobacco. Six days' drought in this locality is serious, as the depth of the soil is far

less than that at Deli, where an absence of rain for thirty days even would not cause much damage to the crops. That the district does not, however, experience any lack in this respect may be seen from the measurements and observations made at Batimoos in 1887:

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Months.	Rainy days.	Quantity.	Months.	Rainy days.	Quantity.
		Inches.			*Inches.*
January	18	0.620	July	12	0.168
February	20	0.583	August	21	0.416
March	17	0.350	September	11	0.260
April	18	0.625	October	20	0.545
May	22	0.502	November	27	0.883
June	16	0.345	December	24	0.882

AVERAGE YIELD.

The average product for a plantation of 300 coolies is about 900 pounds per coolie and for an area of 2½ acres; but with a painstaking workman, employed upon good soil enriched by guano, a yield of over 2,000 pounds of leaf is easily obtained, the price varying from 1.64 guilders at Shanghai to 0.635 guilder at Bilo.

As the coolie is the cultivator, he must accordingly defray the outlays expended in improving his lands by means of drains, clearing forest growth, and the like. He must, besides, provide himself with the following tools: A hoe, valued at 0.40 to 0.75 guilder; a pruning knife, price 0.30 to 0.40 guilder; a rake, 0.30 to 0.40 guilder; an axe, 0.50 to 1.20 guilders; two large utensils for carrying water, 0.40 to 0.50 guilder; two small pails for bathing, 0.15 to 0.20 guilder; two extra hoe handles, 0.15 to 0.20 guilder.

PROCESS OF CULTIVATION.

During the summer months of February, March, and April the fields are prepared and the seed is planted. In May and June light rains nourish the young plant, but occur only at rare intervals during July and August. The plant then matures, and the crop is gathered before the heavy rains begin in November. After the forest has been cleared away, in December and January, by the natives, with axe and fire, a nursery bed is sown every eight days. If the farm work is enough advanced, and rain falls in abundance, the coolie begins to plant the shoots forty days after the first sowing; but if circumstances are unfavorable, he destroys the nursery. In April, May, and June he thins out the rows. In planting he makes use of a string, upon which are knots at a length of 2 feet for the distance between the plants, and of 3 feet for that separating the rows. Fifteen days after the weeding-out process the soil between the rows is lightly turned by a second plowing. Sometimes the leaves are ripe for harvesting fifty days later, occasionally they require four months to reach maturity, which is indicated by a change in their appearance to a yellow parchment color. They are then cut by the coolie

and hung in bunches of ten in the sheds, where they are inspected by the European planter and accepted at values ranging from $8 to $10 per thousand, according to quality. The coolie then leaves them to dry during twenty-five days, after which he gathers them in bundles into rattan baskets, wherein they are allowed to remain and ferment until the end of the season in October. The laborers then assemble and sort the leaves, according to length and color, during the next three months. The accounts are then settled and they are free to make another engagement or to seek work elsewhere.

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GRADING.

In January the most expert Chinese are employed to assort the bundles into grades according to length: First grade, length of leaf above 38 centimeters; second grade, between 38 and 30 centimeters; third grade, between 30 and 22 centimeters; fourth grade, below 22 centimeters. Others class the leaves according to appearance: First, leaves not mildewed or torn — (*a*) brown, very dark, like Havana tobacco, and marked "D D," dark; (*b*) brown, dark-red, like Havana tobacco, marked "D," brownish; (*c*) brown, dark-red, like Manila tobacco, marked "B"; (*d*) greenish, good but lacking maturity, marked "V"; (*e*) pale color, like light Manila, for Germany, marked "L." Second, leaves slightly mildewed but not torn, marked "S"; this variety is also classed as above, has a good sale, and by many is preferred to the other brands. Third, leaves much mildewed but not torn, marked "S S"; this is classed usually as dark and light. Fourth, leaves heavy, thick, and not torn, classed as light and colored, marked "G." Fifth, leaves damaged by fermentation or other cause, classed proportionately to their quality, marked "K." Sixth, leaves torn and damaged by mildew and other causes.

VARIETIES.

Deli tobacco differs essentially from the plant cultivated by the Battaks, as the latter has large leaves clasping the stalk, while the former has from 3 to 4 inches of the stem uncovered. The Deli variety presents two well-defined kinds, one with leaves elongated and very pointed, and the other having the leaf rounded, heart-shape, and much larger. The latter is usually preferred, because the leaves grow straight and do not tear so easily when handled, whilst the former has drooping leaves with thicker edges. As this is a difference due to selection, traders have not as yet made any great distinction between the two kinds. The best tobacco is grown on argilaceous soils and those with an abundance of silex, the plants being well developed with fine, silky, supple, oily leaves, coloring by fermentation to a rich brown, similar to the noted Cuba product, which recommends this brand especially to the American market. German purchasers, on the contrary, prefer the light-colored numbers from the plant, grown on sandy soils usually, which has foliage crisp, dry, and rough to the touch. It seems that the demand for the darker shades is falling off, however, though confessedly much better, and word has been sent to planters this season to prepare only the lighter colors for the Holland markets.

PACKING.

The packing and transportation of the tobacco takes place from January to June. Each bale of 175 pounds bears, in addition to the plantation mark, the letter indicating the color. The mats used in baling come from Borneo and cost from $6 to $20, according to size. Cordage is imported from China at an expense of from $8 to $10 per 100 kilograms. The press for baling is sent from Sourabaya or by manufacturers in Holland, Belgium, and France, the price ranging from $600 to $800. The type is either screw or hydraulic, though each has its disadvantages. The former is simple in construction, speedily repaired, not easily disarranged, and requires from thirty to forty coolies only to work it. The latter, it is true, requires fewer men; but, when out of order, repairs can be effected only by machinists at Singapore, or by railway employés, whose services in this respect are due to the courtesy of the Director of Railroads.

METHOD OF TRANSPORTATION.

For transporting the crop for shipment upon the small steamers plying between the shallow Sumatra harbors and the ports of Penang and Singapore, where the cargoes are transferred to large vessels bound for Europe, wagons are in general use at an hourly expense of 50 cents, though ox-teams may be obtained for $1 for a trip of about 4 miles with a load of from 400 to 500 kilograms. Other means of transport are furnished by the rivers, when navigable, and also by narrow-gauge railways, which are now in daily service over a distance of 35 miles and is being extended for an additional distance of 18 miles. There is, also, upon level and favorable ground, a short line of portable railway connecting the several plantations in the vicinity of it.

ANNUAL EXPENSE OF A CROP.

The annual expenses of such a crop upon the plantation before mentioned of 1,000 *bonnes* would be as follows:

Annual expenses:	
Salary of director, from $120 to $500 a month, say $150	$1,800.00
Traveling expenses, per year	200.00
Medical attendance	800.00
Salaries of two sub-directors, from $80 to $120 per month, say $100	2,400.00
Chinese foremen at $20 and two overseers at $10	960.00
Javanese overseers	300.00
Three watchmen, messengers, and carriers	360.00
Accountants	120.00
Workmen to keep houses and grounds in order, at $6	216.00
Rental to Sultan, say	500.00
Government tax of 2 per cent. on the above wages, land tax and patent-right paid to authorities, say	300.00
Total	7,956.00

Expenses proportional to the crop:	
Coolies receive advances semi-monthly on account; if there is a good crop, there will be a balance in their favor, but if, on the contrary, it is bad, many of them fall into debt. Suppose each coolie has planted on an average about 1,300 plants, and, with the second growth, has cut in all about 1,800 bunches of tobacco; suppose, also, that he has received for the whole, at $50 per 1,000 bunches, the total expense would be for 200 coolies, say.....	$19,800.00
Preparation of tobacco for process of fermentation proportional to the number of piculs of 132 pounds each, 1,800 piculs of 2,000 bunches each (in elevated districts as many as 3,000 bunches).....	1,000.00
Removal of bundles of leaves from drying sheds in baskets at $1 per 1,000 or 25 cents per picul.....	450.00
Assortment by colors at $3 per 1,000 bundles.....	1,350.00
Assortment of bundles by colors and lengths at above rates.....	350.00
Large mats for covering tobacco and smaller sizes for bales, 5,000 at 10 cents..	100.00
Freight to steamer.....	100.00
Export duty, 1 guilder per bale.....	700.00
Services of agents who receive the bales.....	250.00
Commisson to Chinese overseers of $1 per bale, say.....	1,200.00
Total.....	25,000.00

The total expenses, then, of purchasing and establishing a plantation with outfit and labor, and of raising and preparing a crop of tobacco for the market, upon a concession of 1,000 *bonnes*, may be briefly stated as follows:

Preliminary expenses.....	$26,930.00
Yearly expenses.....	7,956.00
Proportional expenses.....	25,700.00
Total.....	60,586.00

This amount may be reduced at the end of the year by mortgages. The concession for seventy-five years may be mortgaged for ten years, say $400; drainage works for same period, say $450; roadway, on value of $600, say $300; planter's dwelling, on value of $300, for three years, $200; fermentation sheds, on value of $600, for three years, say $400; other buildings, at aggregate value of $9,170, for two years, say $4,585; presses for baling, on value of $800, for ten years, say $820; scales, wagons, cattle, horses, harness, at aggregate value of $1,160, for four years on an average, say $870; the frames for suspending tobacco, on a value of $1,400, for three years, say $933; total, $13,958.

WHERE THE GREATER QUANTITY IS SOLD.

The chief sale of the crop, which is shipped to Holland entire, takes place at Amsterdam, though minor transactions also occur at Rotterdam, London, and Bremen. While the bales are yet in the sheds the Holland agent takes out a fire and marine insurance upon them, as upon shipment thereof he becomes responsible. He pays all expenses of transport to Europe and those necessary until the date of the sale of the produce. This is usually effected by means of sealed bids. After deducting expenses incurred and his commission the agent remits the balance to the planter. Very frequently, how-

ever, it happens that the latter is heavily in debt for advances made by the agent at the beginning of the season upon an estimated value of the future crop, which has not been realized. Again, new planters generally receive sufficient loans from Holland to install themselves, and are, therefore, bound by contract to send the entire crop to their creditors until the indebtedness is cancelled.

Charges for freight, brokerage, fire and marine insurance, consume from 8 to 10 per cent. only of the gross receipts, so that a planter working with his own capital, in view of the aids mentioned above, is enabled to realize a handsome profit in a good season. If he sells his tobacco at 1.25 guilders per pound, 1,200 bales of 160 pounds each, at 1.25 guilders, would bring 240,000 guilders, from which there must be deducted an average cost for charges of say 12 per cent., or 28,800 guilders, leaving a balance of 211,200 guilders, or $105,600 (Mexican currency, which has been quoted throughout this report at a valuation of 2 guilders per dollar). Deducting therefrom $46,627 for current expenses, there remains as net profit $58,973. If the planter is proprietor and director, few deductions are necessary from this sum. But usually, however, the capital is furnished by a bank or company, the land is provided by an old planter, and a third person takes charge of the administration of the estate, for a remuneration of 10 per cent of the profits. Frequently there is an assistant director, who has a share, too, varying from 2 to 5 per cent., while 5 per cent. is awarded to an inspector and another 5 per cent. to the accountant who superintends the execution of the contract. The crop of 1886 yielded the heaviest returns.

PROFITS OF A PLANTATION.

One of the plantations of the Deli Company, worked by 400 coolies, made a net profit for its shareholders of $294,340 on an outlay of $100,000; but all estates are, of course, not equally as prosperous as this. In 1887 the harvest was about 140,000 bales, though a portion of the crop was not shipped until the following year. In 1886 the price per pound of tobacco was 1.54 guilders, and the crop of 138,255 bales brought 32,250,000 guilders. The present condition of the industry, therefore, may be seen from the following table:

	Number of plantations.	Number of bales of 176 pounds.	Price per pound.	Value.
			Guilders.	*Guilders.*
Deli	47	84,624	1.575	20,300,000
Langkat	25	29,978	1.6375	7,390,000
Sudang	20	15,848	1.295	3,200,000
Bedaqueh	6	3,489	1.47	800,000
Padang	3	1,704	1.13	293,000
Pasarouar	1	327	.80	40,000
Baelo Bara	5	1,910	.99	284,000
Bila	2	233	.645	23,000
Assahan	1	142	1.10	20,000

In brief, then, it may be stated, as regards this culture in Netherlands India, that some twelve or fifteen years ago the cultivation had grown to be of considerable importance in eastern Java, but, as the quantity proved undesirable and the prices were unremunerative, only a few of the district planters surmounted these difficulties, which threatened at one time the extinction of the industry so far as Europeans were concerned.

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At the present moment, indeed, no tobacco is grown in the Sourabaya residency; but in that of Besouki the product has, according to all accounts, increased of late, the business being conducted by the planters chiefly on their own account. This is the only spot in Java, too, where the leaf is grown with a view to shipment to Europe, though the quantity thus prepared, as may be seen from the export tables, is very small.

As regards the plant itself, it may be added that, whereas formerly the seed from the Manila varieties was exclusively used in the Besouki district for this trade, now that from the Deli lands has taken its place. The seed for planting in the latter district is obtained from the native plant, and foreign kinds have never been imported for trial.

At the time when the industry in Java was passing through the crisis attention was directed to the Deli district, and a stock company was formed in Amsterdam in 1870 to make an essay with the plant in Sumatra, as the quality of the tobacco then produced there in small quantities was excellent, and other circumstances also augured well for the new enterprise.

The crop of 1873 of 40,000 bales, and that of 60,000 in the year following, proved the wisdom of this course, though a definite impulse was not observable until 1882. Since that time, however, tobacco cultivation has spread with surprising rapidity over the eastern coast lands of Sumatra, and has even invaded South Borneo recently.

TOBACCO EXPORTS.

The results of this industry for 1887 are thus stated officially:

Whence exported.	1885.	1886.	1887.
Tobacco unprepared.	*Kilograms.*	*Kilograms.*	*Kilograms.*
Holland	10,468,092	9,607,292	10,065,898
Other countries	3,831	2,909	25,375
Total	10,471,923	9,610,201	10,091,273
Tobacco prepared for native markets.			
Holland	1,817	3,507	10,997
Singapore	267,968	497,408	895,619
Other countries	334	372	335
Total	270,119	501,287	906,951

HORATIO G. WOOD,
Vice and Deputy Consul.

UNITED STATES CONSULATE,
Batavia, Java, December 17, 1888.

CENSUS OF HONDURAS.

REPORT OF CONSUL HERRING, OF TEGUCIGALPA.

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LIVE STOCK.

The last census of the live stock of Honduras was taken in 1881 and shows as follows:

Cattle, horses, mules, donkeys, goats, sheep, and hogs, according to the census of 1881.

Departments.	Cattle—average price, $9.50.		Horses, mules, donkeys—average price, $22.60.		Goats and sheep—average price, $1.	
	Number of head.	Value.	Number of heads.	Value.	Number of heads.	Value.
Tegucigalpa	57,247	$543,846.50	15,665	$354,029.00	2,946	$2,946.00
Choluteca	76,118	723,121.00	9,475	214,135.00	2,085	2,085.00
Gracias	61,015	579,642.50	16,658	376,470.80	792	792.00
Copan	47,870	454,765.00	10,684	241,458.40	2,144	2,144.00
Santa Barbara	44,427	422,056.50	9,180	207,468.00	1,357	1,357.00
Olancho	112,966	1,073,177.00	25,790	582,854.00	7,016	7,016.00
La Paz	28,559	271,310.00	7,149	161,567.40	630	630.00
Comayagua	52,260	496,470.00	10,796	243,989.60	2,336	2,336.00
El Paraiso	30,306	287,907.00	14,902	336,785.20	1,416	1,416.00
Yoro	30,220	287,090.00	5,590	126,334.00	2,756	2,756.00
Colon	2,692	25,574.00	304	6,870.40	240	240.00
Total	543,680	5,164,960.00	126,193	2,851,961.80	23,718	23,718.00

Departments.	Hogs—average price, $2.		Total.		Inhabitants of each department.	For each hundred inhabitants.			
	Number of head.	Value.	Number of heads.	Value.		Cattle.	Horses, mules, donkeys	Goats and sheep.	Hogs.
Tegucigalpa	4,462	$8,924	80,320	$909,745.50	59,015	97.01	26.54	4.99	7.56
Choluteca	5,329	10,658	93,007	949,999.00	42,781	177.92	22.15	4.87	12.46
Gracias	7,014	14,028	85,479	970,933.30	42,630	143.12	39.08	1.86	16.45
Copan	9,328	18,656	70,026	717,023.40	32,151	148.89	33.23	6.67	29.01
Santa Barbara	15,201	30,402	70,165	661,283.50	29,474	150.73	31.15	4.60	51.57
Olancho	7,142	14,284	152,914	1,677,331.00	28,150	401.30	91.62	24.92	25.37
La Paz	3,961	7,922	40,299	441,429.90	19,829	144.03	36.05	3.17	19.98
Comayagua	3,330	6,660	68,722	749,455.60	16,311	320.39	66.19	14.32	20.42
El Paraiso	1,512	3,024	48,136	629,132.20	16,075	188.52	92.70	8.81	0.41
Yoro	4,450	8,900	43,016	425,080.00	11,574	261.10	48.30	23.81	38.45
Colón	420	840	3,656	33,524.40	6,465	41.64	4.70	3.71	6.50
Total	62,149	124,298	755,740	8,164,937.80	307,289	176.92	41.06	7.71	20.22

Well-informed men claim that this does not represent more than about one-half of the number of live stock. And it is quite likely that we may safely double it, when we consider that so far back as 1881 the people were in continual dread of being called upon to contribute in proportion to their visible means for the support of the Government in times of revolutionary trouble. Goats and sheep are thrown together under one head in the above table—and even then they make but a small number. And the fact is that a very few of this small number are sheep. Goats are more profitable and

less trouble, because they are less subject to disease, less liable to ravages of dogs and wild beasts, and can get about better over mountains and through brambles, and their milk, flesh, and skin are more valuable, and there is no market or factory here for wool. But, withal, there is no reason why sheep farming may not be made richly remunerative in Honduras.

The small number of hogs is also noticeable. The reason more are not raised is because there is no meat canning factory here, and because none is ever converted into bacon, and beef is considered far more healthy in this climate. Yet hog raising is profitable. While beef sells for but 6¼ cents per pound, fresh pork sells for 12½ cents, and lard for 25 cents per pound. Bacon and sugar-cured hams are imported from the United States, and are eaten principally by Americans, and sell in Tegucigalpa for 75 cents a pound.

MEAT PRODUCT.

Apropos of the meat product of Honduras I quote as follows from the Honduras Progress, of April 12, 1888:

Our Government has offered large inducements, and has, in fact, recently completed two contracts, one with a New York company, and one with a Chicago company, to open up on our north coast near Caratasca, two huge enterprises for the development of our stock-growing resources. Honduras has allied herself with Australia, New Zealand, and the Argentine Republic as a most promising field for the exercise of the best energies of those who would supply the markets of the world with meat or live stock. Indeed, Honduras has largely the advantage over either. Her pasturage is unquestionably as good. Her climate, if not superior, is, to say the least, as favorable, while her nearness to the desired markets gives her a most decided advantage. Pork, mutton, and dressed beef, or live stock, can be shipped to points in Europe from Honduras with as little difficulty as from Texas, or even from New York. It is already demonstrated that dressed beef and mutton can be shipped, and in fact are profitably shipped in a frozen state to Great Britain from Rio de la Plata, and even from points much further southward. It is evident that Honduras, by her advantage of closer proximity to the great northern and eastern markets, can engage in the business at a still greater profit. * * * Hence we look forward to the establishment of a rich, continuous, and permanent business of stock growing for our people. A business that is sure to last until our rich lands become too valuable even for stock growing, when it will be followed by a naturally succeeding and more profitable diversity of pursuits. In the meantime our cattle that now require four years to mature will be superseded by an improved breed that will be larger and more ready for the market in one-half that time.

We have millions of acres of magnifient prairies and rich, rolling grazing lands, well watered, and with climatic and other natural conditions unsurpassed in the world.

POPULATION, ETC.

The last census was in June, 1887, but it was only of people and not of property, and has been but recently published. It shows a population of 331,917, an increase of 24,628 over the population of 1881. They are summarized for the whole Republic most briefly as follows: There are 128,938 men, 134,107 women ladinos (mixed or foreign descent), 34,137 men, and 34,735 women indigenas (Indian descent), making 5,767 more women than men — 5,169 more females than males of the ladinos, and 598 more females than males of the indigenas.

Less than one year old there are 10,784; from 1 to 7 years old, 67,315; from 7 to 16, 74,322; from 16 to 21, 34,209; from 21 to 39, 47,769; from 40 to 50, 28,165; from 50 to 60, 15,640; from 60 to 70, 8,742; from 70 to 80, 2,991; from 80 to 90, 886; from 90 to 100, 232; and over 100 years, 80. There are, unmarried, 244,154; married, 69,260; widows and widowers, 18,503.

There are 325,750 Hondurans, 2,000 Salvadorans, 2,060 Guatemaltans, 610 Nicaraguans, 14 Costaricans, 15 Columbians, 29 Mexicans, 185 North Americans, 77 Spaniards, 72 Frenchmen, 1,033 Englishmen, 43 Germans, 4 Russians, 2 Swiss, 13 Italians, 4 Belgians, 2 Danes, 1 Hollander, 1 Portuguese, 1 Brazilian, and 1 Chinaman. The North Americans are nearly all white people, and are, perhaps, now at least three times as many as the census represents, while those put down as Englishmen are nearly all Belize or Jamaica negroes.

There are 329,079 Catholics, 777 Protestants, 3 free-thinkers, 17 rationalists, 388 without religion, 2 deists, 9 natural religionists, 2 spiritualists, 1 Buddhist, 2 Freemasons, 1 Lutheran, 1,543 Methodists, 2 Anabaptists, and 91 Baptists. Know how to read, 38,583; to read and write, 19,042; and without instruction, 274,292.

There are 308 mutes, 224 deaf mutes, 398 deaf, 79 insane, 591 idiots, 454 blind, 564 one-eyed, 982 cripples, 501 deformed, 113 mutilated, 48 ruptured, 391 paralytic, 48 elephantiasis, 55 epileptics, 8 hunchbacks, 61 syphilitics, and 75 goitres.

There are 28,350 electors, 17,706 electors eligible to office, and 1,425 Government employés.

There are 105 lawyers, 14 surveyors, 3,985 agriculturists, 541 bricklayers, 17 pack-saddle makers or wood sawyers, 968 potters, 146 muleteers, 4,836 clothes ironers, 4 indigo planters, 474 lace-makers, 20 barbers, 102 cattle raisers, 32 hog raisers, 117 peddlers, 414 messengers, 1,859 carpenters, 210 fireworks makers, 20 chocolate-makers, 16,561 sewing girls, 3,761 cigarette-makers, 1,162 cooks (females), 73 tanners, 1,139 merchants, 2 bell-makers, 87 midwives, 25 singers, 14 hunters, 90 clerks, 2 dentists, 31 confectioners, 13 distillers, 27 sculptors, 4 book-binders, 68 ecclesiastics, 693 students, 4 secretaries, 15 druggists, 179 florists, 14 smelters, 3 makers of candles, 6 makers of "chilios" (Chili), 5 of coal, 59 of lime, 11 makers of hammocks, 240 makers of ropes, 90 makers of soap, 16 makers of bricks, 583 makers of straw mats, 427 makers of tiles, 25 weavers, 86 basket-makers, 2 photographers, 453 herders, 17 tinners, 1,611 thread-makers, 562 blacksmiths, 3 hotel keepers, 47 india-rubber hunters, 3 interpreters, 40 printers, 16 engineers, 23,253 day laborers, 30,369 laborers, 89 gold washers, 9,227 washerwomen, 1 lapidary, 3 mechanics, 80 physicians, 1 Protestant minister, 512 miners, 1 Methodist minister, 534 soldiers, 1 Baptist minister, 367 sailors, 33 dress-makers, 92 overseers, 565 musicians, 39 nurses, 4 notaries, 3,104 bakers, 81 grocers, 23 silversmiths, 1 cigar manufacturer, 410 teachers, 9 pianists, 1 language teacher, 8 robe-makers, 9 attorneys, 43 fishermen, 2

chemists, 4 watch-makers, 2,136 tailors, 2,854 servants, 2,094 hat-makers, 14 salt-makers, 181 saddle-makers, 8 dyers, 135 telegraph operators, 14 book-keepers, 7,371 "tortilleras"-makers, 1,320 shoe-makers.

D. W. HERRING,

UNITED STATES CONSULATE, *Consul.*

Tegucigalpa, February 12, 1889.

THE WINE HARVEST OF FRANCE FOR 1888.

REPORT OF CONSUL ROOSEVELT, OF BORDEAUX.

In the abundant and unexpected yield of 1888 the viticulturists of France, especially those of the southwestern section, have much to encourage them in their patient and incessant fight against the many plagues which have until now seemed invincible. Much of the good result of the last vintage is due to American vines. A great deal is also due to climatic influence. The weather was most favorable to the vines from budding to maturity. Abundant rains in the early summer, followed by weeks of unusually cool weather that gradually changed into warm days full of generous sunshine, contributed greatly to a perfect development of the grape, and permitted the effecting of the vintage in most excellent condition. In sections less warm than the Midi the continued rains of the early summer interfered in the development of the grape, prevented maturity, compromised the harvest, and retarded the vintage until early frost set in.

The vine-growers of France apparently have an interminable army of plagues to vanquish. No sooner is one evil destroyed than another springs up in its place. The mildew that for many years has aided in the work of devastation in this section is at last almost eradicated by the use of sulphate of copper. Alarm is now felt regarding the black rot, which was noticed in 1887 in the Herault, and which has recently appeared in other departments of the Midi, notably in the Lot, Vaucluse, and Drôme. According to official information the vintage of 1888 amounts to 30,102,151 hectoliters, or about 797,707,801 gallons, an increase of 5,768,867 hectoliters (151,874,975 gallons), on the yield of 1887, and about 1,690,849 hectoliters less than the average yield of the last ten years, which was 31,793,000 hectoliters, as will be seen by the following table:

	Hectoliters.		Hectoliters.
1878	48,729,000	1883	36,029,000
1879	25,770,000	1884	34,781,000
1880	29,667,000	1885	28,536,000
1881	34,139,000	1886	25,063,000
1882	30,886,000	1887	24,333,284

The increase in the yield of 1888 was not general throughout the wine-producing departments of France, but was confined to thirty-seven, among which as giving the most abundant harvests may be mentioned the departments of Aude, Ariége, Gard, Haute-Garonne, Gers, Gironde, Herault, Landes, Loir-et-Cher, Loire-Supérieure, Basses-Pyrénées, Pyrénées-Orientals and Saône-et-Loire.

In forty departments the yield was inferior to that of 1887. In the Aveyron, Ain, Maine-et-Loire, Marne, Meurthe-et-Moselle, Niévre, Hauté-Savoie, Tarn, Vendeé, Viénne, and Yonne the harvest was particularly bad. The yield in the department of the Gironde for the year 1888 was 3,000,000 hectoliters, or more than double that of 1887, which was only 1,139,367. The following is a tabulated statement of the yield in this department since 1876:

	Hectoliters.		Hectoliters.
1876	1,961,045	1882	1,114,000
1877	3,511,094	1883	1,867,559
1878	2,210,114	1884	1,338,183
1879	1,567,506	1885	1,076,056
1880	1,660,235	1886	1,108,685
1881	1,276,000	1887	1,139,367

IMPORTATION OF FOREIGN WINES.

There are still large importations of foreign wines into France to supply the deficit in the home yield, and during the first eleven months of 1888 10,135,305 hectoliters were imported from the following countries:

	Hectoliters.		Hectoliters.
Spain	7,008,000	Portugal	1,006,000
Italy	1,032,305	Algiers	1,089,000

WINES FROM DREGS AND DRIED GRAPES.

The deficit in the production is also increased, as in preceding years, by the manufacture of wine from marcs and dried grapes. The result of these fabrications amounts to 4,608,198 hectoliters, of which 2,387,713 were from marcs and 2,220,485 from dried grapes.

AMERICAN VINES.

The vineyards of the Midi were the first to suffer from the invasion of phylloxera, and the viticulturists of that section were the first to employ American vines to combat its ravages, the value of which was most emphatically demonstrated in the last harvest. In many localities entire vineyards have been replanted in these vines, upon which French vines have been grafted. The greater part of these vines were in full bearing in 1888, and not only excited the admiration of all, but an eager desire in proprietors who, up to this time, had rejected American vines as a means of saving their vineyards. The demand for American vines was greater than the supply, and nurseries were very soon exhausted. At present nurserymen are busy grafting slips, so that next year the supply will equal the demand, and it is not too much to say that in the near future the famous vineyards of the Midi will again produce as generously as in most favored years.

Although the wines of 1888 exhibit good qualities sugaring has been necessary to improve both the quality and quantity but in less quantity than was used for the same purpose in 1888 for the 1887 wines.

GEO. W. ROOSEVELT,

UNITED STATES CONSULATE, *Consul.*

Bordeaux, January 10, 1889.

TRADE AND COMMERCE OF CHILI.

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REPORT OF CONSUL ROMEYN, OF VALPARAISO.

At the beginning of the current year trade generally was unfavorably affected by the cholera epidemic then raging in various parts of the country, and subsequently the severe winter had a depressing effect on business. Copper and nitrate of soda, however, and especially the latter mineral, have proved the main-stays of the country during the temporary crisis which affected it during rather more than the first half of the year. During the last four months trade has been in a comparatively prosperous condition, and if the great staples—copper and nitrate—should continue to maintain their present values, the actual boom, which is only just beginning, will be without precedent in the history of the country.

COPPER.

It was apprehended in the first quarter of the year that the production of copper would show a large falling off, but it is now believed that the output will compare favorably with that of last year. Although a near heavy fall in Chilian bars is not anticipated, it is generally believed that a gradual decline will take place. Sooner or later the value of these bars will be regulated by that of the "best selected," which is the standard in Europe. So far, since the formation of the French syndicate, the price of Chilian bars in this market has been governed by the Liverpool quotations at three months.

Although Chili is no longer at the head of the list of copper-producing countries, she is still, and will probably continue to be for a long period, an important factor in the world's production. The copper region extends almost from the suburbs of Valparaiso to Iquique, and although many once-famous mines are exhausted, or nearly so, nobody doubts that in such an extensive field as that represented by the copper area of Chili many new and important discoveries must eventually be made. The great drawback to the development of the copper industry in Chili is the distance from the consuming markets, and, above all, the cost of transportation from the mines to the coast, which, in the majority of cases, greatly exceeds the cost of freight to Europe. In order to modify the latter difficulty important steps are about to be taken. A short time ago the Government bought a mineral line known as the Chinsaral Railway, and it is now proposed to purchase, at a fair valuation, the remainder of the mineral lines, the object being to reduce the rates of freight to a minimum that will suffice to cover the working expenses. In addition to this between 200 and 300 kilometers (125 and 187 miles) of new lines are projected through extensive and only partially developed mineral districts, in which copper is found in abundance.

The exports of bar copper in the eight months ending September 30 of this year amounted to 23,112,108 kilograms (about 50,245,720 pounds) of the declared value of $10,290,547, as compared with 19,296,974 kilograms of the value of $4,538,889 in the corresponding period of 1887.

The exports of mineral products in 1887 were as follows:

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Articles.	Quantity.	Value.
Bar copper.....kilograms...	26,733,110	$6,993,137
Copper regulus.....do.....	3,988,465	476,615
Copper ore.....do.....	621,554	31,079
Copper and silver regulus.....do.....	1,999,406	499,851
Copper and silver ore.....do.....	261,483	26,148
Bar silver.....grammes...	193,736,959	8,291,920
Silver ore.....kilograms...	215,398	22,955
Nitrate of soda.....do.....	712,767,767	28,690,970
Manganese peroxide.....do.....	47,504,404	.....
Borax.....do.....	3,053,800	457,980
Coal.....tons...	153,000	919,530
Total.....	.....	46,887,429

GENERAL IMPORTS AND IMPORTS FROM THE UNITED STATES.

The total value of the imports in 1887 was $48,630,862, as compared with $44,170,147 in 1886. Of the former sum Great Britain contributed $20,463,584; Germany, $11,631,891; France, $5,500,949; and the United States, $3,242,314.

The imports from the United States in 1887 show an improvement of $619,142 on 1886. The United States contributed 23.6 per cent. to the increase in imports in 1887 over 1886 in the following articles:

Articles.	1886.	1887.
Lamp oil.....	$47,899	$108,501
Iron nails.....	60,632	108,330
Flannels.....	136,362	155,404
Paraffine.....	424,400	545,734
Sacking, hemp.....	92,250	141,834
Sacking, cotton.....	101,683	125,764
Lumber.....	361,555	533,591
Wood-work.....	66,584	128,559

The following statistics are interesting as showing a steady improvement in trade in 1887:

	1886.	1887.	Increase in 1887.
Imports.....	$47,790,386	$57,760,780	$9,970,394
Exports.....	52,436,073	62,713,497	10,277,424
Coasting trade.....	152,745,504	167,430,410	14,684,906
Custom-house revenue.....	23,416,346	29,888,525	6,472,179
	Tons.	*Tons.*	*Tons.*
Shipping entries.....	7,108,978	7,233,791	124,813
Shipping cleared.....	7,206,959	6,281,315	74,356

The following tabulated statement is intended to bring home to our merchants and manufacturers the smallness of the amount contributed by the United States in many articles imported by Chili:

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Articles.	Total value.	From the United States.
Refined sugar	$2,949,216	$61,188
Rice	460,088	681
Plows	24,306	11,993
Turpentine	53,544	40,042
Blacking	24,973	2,709
Pitch	34,401	1,941
Iron safes	9,544	180
Carriages	17,417	3,371
Beer	83,135	1,500
Nails	266,793	108,330
Cooking ranges	29,287	8,018
Cotton ticking	120,746	3,435
Glass-ware	196,436	4,599
Cutlery	33,488	1,124
Cotton drills	190,013	1,454
Drugs	556,811	19,719
Shoe pegs	11,740	2,519
Lucifer matches	224,174	20
Flannels	270,521	155,404
Paraffine	581,755	545,734
Carpenters' tools	75,175	12,090
Common soap	8,490	2,646
Rope	60,057	14,207
White shirtings	1,923,340	33,083
Trouserings	1,067,284	40,532
Cotton bagging	385,506	141,834
Canvas	36,499	4,712
Railway materials	1,095,057	98,391
Telegraph materials	30,683	2,781
Agricultural machinery	33,772	16,632
Sewing-machines	128,742	7,780
Machinery	469,069	45,115
Hardware	1,431,635	94,232
Furniture	134,213	27,571
Wick	34,836	2,296
Writing-paper	60,023	3,533
Printing-paper, superior	38,041	2,083
Printing-paper, ordinary	191,739	.....
Prints	2,268,903	16,123
Bags	1,188,758	14,308
Chairs	96,430	27,131
Calicoes	978,211	119,729

GENERAL EXPORTS.

The following figures relating to exports will furnish an idea of the mineral and agricultural wealth of Chili:

Exports.	Quantity.	Value.
Bar copper, 1884–1887 ..... kilograms...	904,914,170	$302,876,540
Copper regulus, 1884–1887 ..... do.....	688,522,207	99,666,009
Copper ore, 1884–1887 ..... do.....	585,126,382	35,218,581
Copper and silver regulus, 1859–1887 ..... do.....	75,408,244	21,800,076
Copper and silver ore, 1850–1887 ..... do.....	10,074,361	1,353,206
Bar silver, 1884–1887 ..... grammes...	2,712,188,303	115,286,621
Silver ore, 1884–1887 ..... kilograms...	91,062,656	16,203,636
Nitrate of soda, 1878–1887 ..... do.....	3,873,291,633	197,585,248
Iodine, 1880–1887 ..... do.....	1,496,699	18,420,007
Wheat, 1844–1887 ..... do.....	2,621,357,524	121,719,820
Flour, 1844–1887 ..... do.....	824,503,898	61,924,256

CLASSIFICATION OF IMPORTS AND EXPORTS.

Imports.—In the following tabulated statement the classifications and values of the imports as compared with 1886 are shown:

Classification.	Value in 1886.	Value in 1887.
Alimentary	$12,309,492	$10,184,510
Textile	9,678,205	11,469,282
Raw materials	4,886,163	6,221,190
Clothing, jewelry, and articles of personal use	2,429,273	2,569,394
Machines, machinery, tools, etc	4,246,306	5,648,557
Furniture and household goods	2,871,176	3,304,323
Railway and telegraph materials	850,789	1,443,827
Wines and liquors	915,827	1,079,905
Snuff, Tobacco, etc	413,009	447,534
Precious metals and bullion	110,336	10,279
Articles connected with fine arts	693,384	616,746
Drugs, medicines, etc	615,398	686,446
Arms and their accessories	59,864	72,879
Miscellaneous	3,877,925	4,777,136
Specie and bank-notes	213,000	98,854
Total	44,170,147	48,630,862

Exports.—The following tabulated statement gives the classification and values of the exports in 1886 and 1887:

Classification.	Value in 1886.	Value in 1887.
Mining products	$40,264,340	$49,449,015
Agricultural products	9,720,747	9,369,247
Manufactures	66,521	46,081
Miscellaneous	107,391	46,655
Re-exportation	446,734	321,475
Specie	644,416	317,485
Total	51,240,149	59,549,958

SHIPPING.

The following shipping statistics show the relative position of the United States flag to the total tonnage entered and cleared at Chilian ports in 1887:

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Vessels.	All flags.		United States flag.	
Foreign—	*No.*	*Tons.*	*No.*	*Tons.*
Sailing vessels entered	753	557,136	33	27,440
Sailing vessels cleared	678	581,603	23	19,848
Steamers entered	649	987,844	1	1,712
Steamers cleared	761	1,100,049	3	4,169
Coasting—				
Sailing vessels entered	1,784	908,939	80	46,760
Sailing vessels cleared	1,769	873,595	78	36,060
Steamers entered	4,469	4,425,673	2	2,401
Steamers cleared	4,254	4,287,613	1	826

AMERICAN RAILWAY BUILDERS IN CHILI.

The most interesting feature I have to report on this occasion in connection with United States affairs here is the letting of a Government contract for the construction of about 1,000 kilometers of railway to an American syndicate. The contract price is about £3,500,000, but, unfortunately, the agreement has been seriously affected by a sudden and unexpected advance in the price of exchange on London. When the contract was signed exchange fluctuated between 25*d.* and 26*d.*, but since then it has touched 30*d.*, and is now fluctuating between 28*d.* and 29*d.* It is estimated that an exchange of 30*d.* would cause a loss to the contractors of about $3,000,000, and negotiations on an exchange basis to provide against a contingency have been opened between the representatives of the syndicate and the Government. It is understood that the President of the Republic is desirous of making equitable concessions, and if this matter can be satisfactorily arranged, there will be nothing, after the stipulated security of $1,000,000 for the fulfillment of the contract is deposited in this country, to hinder the contractors from commencing operations at once. The rolling stock for the new lines is to be mostly of American pattern, and, therefore, the probabilities are that this class of materials will be mostly procured from the United States.

This fact and these circumstances would seem to invite the attention and enterprise of our unequaled car-builders.

JAMES W. ROMEYN,
Consul.

UNITED STATES CONSULATE,
Valparaiso, Chili, December 15, 1888.

FAMINE IN CHINA.

REPORT OF CONSUL-GENERAL KENNEDY, OF SHANGHAI.

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At the request of the Shanghai committee of the North China Relief Fund, I beg to acquaint the Department with the distress existing over a large area of China, the result of floods in the Yellow River sections, and of drought in portions of the provinces of Kiang-Su and Anhui.

In my No. 255, dated January 25, I referred to these calamities. It is the object of the committee of the Relief Fund to invite the charitable people of the world to respond to this demand for aid, and I trust it will be within the power of the Department to make known to our people the fact that thousands upon thousands are starving and perishing from exposure in northern China.

Relief has already been received from America and England, but more is wanted. Until the spring crops are gathered there will continue to be famine, and to insure the spring planting money must be forthcoming from outside, as in the famine districts there remains neither seed nor money to purchase it.

I inclose four papers sent me by the Shanghai committee:

(1) A letter written by Rev. John L. Nevius, D. D., an American missionary whose work lies within the famine districts, who describes the case as an eye-witness.

(2) A translation of an appeal by the Tao-t'ai of Shanghai and others.

(3) Extract from the North China Daily News (Shanghai), January 4, 1889.

(4) A list of the names of the gentlemen forming the Shanghai committee.

I suggested that it would be advisable for our missionaries in China to write their boards at home and suggest the taking up of a collection in all our churches to aid the suffering and destitute in China.

The Consuls were not asked to serve on the committee because the Chinese officials wished to avoid the appearance of having China ask through an official medium for aid.

J. D. KENNEDY,
Consul-General.

UNITED STATES CONSULATE,
Shanghai, February 15, 1889.

[Inclosure 1, in Consul-General Kennedy's report.]

FAMINE IN SHANTUNG — AN APPEAL FOR AID.

The reports of the floods in China, which have appeared in the public prints of the West, leave in the minds of readers but a vague impression of their exact locality, extent, and consequences. Most of these reports are taken from newspapers in China. While clearly understood by readers here, they presuppose a considerable amount of geographical knowledge not possessed by persons who have not resided in China. Indeed the phases of these misfortunes are so varied at present that they are only imperfectly comprehended, even by those who in different localities are eye-witnesses of them.

It is, however, generally known that the calamities which have recently excited so much sympathy the world over, are the result of an inundation of the erratic Whang-ho. In less than two thousand five hundred years this river has changed its course ten times, and in a comparatively recent period three or four times. In 131, A. D., there was a very great inundation, which it required twenty years to control.

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A few decades ago all the children in home lands were taught that the Whang-ho, the second of the large rivers of China, discharged its waters into the sea in the central part of the eastern coast, about 2 degrees north of the mouth of the Yang-tse-kiang. This was true at that time. About forty-five years ago the Yellow River broke its banks, left its bed, and, pursuing a northeasterly instead of an eastward direction, found its way to the sea, principally through the Ch'ing-ho, or "Clear River," and disembogued into the Pechili Bay, about 500 miles north of its old mouth. After the Yellow River had taken possession of the Ch'ing-ho, and rendered its waters turbid and yellow, the name of the Ch'ing-ho was changed to Whang-ho—"Yellow River." As the original channel of the Ch'ing-ho had not sufficient capacity to hold the additional waters of another river, it was subject in times of heavy rains to frequent overflows, inundating the whole adjacent country, destroying crops, carrying away villages, and almost depopulating large districts along its banks. It was evident that the silting up process in the original bed of the Ch'ing-ho from the muddy waters of the Whang-ho poured into it would every year increase the danger of overflow, and the probability of its seeking somewhere else a lower bed. All the energies of the central Chinese Government were exerted to prevent this, but a change of channel sooner or later was inevitable. This change occurred a little more than two years ago at a point in the Honan province, where the breach had previously more than once begun. The high artificial embankment shook and tumbled under the rush and pressure of the superincumbent flood. The alarmed officials in charge redoubled their efforts to avert the impending catastrophe, but in vain. The new opening was made, which, of course, rapidly enlarged, pouring forth a deluge of waters, which, trending southward, embogued in the Yang-tse River near Yhangchow. The distress and loss of life and property consequent on this new inundation could scarcely be overstated.

I can not here speak at length of the vast amount of treasure which has been spent by the Chinese Government, and from private contributions of natives and foreigners, in the region of this new inundation; nor of the prodigious but unavailing efforts of the Government to repair the new breach; nor of the opposition of the inhabitants along the banks of the Ch'ing-ho to having the waters of the Yellow River turned back again into that channel; nor of the gigantic problem which confronts the Chinese Government now, as it has for so many centuries, and confounds also foreign engineers, "What shall be done with the Yellow River?"

We have now to record another calamity, different in origin, character, and locality, of which, in consequence of its recent occurrence, and the fact that the public mind has been preoccupied with the inundations of the Yellow River, very little is as yet known. This calamity, which affects principally the province of Shantung, originated in an unequal distribution of rain-fall, producing in some places drought, in others flood. The rainy season, which is here the months of July and August, is owing to the condensation of the moisture suspended in the southern monsoon as it meets the colder atmosphere of the north. During the past summer the clouds, surcharged with moisture, passed over a large tract of country south of Shantung (including its southern border), which, being left without rain, is now suffering from drought and consequent famine. The rain-fall began in the southern central part of this province, and increased until it became in the central, and especially the northern part, a flood such as had not been experienced for nearly a century.

This great rain extended still farther north, across the Pechili Bay, and far into Manchuria. It did not, however, cover the whole of Shantung, the eastern part of which had only the average rain-fall, while the extreme western end had a scarcity of rain amounting to drought. The storm crossing the central part of the province from south to north covered a tract of

country between 100 and 200 miles wide. The streams rushing down valleys overflowed their banks, denuding fertile fields of their surface earth, tearing up trees by their roots, and in some places covering the ground with sand to the depth of a foot or more. Rain fell almost continuously for ten days, until on the 18th of August it could only be described as a deluge. All the streams burst their banks in many places, uniting their waters in a common flood, which covered the lower plains to the depth of from 2 to 10 feet, sweeping as one unbroken river to the sea.

Even the central portion of the province, between the extremes of drought and flood, has hardly enough grain to support its own population. From this comparatively favored territory scarcity increases towards the region of drought on the one side and floods on the other, until the extreme of want is found on the plain bordering on the Pechili Bay. The inhabitants of this region had lost most of their wheat crop by drought, but the sorghum, cotton, and millet promised well, and they were rejoicing in the prospect of plentiful harvest in the autumn. Their hopes were blighted. The water did not subside for days, and in some places for weeks, and all further growth and development was stopped. When, early in November last, in company with the Rev. J. H. Laughlin, of the Weihien mission, I visited this region, some portions of it were still too wet to plow for the autumn wheat crop, and other parts were covered with water. The heads of the millet and sorghum, which had been gathered, yielded only empty husks or chaff, or at the best a little shriveled, half-developed grain. This, however, was carefully preserved, and the people were planning to live on it through the winter, or as long as it lasted, mixing with it the leaves of the sweet potato, when they were so fortunate as to have them. The people living still nearer the sea were depending for sustenance principally on the seeds and leaves of a coarse grass or weed resembling the wild sage, which grows on the alkaline plains crossed by the Central Pacific Railroad. Purchasers can not be found for land, even at only a tenth of its usual value, and clothing brings but a trifle at the pawnshops. Unprincipled speculators have already gone in and are buying winter garments for a mere song, and soon the people will be left without food, clothing, or shelter.

The water covered the fields, reached the villages, entered the houses, and, rising to the height of two, and in some instances five or six, feet, dissolved the mud walls, and speedily caused the buildings to fall. In some of the towns near the large streams, the flood swept by in deep, strong currents, tearing down brick houses and carrying away timbers, furniture, farm utensils, and even large iron kettles and millstones. In the villages which have suffered least three or four tenths of the houses are destroyed, in some eight or nine tenths. About one-half of the inhabitants have started out from their homes to beg in the outlying districts, and these refugees comprise, as a rule, the bone and sinew of the country. They leave their scanty supply of provisions with the members of their families who are aged or infirm, hoping themselves to return in time to plant the spring crops. They usually take with them the farm wheelbarrow, which is loaded with bedding and clothing, a few dishes and cooking utensils, and the little children, the men drawing and balancing the barrows, and the women and larger children following behind. Perhaps as many as two thousand of the inhabitants are leaving their homes daily, and this stream of emigration has been flowing for nearly three months. The refugees are found in almost every village of the central part of the province, and they lead a life as comfortless and cheerless as can be imagined. Those fleeing from the drought region on the south meet those from the flooded region on the north, each party telling the other that it is useless to go farther. There are so many of them, and the supply of food in the most favored sections is so scanty, that it is difficult to support life by begging, and many return to their homes, disheartened and hopeless, to die.

When six weeks ago we examined into the condition of this famine-stricken people, we supposed that their small stores of food might last those who remained at home for at least a few months, but letters recently received inform us that the extremity of want has come sooner than we expected, and starvation is already staring the inhabitants in the face. In many families the supply of wild grass seed is exhausted, and the people now have no resource but to pluck and eat the fresh blades of wheat of the autumn planting. It is but too evident that this

food, unfitted to sustain life for any length of time, even if it were plentiful, must soon fail them. The spectacle which now presents itself is that of more than a million of people reduced to the last state of destitution, most of whom must perish of starvation before next summer unless relief is afforded.

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At a public meeting, held in Chefoo, a Shantung famine relief committee was appointed, and funds have been contributed by the residents here for immediate use. We hope to receive further aid from the southern ports of China, and also from England and the United States. Our plan is to occupy and confine ourselves to one or more centers in the famine region, and enlarge the work as the funds at our command may warrant, continuing the relief on the same plan, and, as a rule, to the same individuals until the next wheat harvest; when, if God in His mercy gives a fruitful season, the famine will end. The refugees, who will probably return to their homes in March or April, will require not only food for their sustenance, but seed-grain for putting in the spring crops. We do not propose to assist in rebuilding houses, or repairing the banks of streams, but simply to supply the food necessary to support life. A very small allowance of one or two cents a day for an individual will effect this. As yet, so far as we can learn, the inhabitants of this region have received no relief from the Chinese Government, or from private sources.

A little money given here and there in a promiscuous way would do but very little good, and when exhausted would leave the people just where they were before. Relief, to be really effective, must continue until next June, carrying a limited number quite through the season of want. The disbursement of funds in a famine-stricken country is a task both difficult and dangerous, but there are those on the ground who are competent and willing to undertake it. Mr. Laughlin has already gone into the famine region and commenced the work of distribution. We must look for further aid to the home lands. The help which we can get from foreigners in China will not last long. We appeal to you, who in God's merciful providence have never known want in behalf of those who, when this appeal reaches you, will for months have had no respite from the pangs of hunger, and will be on the very verge of starvation. Though we have refused our Mongolian neighbor a home on our shores, let us not refuse him a place in our sympathies, or turn away from him in this hour of his extremity.

Contributions may be sent to Rev F. F. Ellinwood, D. D., 53 Fifth Avenue, New York, which will be forwarded at once to the famine relief committee in Chefoo.

JOHN L. NEVIUS.

CHEFOO, *January 2, 1889.*

P. S.—While I write, news has come through a Chinaman who lives in the famine region that the people there have entered a complaint before the district magistrate against certain rich men who turned their cattle into the wheat fields to graze, as in ordinary seasons. They urged that under present circumstances the green wheat blades should be denied the cattle and reserved for men. The magistrate gave his verdict in favor of the people.

[Inclosure 2 in Consul-General Kennedy's report.—Translation.]

SHANGHAI, *27th December, 1888.*

SIR: At the present moment the districts of Fêng-yang, Ying-chou, and Ssŭ-chou, in Anhui, have been flooded by the waters of the Yellow River, and in the prefectures of Yang-chow, Chinkiang, Hsŭ-chow, Chiang-ning and Ch'ang-chow, in the province of Kiang-su, together with the country about Lŭ-chow and the hilly places below An-ching, in the province of Anhui, the drought has become disastrous for a distance of about 1,000 *li*. The inhabitants of the flooded districts, having left their homes and betaken themselves to the ditches and caves, give cause for great anxiety, whilst among those suffering from the drought, who have scarcely gathered in a single grain of their crops, the sound of lamentations is heart-rending and hard to hear. These circumstances have for some time been known to Chinese and foreigners alike, who have either seen or heard of them.

Already, by the special bounty of the Government, the tribute grain has been stopped on its way and employed to relieve the sufferers, and the undersigned have been deputed by the Imperial Commissioner of Southern Trade to invite subscriptions for the same purpose.

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We have long been aware of the energy which you display in deeds of benevolence, and of your high reputation for integrity. Seeing that, in past years, when any unusual calamity has befallen China, the foreign merchants of all nations have subscribed most liberally, and as a similar state of affairs now exists, we have greater hope that you will do your utmost to find some means of inviting all classes of the nations of the great West to subscribe to the best of their ability. The smallest sums will accumulate to a large amount (literally, the skins from foxes' shoulders pieced together will make a coat), which may save the lives of millions. This is our most earnest hope.

We take this opportunity to wish you the compliments of the season.

(Signed), KUNG CHAO-YÜAN,
Shanghai Tao-t'ai.
NIEH CH'I-KUEI,
Manager of the Arsenal.
JEN HSI-FÊN,
Wei-yüan of the Viceroy the Two Kiang.

To W. V. DRUMMOND, Esq.,
Barrister at Law, Shanghai.

[Inclosure 3 in Consul Kennedy's report.]

DISTRESS IN THE LOWER YANG-TSE PROVINCES.

[Extract from North China Daily News of January 4, 1889.]

We have heard of late that very considerable distress prevailed in this province and the neighboring province of Anhui, but little has been hitherto known of its extent. The fact is that many hundreds of thousands of the inhabitants of these two provinces are in a condition bordering on starvation.

So great is the need of the sufferers that the Chinese authorities have been unable to cope with it alone, and have found themselves under the necessity of appealing to the charitable assistance not only of their own countrymen but of foreigners as well. With this object in view His Excellency the Shanghai Tao-t'ai, the manager of the Shanghai arsenal, Nieh Ch'i-kuei, and Jên Hsi-fên, an official in the service of the Viceroy at Nanking, with the consent of the Viceroy, addressed a letter to Mr. Drummond asking for his counsel and assistance in obtaining subscriptions from foreigners both in China and in their own countries.

It was suggested by Mr. Drummond that a committee of eight foreigners and eight Chinese should be formed to consider the matter, and the following gentlemen were invited and kindly consented to serve on the committee: Messrs. F. C. Bishop, M. B. Bredon, J. J. Buchheister, W. V. Drummond, H. M. Hillier, E. G. Vouillement, W. S. Wetmore, A. G. Wood, Nieh Ch'i-kuei, Jên Hsi-fên, Ho Tang-shu, Tong Mou-chee, Y. Ching-chong, Yang Kin-tuck, Hsü Tz'u-ching, and Lo Chên yi.

A meeting of this committee was held on the 2d instant at Mr. Drummond's office, at which the Shanghai Tao-t'ai was present. Mr. Drummond was elected chairman and Messrs. Hillier and Jên Hsi-fên foreign and Chinese secretaries of the committee. A sum of about 14,300 Shanghai taels was subscribed by the Tao-t'ai and the committee at the meeting, and it was resolved to place subscription lists at the banks and other establishments in Shanghai, and to send telegrams to Europe and America asking for aid. An account will be opened with the Chartered Mercantile Bank for receipt of the funds subscribed.

There is no doubt that the existing distress amounts to a national calamity for China. The Tao-t'ai mentioned that in his own native place, Ho-fei Hsien, and its neighborhood alone, there are now five hundred thousand people who are on the brink of starvation; that

for a distance of 1,000 *li* along the valley of the Yang-tse, and for some 500 *li* inland, the drought has caused an entire failure of the crops, while to the northward the districts of Fêng-yang, Yingchow, and Ssüchow, in Anhui, have been flooded by the waters of the Yellow River and the people driven from their homes.

All who live in Shanghai should gladly contribute according to their means to relieve the misery and suffering that is almost at our doors. Even a few dollars will help towards the total, will do something in alleviating the distress, and will be welcome. There are few among us who can not afford some help, however trifling, in a cause so urgent.

[Inclosure 4 in Consul-General Kennedy's report.]

NORTH CHINA FAMINE RELIEF FUND.

Shanghai committee.

Chairman, W. V. Drummond, barrister at law.
Foreign secretary, H. M. Hillier, Deputy Commissioner of Customs.
Chinese secretary, Jên Hsi Fên, deputy of the Viceroy of the Two Kiang.
Mr. F. C. Bishop, manager Chartered Mercantile Bank of India, London, and China, at Shanghai.
Mr. M. B. Bredon, Acting Commissioner of Customs.
Mr. J. J. Buchheister, Messrs. Buchheister & Co.
Mr. Ewen Cameron, manager Hong-Kong and Shanghai Banking Corporation, Shanghai.
Mr J. Macgregor, Messrs. Jardine, Matheson & Co., Shanghai.
Mr. W. S. Wetmore, Messrs. Frazar & Co.
Mr. A. G. Wood, Messrs. Gibb, Livingston & Co.
Mr. E. G. Vouillemont, manager Comptoir d'Escompte de Paris, Shanghai.
Mr. Nieh Ch'i Kuei, manager Imperial Arsenal, Shanghai.
Mr. Y. Ching Chong, merchant.
Mr. Ho Tan Shu, Messrs. Buchheister & Co.
Mr. Yang Kin Tuck, Messrs. Russell & Co.
Mr. Hsü Tzü Ching, private secretary of the Shanghai Tao-t'ai.
Mr. Tong Mou Chee, Messrs. Jardine, Matheson & Co.
Mr. Lo Ch'ên Yi, secretary of Mr. W. V. Drummond.
The Rev. W. Muirhead.
Bankers, the Chartered Mercantile Bank of India, London, and China.

TRADE OF SHANGHAI FOR 1888.

REPORT OF CONSUL-GENERAL KENNEDY.

Our own trade with China has suffered a decline as regards the two commodities, American sheetings and kerosene oil. In the absence of the annual returns it is impossible to state what the falling off has been in these two lines, but it has doubtless been considerable. The reasons for this are easy to trace.

Our sheetings have for several years been in steady demand on account of the high standard of their quality, and from year to year have found increasing sales, while the English sheetings have been neglected.

The consular representatives of Great Britain and, of course, the dealers have from time to time pointed out to the manufacturers the necessity of im-

proving the quality of sheetings in order to compete with the American brands. Notwithstanding all that has been said and written on this subject it was not until last year that the English manufacturers brought up their grade of sheetings to the American standard. Now that it has been done, or sufficiently so to attract the Chinese buyer, the result has been disastrous to the American goods. It is a competition we can meet fairly, however, with the probable result of developing a business for the improved grades of cottons.

In the kerosene oil trade we have also met competition in the shape of Russian oil. This oil is packed in a manner identical with the American oil, and was brought here from the Black Sea in steamers at a time when the stock of American oil was low and prices consequently favorable, a fact which has materially helped its introduction. The export trade from Shanghai for 1888 was profitable in most branches.

The tea trade has not been so satisfacfory for many years. This is in a great measure due to a regard on the part of buyers to the quantities demanded by the home markets. For several years past overshipments have resulted year after year in heavy losses.

At the beginning of the year great depression was felt in the silk market, but early in the fall the market became buoyant through syndicate influences in Europe, and dealers in this article have realized handsome profits.

J. D. KENNEDY,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Shanghai, January 25, 1889.

MORTAR-MACHINES IN GERMANY.

REPORT OF CONSUL-GENERAL RAINE, OF BERLIN.

As far back as the commencement of the present century, mortar and beton (a kind of concrete or hydraulic cement), prepared by machinery, were used in large quantities for harbor building and other purposes in France and England. But the machinery used did not work continuously. It was only at the time that Paris was to be remodeled on a large scale, under the superintendency of Haussman, that, for the first time, quite primitive but self-acting clay-cutters were brought into use. Above these cutters a train of wheels was arranged, driven by gas motors or small stationary engines. These apparatus, after they had been fed with the raw material required and the outlet closed, acted as stirring works, working the material until a satisfactory mixture was obtained, whereupon the outlet was opened, to be shut again as soon as newly fed with raw material.

About the same time, also, in Germany, attempts were made to build similar apparatus continuously working. They resembled slipping-machines,

and were said to be preferable to those above described; but they could not be used on all building grounds, as they occupied too much space. Such an objection could not be raised against a mortar-machine on a very large scale which was mounted by one C. Schlickeysen, Berlin, on the building ground of the new Berlin Exchange, which was erected in the years 1859–'61. This machine consisted of two strong cutters of a vertical structure, with a gear below, arranged to work continuously. One cutter turned out lime mortar into a large pit, from which it was conveyed to the place of use; the other delivered cement and hydraulic mortar. A similar mortar-machine was used in the erection of the Berlin city hall.

When the construction of the terminus station in Berlin, almost the largest in Europe, for the Berlin-Anhalt Railroad Company, was to be commenced in 1875 (the work on it lasted five years), the said C. Schlickeysen erected the first large mortar work, differing in every feature from those which, up to that time, had been used for the manufacture of mortar, showing quite new mechanical combinations. The mortar-machines themselves were horizontal iron cylinders with 300 millimeters open space (width of the clay), of 1,200 millimeters in length, with a through-going cutter-shaft having hard-cast cutters, and at the outlet provided with a valve which, by its own weight, regulated the delivery. Upon the inlet a high funnel was mounted, in which lay a horizontal fore-mixer, the arms of which beat through between the revolving cutters, and, as they rotated three times as fast as the cutters, they forced the lime and sand thrown up to mix most thoroughly. The cutter-shaft made fifty revolutions per minute, and, as the machine delivered more than 5 cubic meters per hour, and while in operation (deducting the space for the cutters and the cutter-shaft) did not contain more than $150 \times 400 = 60{,}000$ cubic centimeters of material, traversing a distance of $1{,}200 \times 0.300 = 1{,}500$ meters, each particle of sand or lime passed through the machine under a considerably high pressure within three-quarters of a minute, sufficient for an intimate mixture. The more slowly acting stirring works can not effect such an energetic mutual penetration of sand and lime, as the single lime particles therein have more time and space to give way to the grinding action of the sand or gravel.

Machines of this kind, of which one is always in reserve and one is working, are screwed upon a podium 1,800 meters high. Beyond these machines sand is lifted by an elevator, while on the other side, by certain mechanical arrangements (conveyers), lime is raised. As to the efficiency of this kind of machine, the architect who used it gave the following data:

(*a*) The machine was worked three to five hours a day, and delivered during that time 14 to 50 cubic meters of mortar. Cleaning and keeping in working order required one hour a day.

(*b*) The mortar work delivered during the time from September 17, 1875, to November 1, 1879, was about 16,900 cubic meters.

(*c*) For its operation six horse-power was required.

(*d*) The mortar made by machinery is considerably better prepared than that made by hand. This is clearly shown by the appearance of the mortar; the former has a uniformly gray-white color, while in the mortar made by hand frequently parts are found where the white color of the lime particles can be distinctly discerned from those of the gravel or sand.

(*e*) Repairs and keeping in working order were chiefly necessary for the sand or gravel elevator, the fore-mixer, and the lime conveyer.

(*f*) The cost of the plant was: For the machine, with rails and strapping (without locomotive engine), 7,075 marks; for building work, 4,000 marks.

(*g*) The cost of manufacture was in the first year only 1 mark per cubic meter of mortar ready for use, inclusive of the cost of the transportation of lime, sand, or gravel to the mortar work. Later on the cost reached double the amount on account of a more remote transportation of the material required.

The cost of the transportation of the mortar ready for use to places where it is wanted may, on the whole, be the same as for mortar made by hand; but an advantage arises in the brick laying, as the time is saved which the bricklayer needs for stirring the lime in the lime-trough, thus saving about one hour per hand and day.

The mortar works required repairs upon the completion of the building (1875–'79), but remained available for another building purpose.

The favorable results obtained, as above described, induced the manufacturer in 1876 to establish at Berlin the first mortar works, to manufacture by this new system, on a large scale, all hydraulic or common mortar used for building purposes in Berlin. In large iron wagons of a capacity of 1½ or 2 cubic meters such mortars, ready for use, are conveyed day after day to the building places, where they are delivered at the rate of 7 marks per cubic meter.

As above stated, C. Schlickeysen manufactures different kinds of these machines, viz:

(1) A hand mortar-machine (450 marks), which, with a man at the fly-wheel, produces 1 cubic meter of well-mixed mortar per hour.

(2) A mortar-machine (700 marks) for whim and steam working, producing, with 1 to 3 horse-power, up to 5 cubic meters of well-mixed wet mortar per hour.

(3) Steam mortar-machine (1,000 marks), 3 to 5 horse-power, turning out up to 8 cubic meters per hour.

(4) Steam mortar-machine (1,800 marks), 6 to 8 horse-power, delivers 12 to 15 meters per hour.

C. Schlickeysen has of late years erected, among others, complete mortar works on the building ground of the imperial Austrian Hofburg, Vienna, and at the steel works of Fr. Krupp, of Essen.

The same manufacturer furnished also new mixing and lift machines for mortar and concrete of cement, sand, gravel, broken bricks, and stones for

the construction of the quay walls and piers in the Rhine harbor at Mannheim; further for the construction of the harbor at Heilbron, and others. Its advantages are stated to be the following:

(1) Much better and more uniform mixing by the energetic efficiency of the shovels, and the more uniform filling of the single boxes of the elevator.

(2) Quicker working, since it takes only about one minute from the pouring in of the dry cement and the sand to turn out the ready-made "concrete" from the elevator.

(3) Economy of space, steam-power, and labor, owing to all the manipulations, heretofore performed singly, being combined in one single machine, and the possibility of supplying directly into the wagons more than 300 cubic meters per day.

(4) The possibility of making with this one apparatus not only all kinds of mortar wanted for building purposes, but also of applying independently either of the two mixing machines of which the apparatus consists to make any special kind of mortar.

Prices of the concrete-machines range from 1,200 to 7,000 marks; of elevators, 1,600 to 3,500 marks; prices of one set of small cutters, from 50 to 200 marks; large cutters, 75 to 600 marks; of reserve wheels, from 90 to 450 marks.

The weights of the concrete-machines range from 1,000 to 5,000 kilograms, those of the elevators from 1,500 to 2,500 kilograms. The working capacities per hour are from 4 to 30 cubic meters, with 3 to 9 horse-power.

It is obvious that mortar works producing equally good mortar for superconstructions (air mortar) and for water constructions (cement or hydraulic mortar) must become of great utility to contractors who are to build canals and other large public works, where a uniform consistency and reliable workmanship are of the utmost necessity, especially in places where there is a lack of experienced people.

F. RAINE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, February 2, 1889.

WORKING-WOMEN IN SILESIA.

REPORT OF CONSUL DITHMAR, OF BRESLAU.

From the report of the factory and mill inspectors it appears that the number of women engaged at hard manual labor in mines and furnaces in Silesia, instead of diminishing, is actually increasing. In Upper Silesia, in 1887, seven hundred and eighty-seven more women were employed at furnace work than in 1886, while in textile factories the number of female employés had decreased. The inspectors consider the propriety of continuing to employ women at some of their present occupations in mines and the metal industries as at least questionable. In zinc furnaces they are employed

in removing the product and the refuse; but this work, although better suited for men, is mainly in the open air, and not injurious to health. In the morning, however, the women must tend the ovens while the place is filled with dust and zinc vapors, and their severe physical labor is performed in an overheated atmosphere tempered only by dangerous drafts.

In the ore mines the women are employed mainly in the hoisting shafts and at pushing cars. At a depth of from 22 to 23 yards the task of four girls is to hoist eighty tubs, containing from 1 to 1½ hundred-weight of ore each, to the surface in a shift of eight hours. That the work-women, in spite of the low wages, prefer this severe labor to domestic service is probably owing to their dislike of the restrictions placed on the house servants and their long hours of labor, whereas in the mines sixteen hours out of the twenty-four are entirely their own.

In the foundries, steel-works, and rolling-mills women perform day laborers' services, such as are not considered specially injurious by the overseers.

Doubts are expressed of the advisability of continuing to employ women in beet-sugar mills and refineries, inasmuch as their work is carried on near the centrifugal machines and in the centrifugal rooms, and is morally and physically injurious. In the Breslau and Liegnitz districts fewer women are employed now than formerly in sugar-mills. In the cigar factories the long-desired separation of the sexes has at last been accomplished.

But the condition of female laborers in mines, furnaces, and factories, although in some instances more degrading, is yet not so deplorable as that of the women and girls who endeavor to earn a livelihood by hand labor in this city. As shown by the inquiries concerning women's wages set on foot by the city statistician, the earnings of girls in many branches of industry are not more than 72 cents to $1.19 per week, while their average weekly expenses are not less than $1.55, as follows: Lodging, 24 cents; dinner, 42 cents; breakfast, lunch, and supper, 53 cents; contribution to sick fund, 4 cents; clothing, shoes, washing, fire and light, medicine, and various other necessities, 32 cents.

Unmarried women who live with their parents may be able to defray their personal expenses with an income of from 72 cents to $1.19 per week, but those who can not depend on parental assistance must reduce their living expenses to the starvation point. In fact, the inspector declares that the most of these working girls live in summer on black bread, cheap sausage, and herrings, with one properly cooked meal on Sundays. Whether this *menu* permits them to live on their earnings is at least questionable; at all events, it is not proper nourishment.

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HENRY DITHMAR,
Consul.

UNITED STATES CONSULATE,
Breslau, Germany, February 23, 1889.

THE GOLD FIELDS OF THE TRANSVAAL.

REPORT OF CONSUL HOLLIS, OF CAPE TOWN.

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No one in the United States can have an idea of the extent and richness of the gold-bearing reefs, or lodes, that have so recently been discovered in the Transvaal Republic. Even England, which is in such close commercial touch with South Africa, has only just become awake to the fact that almost boundless wealth lies just across the borders of one of her colonies, and is now an eager purchaser of shares in the various mines, and companies are floated there with marvelous rapidity. The discovery of the rich deposit of diamonds in the Kimberley district was discredited, and the reports that were sent from here were derided. The Kimberley mines, with their production of $200,000,000 worth of diamonds in the twenty years preceding 1885 and their annual output of $20,000,000, now govern the diamond market of the world and influence the prices of the precious gem.

Gold, fortunately, unlike all else, preserves its value.

HOW TO REACH THE GOLD FIELDS.

The Transvaal gold fields cover a large area, and I propose in this paper to speak only of the Johannesburg district and what I have seen there. There are two routes to the mining region, one from Cape Town by rail, 647 miles (thirty-three hours) to Kimberley, thence 300 miles (fifty-three hours) by coach to Johannesburg. The other route is from Durban to Ladysmith by rail, 189 miles (twenty-four hours), thence by coach 267 miles (seventy-five hours) to same terminus. By the latter the length of the sea trip is increased 850 miles, and is mostly used for heavy goods, while passengers and light goods are forwarded by the former.

By the schedule time given above the coaches are run day and night, but some also run on slower time, giving passengers an opportunity to rest at night. The resting places, with one exception, are not of that character to lead one to prefer to remain. The coaches in use are of the well-known Concord make, drawn by ten horses or mules, well driven, and run on schedule time.

The train service from Cape Town to Kimberley is excellent. The road-bed is well built, rails (narrow guage) well laid, and the rolling stock in good condition, with first-class sleeping coaches on the mail trains. The officials are courteous and attentive to the wants of passengers, and the line is well supplied with good restaurants. The scenery between Cape Town and the Karoo Desert, the first table-land, is striking and beautiful, a succession of mountain ranges being in the near view all the time.

Though the Desert of Karoo is at times an apparently barren plain, nature has provided food and drink for the sheep pastured there in a plant similar to the ice plant, full of water. Dr. Symes Thompson, in commending the virtues of Karoo air to the English health seeker, says: "There is no such

air, we believe, to be breathed in South Africa, if anywhere else; it is exhilarating as champagne without the risk attendant in the copious use of that beverage."www.libtool.com.cn

The sun shone from a cloudless sky, and the temperature was high, the heat was not unpleasant, and this superb atmosphere was like a tonic to body and mind. I believe there is no place in the world where a consumptive could so hopefully look forward to recovery as here on these upland plains. This characteristic of the climate I found to continue up to Johannesburg, about 6,000 feet above the sea-level, where the character of the country forcibly reminds one of the prairies.

CHARACTER OF THE COUNTRY.

One important factor to be taken into consideration in speculating on the probable future of the gold fields of the Transvaal is the character of the country and the proximity of fuel. One naturally associates gold mines with mountains. Of the latter there is a total absence, only here and there rise the stone kopjes, mounds of loose, detached ferruginous rocks, from 50 to 200 feet high, sometimes singly and again in ranges.

The land lies as level as an Iowa prairie, rolling somewhat, and nothing bars the way from turning a team out of the road on either side, with the whole wide prairie before one.

At the time of my visit, although rain had been infrequent, the herbage, of short bunch grass, was green and sweet, and the cattle were in wonderfully good condition. The land would support a thousand-fold more than are now pastured there, and seems to be capable of producing large crops of grain.

TRANSPORTATION.

As neither the Transvaal nor the Orange Free State has as yet a single mile of railroad within their borders, all the produce from the farms and the freight from the sea-board must be hauled in wagons with ten or a dozen yoke of cattle. It would be interesting to learn the number of cattle employed in this business. Such is the conservative nature of the Dutch Boers, with which this country is peopled, that when the question of building a railway from the capital of the Free State to connect with the colonial system came up a double petition was sent to the legislative body with six thousand signers against and three thousand in favor of the project, and a committee was chosen by the objectors to watch legislation. Notwithstanding this opposition the presidents of the two republics were so heartily in favor of the road that a bill has just been passed to proceed in its construction.

THE MINING DISTRICT — JOHANNESBURG.

This town was born about two years ago. Now it is estimated to contain nearly 15,000 inhabitants. The early settlers were confident of the vast extent of wealth underlying the surrounding plain, and did not content themselves with temporary structures for habitations; but hand in hand with the

erection of cabins, covered in with corrugated iron, went forward the building of substantial edifices of brick and stone. Within six months waterworks were established by a private company, and its stock is 250 per cent. above par. All this has been accomplished without the aid of railroads, and wtih nothing to depend on but the lumbering ox-wagon. All this region has risen from the sea. Of this there can be no question, so many striking evidences are seen on every hand.

The mining territory already prospected covers an area of over 1,500 square miles, bounded roughly by Johannesburg, Heidleberg, Barberton, and Klerksdorp, all mining centers, and from which prospectors are radiating out in all directions. In the first named district fifteen "reefs" or lodes have been opened up, and they have been traced for 75 miles. These reefs are from 2 to 12 feet wide, the dip varying greatly. No one can conjecture the depth of these reefs. The richest mine I visited was growing richer as the depth increased, and was turning out 7 ounces of 22 karat gold to the ton. All the mines are producing from 1 ounce upward to the ton of ore, and the cost of working is, on the average, about $4. Labor is cheap and plentiful; the average pay of Kafirs is 75 cents per day, and they make excellent laborers. In view of these conditions a dividend of 5 per cent. per month is not surprising. The report of one company received to-day gives gross earnings £19,000, net profit of £9,000. Forty-five per cent. dividends had been divided during the year, and £900 carried forward. Three thousand six hundred and eighty-seven tons of ore were crushed during the last year, yielding 4,227 ounces, averaging over 1 ounce 6 pennyweights to the ton.

Some of the companies are now erecting substantial buildings on their grounds for the housing of their employés. One of the best I saw on the Robinson mine consisted of an adobe-built one-story structure, inclosing a quadrangle of 40 by 20 feet. In the center was a cement-built bath large enough for half a dozen to use at once. This court-yard was to be roofed in so the Kafirs could cook therein in rainy weather their simple food of "maties," or corn, their single article of diet. The building was provided with comfortable bunks and the men are carefully looked after. The men seem happy at their work, and the sound of their chanting song that accompanies the wielding of the drill and sledge comes up from every shaft. They dislike to work in the winter season, and seem to be of a delicate constitution, with small limbs.

SILVER MINES.

It would seem as if nature had determined to outdo herself when she stored up the mineral wealth of South Africa, the latest discovered, and, I confidently believe, will prove to be the richest in the world. Although the gold reefs already opened are sufficiently rich to give the country a mineral reputation, they by no means comprise all the mineral resources of the country. Silver now enters into competition with gold, side by side, territorially

speaking. Taking Pretoria, 36 miles from Johannesburg, as a center, silver-bearing reefs have been discovered of a new character, with silver predominating, covering a radius of 30 miles, the extent of which is an unknown quantity. One mineralogist informed me he had assayed samples that gave 200 pounds of silver to the ton. Engineers on the ground confidently declare that the town itself overlies a huge silver mine. Since my visit, a little over a month ago, many reefs have been opened and assays made, and reported in the local papers to run as high as 300 pounds to the ton. In combination with the silver is found galena and copper to an extent that will more than pay the cost of working. Farms have been taken over by syndicates, and companies are in process of flotation. The rapidity with which this is executed is marvelous. One farm, 8 miles from town, was sold and floated into a company. The original owner of the farm took seventy thousand shares at the par value of $5 per share. He has since bought one thousand shares paying at the rate of $30 per share. They are now $85 per share—all within a month. The gold properties that have been put on the market have followed the same course. As a general thing all the stock offered has been taken by the original members of the purchasing syndicate, who form the company of the new flotation, at $5 or less, with the chance of a rapid rise. When stock in new companies has been offered for subscription it has been usually the case that only 5 per cent. of the amount subscribed could be allotted, so eager were the public to buy.

EXTENT OF TERRITORY.

It must be borne in mind that this is only the beginning of mineral discovery in this country. Thousands of square miles, which, in all probability, will prove equally productive, are yet held by the ultra-conservative Boers, who will not permit a prospector to appear within their limits. An offer of $200,000 has no more effect on their cupidity than the offer of so many cents. In fact, I do not believe they realize the value of money. One gentleman informed me that he once purchased a farm for $30,000. It was to be paid in gold, and when $10,000 in sovereigns had been counted out the Boer simply said, "thank you," supposing he had received the amount agreed upon. He knows not what to do with the money when received, and always reserves a good-sized homestead.

FUEL AND WATER.

Coal.—In considering the future prospects of mining in the Transvaal, the question of water and fuel hold first place, after the fact of the extent and richness of the gold and silver bearing reefs have been demonstrated. Within 3 miles of Pretoria coal has just been found, and experts predict that it will extend through the valley. Aside from this there are several coal mines now being worked in the near vicinity, one of which is producing coal of a character superior to that usually imported, burning freely and completely to ash. These mines are favorably situated, can be cheaply worked, and coal can be delivered at the mining centers by tram-cars at a *low* charge for freight.

The Government had given several concessions for coal mining, as it had for many other things, but is now revoking them, and concessions, which have done much to retard the advance of the country, are now a thing of the past.

Water.—The question of a sufficient water supply for the various mining plants is of the utmost importance. There is scarcely a mine now being worked that could not keep in operation two or three times the number of stamps now in use. In many places "spruits," or creeks, are running full of water in the rainy season, some of which become dry later on. Engineering skill will soon solve this problem, and dams will be constructed for the storage of water on a scale commensurate with the needs of the districts, the conditions for which are very favorable. Whenever water has been encountered in sinking shafts it has been utilized at the stamps, and the water is particularly sweet and pure. I see no reason to doubt that an abundant supply could be procured by boring.

MACHINERY.

The two leading manufacturers of mining machinery represented in the district visited were Messrs. Frazer & Chalmers, Chicago, and Sandycroft, England. The merits of each seem to be about equal in the opinion of engineers and superintendents with whom I talked. Manufacturers in the United States are at present handicapped in their efforts to introduce their productions into this region by the cost and difficulties of transportation. I have already shown how rapidly the formation and flotation of companies is brought about. The same desire to "push things" obtains in their efforts to bring to light the golden treasures that they know are theirs. They will thus often seek the nearest market, even when they know they must purchase an inferior article, which must eventually be replaced by better when further established. At present American machinery must be sent to England and transshipped to the Cape line, incurring the double risk of breakage and loss and making a journey of about 9,000 miles with its consequent heavy cost of freight. Sailing vessels are out of the question for goods urgently wanted. A merchant has just informed me that goods ordered last April are still on the water. Could we have a regular line of steamers established between some port in the United States and the Cape, I have no doubt our manufacturers would reap a rich harvest. From indications already apparent I have not reason to doubt the discovery of rich alluvial diggings in the near future, which will be sure to attract a tide of immigration as great, perhaps, as that which took place in California.

PETROLEUM.

This important production is now claiming a share of public attention, petroleum having been found on the Vaal River, and extensive deposits of shale, rich in oil, having been opened near Kimberley. Experts have made distillations from this shale and have pronounced it rich in oil, and have

given it as their opinion that oil will be found by boring. On the strength of these reports a company has been floated, and the necessary apparatus and men have been brought from the United States to proceed with the undertaking. With the present duty on petroleum oil of 1s. per imperial gallon the production of oil here would prove to be very remunerative.

As cities and towns spring up as if by magic in the mining districts, a great impetus is given to all branches of agriculture, as the farms of the neighborhood will be able to sell their products at their own doors instead of trucking long distances by ox-wagons for hundreds of miles. Wine and brandy of colonial manufacture are double the price of the previous year, and every department of commerce feels new life infused into all the arteries of trade, and prosperity takes the place of despondency and doubt.

THE UNITED STATES AND THE GOLD FIELDS OF THE TRANSVAAL.

What share will the United States take in all this development? This is a pertinent question. Unless some benefit shall accrue to our people by the opening up of this marvelously rich region all the information which I have endeavored to lay before you will be for naught. The opportunity for the rapid acquisition of wealth has not been so good for half a century. A great field is open here for the sale of mining machinery for working the ore, which contains particularly fine gold. Soon agricultural implements, hardware, doors and sash, and "Yankee notions" will follow. Mining machinery should be up to the standard indicated heretofore and experienced men sent in charge. I suggested to various managers that it would be advisable to have all small parts in duplicate, which was well received. The larger field, however, is for the moneyed men. I am firmly convinced that if a syndicate of men of wealth were to be formed and one of their number should come out here accompanied by an expert they could realize five millions from the use of one million. The field is so wide, and there is so much undeveloped territory yet to be secured that failure seems to be out of the question.

Within the last year hundreds of fortunes have been built up. So universal is the rush to the gold fields and the desire to engage in gold share-trading that clerks are leaving their desks and the civil service has become crippled in some of its branches. I know of many, who six months ago had not $500, who have acquired $50,000.

In the Transvaal the constant remark made to me was: "If we only had a thousand of your countrymen here, what a country we could make of this." I hope to see the fruition of this, being well assured that both this country and the immigrant would be the gainers. Already the tax paid by the mining companies has filled to overflowing the coffers of the Government, which must find its natural outlet in the internal improvements so much demanded by the people, and the whole of South Africa is receiving benefit from the distribution of this stored-up wealth, and an era of prosperity has begun. I append a few quotations of gold shares:

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	July 29. £	s.	d.	February 10. £	s.	d.
Aurora	0	14	0	0	75	0
Blanbank	0	10	0	0	14	0
Bertha's Reef	0	10	0	0	26	0
Bankets	0	4	6	0	65	0
Bantjus	0	1	8	0	100	0
City and Suburban	1	15	0	13	10	0
Cornucopia	0	15	0	0	36	0
Duprez	0	9	0	0	36	0
Femiras	1	12	6	22	0	0
Gold Fields	1	8	0	3	15	0
Geldenhuis	1	5	0	4	10	0
Heriat	1	15	0	11	0	0
Jumpers	2	1	0	18	0	0
Jubilee	2	0	0	10	10	0
Lunglater	1	1	0	8	0	0
Mays	2	5	0	13	0	0
Moss Rose	0	12	6	7	0	0
Salisbury	3	0	0	40	0	0
Robinson				67	0	0

These stocks were issued at the par value of £1 sterling.

In quoting the report of Mr. Edward Jones, a mining engineer whose opinion is in justly high repute, I have only to say that the discoveries that have been made since his visit have more than borne out his prediction of the value of these gold fields:

The gold fields proper of the Transvaal may be divided into two categories — that is, so far as really commercial mining operations are concerned — namely, the Barberton and the De Kaap district, in the northeast, and the Johannesburg or Witwatersrand district, including Klerksdorp and Potchefstroom, in the southwest. There are others, such as the Zoutpansberg, Malmani, etc., which, although of great extent and richness, can hardly be considered as yet in their commercial phase of development. This will come later on — perhaps sooner than we expect; and no doubt some agreeable surprises are in store for the patient and fortunate possessors of mining farms in those districts.

My remarks to-day must, however, be confined to the Witwatersrand district. I have devoted many months of careful study and practical examination to that now famous gold field. Its discovery in the first instance was due to Mr. Struben, one of the best-informed Englishmen in the Transvaal; but for two or three years even some of the high-class mining experts there (whose past experience should have taught them better) refused to recognize it as a paying gold field. Indeed, Mr. Struben himself had begun to lose heart on seeing the results of his first efforts at crushing the ores. These, it must be borne in mind, are of a character so different to anything before found in South Africa that the crude and primitive systems employed for separating the gold were ineffectual.

The auriferous reefs — varying from a few inches to many feet in width — are composed of a peculiar conglomerate resembling "pudding-stone," made up of rounded quartz-pebbles and other silicious rocks, cemented together with a highly ferruginous earth, the whole being set into a hard and compact mass. The gold is found only in the ferruginous cement, the quartz-pebbles being almost entirely devoid of it. This fact would seem to point to geyser action and the injection of an auriferous solution, which, coming in contact with the ferruginous earth, deposited its gold by chemical action in infinitesimally thin films, and in the metallic state. The gold is rarely visible, and so light and fine that it will float away on the surface

of the water if not caught by some mechanical contrivance and plunged into contact with mercury. It was precisely this peculiarity that rendered abortive Mr. Struben's first efforts to extract the gold by an ordinary stamp mill. Appliances are now more perfect, and a fair proportion of the assay contents in gold is extracted. There is, however, still a good deal to be done towards perfecting the systems of treatment as now carried on at the Rand mines. To the above improvements, however, is due in some measure the increased output of gold bullion, but I am not yet satisfied on this point, and look forward to see very soon a new era opened up, not only there but all over the gold-producing districts of the world, when, by the judicious application of certain improved chlorination processes, the loss of precious metal should not exceed 2 or 3 per cent. of its assay value. In the early stages of the Rand an ore assaying 10 or 12 ounces to the ton sometimes only yielded an ounce or two in the mill.

But the importance and ultimate producing power of a gold field does not so much depend upon the more or less perfect systems for extracting the precious metals as upon the extent or area of the auriferous formation and its capabilities of furnishing a practically inexhaustible supply of ore. Having assured ourselves of the existence of gold in paying quantities in the reefs, the next step is to determine how far these extend, and, if possible, to estimate approximately their duration. Now, the Witwatersrand gold field, I may briefly and positively say, fulfills even the most sanguine expectations in this respect. I have traced the reefs for many miles from east to west, and during months of surveys and observations I scarcely found a break in their continuity. I have assured myself by personal inspection that the field, or, to speak more correctly, the formation of the country rock (sandstones) extends over 100 miles from east to west, and from 30 to 40 miles from north to south. Starting from Johannesburg, on the northeastern border of the Rand, the main reef and many others are traceable through undulating hills for over 40 miles to the southwest; then comes a great plain stretching away for 50 to 60 miles to the westward, having scattered over its surface at intervals of 5, 10, and 15 miles apart mounds or kopjes of sandstone, standing out in regular lines like so many landmarks, in bold relief, as if placed there by nature to guide us on the track. On approaching these we find them identical with the undulating hills of the Rand; and, better still, we find the reefs and leaders of the Rand reproduced in our old friend the ferruginous conglomerate, carrying gold and presenting the same characteristics.

Pushing still onward to the southwest we follow the kopjes down close to Potchefstroom, but slightly to the north, and away for 20 or 30 miles further in regular lines till we come to Klerksdorp. Here the country becomes again undulating and assumes the same aspect as the Rand — sandstone, intersected by fine conglomerate reefs, and leaders traceable through denuded sections of the country rock, and everywhere identical. But it does not stop here. Stretching away to the borders of the Vaal River, we can still trace it into the the Orange Free State. Here, however, a change is apparent; the strata begin to show different and almost opposite angles of inclination to those observed near Johannesburg. And this forces upon us the theory that the whole district, from this latter town to where we are now, forms one great basin or valley, and that its edges or extreme borders have been formed by upheavals due to subterranean disturbances.

Over many miles of this area (except where indicated by the kopjes) it is not possible to trace or discover the gold-bearing reefs — no doubt they are covered by many hundreds of feet of alluvial and sand; but as soon as you get into the broken or undulating country, there they are to be found with the same regular underlie or dip and direction, and with the same characteristics which distinguish the Witwatersrand district. This is more especially marked in the neighborhood of Klerksdorp, where active mining operations are now being carried on, and where even more regular and wider reefs than many at Johannesburg are yielding richer ores. On the Wolverand and other farms, about 9 miles from Klerksdorp, numerous reefs varying from 2 to 12 feet wide have been opened up, and the genuine conglomerate ore, extracted in quantities, yields from 1½ to 9 ounces of gold to the ton. This is, indeed, most encouraging, and to my mind solves the problem as to the great body of ore available in that district. Then it has the advantage of being some 120 miles nearer Kimberley and the

railway to Cape Town than Johannesburg, and is well supplied with water for all milling purposes, not as a motive power, but for treating the ores. Finally, the proximity and abundance of first-class coal for steam purposes must render mining operations in that district not only lucrative and economical, but regular and constant in their returns.

I can not conclude this superficial sketch without expressing my admiration of Nature's beneficent designs in placing there in abundance, and within easy reach of man, the essential elements — fuel and water — to enable him to achieve a brilliant success in extracting her treasures.

GEO. F. HOLLIS,
Consul.

UNITED STATES CONSULATE,
Cape Town, February 13, 1889.

MANUFACTURE OF ZINC IN BELGIUM.

REPORT OF CONSUL PRESTON, OF LIÉGE.

The zinc industry, like that of fire-arms, is eminently of Liége origin. It was born in Liége. It was a celebrated chemist of Liége, the Abbé Dony, who created it, so to speak, at the beginning of the present century, and the first zinc factory on the continent of Europe was established by him in the Rue Saint Léonard, one of the oldest streets of Liége.

To-day the province of Liége owes in great part its prosperity to this industry. Ten of the largest metallurgic establishments of the basin of the Meuse are devoted to it, and by the number of workmen employed and the capital invested it without doubt takes a prominent place in the grand industrial movement of this country.

At the time of the Roman invasion the Belgians were distinguished for their skill in the working of metals; it is not surprising, therefore, that they were the first nation of Europe to understand and practice the working of zinc. A new metal of a fine yellow color, having the qualities of copper, was introduced into Belgium by way of Germany. It had been produced in Asia Minor at a remote period. The Belgians soon learned that it was made by alloying copper with a mysterious substance contained in calamine rock. This rock was known through a large part of Belgium and in a corner of the grand duchy of Luxembourg, not far from the Liége district. This great bed of rock was called the Moresnet bed, and here was the seat of the first working of calamine or carbonate of zinc. It is spoken of in ancient documents at the beginning of the fifteenth century. Mention is also made of it in 1439 as "the calamine mountain worked by the men of Aix;" from this circumstance it received the name of Altenberg, or Vieille Montagne, in English "old mountain."

Historians say there is reason to believe that calamine was worked in Belgium in the twelfth century, about the same time as the making of brass. After the annexation of the Belgian provinces by France in 1795 the Gov-

ernment itself worked the Vieille Montagne mine for the benefit of the nation, but under this arrangement the profits speedily diminished, and in 1806 it was let to Daniel Dony, of Liége. Great progress in chemistry had by this time been made by scientific men, and the desire for research and experiment was wide-spread. Dony was obliged by the terms of his lease to make such experiments as he might judge useful to reduce calamine to a metallic state. By his persevering genius he overcame all difficulties, and he received a royal patent in January, 1810, good for fifteen years. Dony had discovered the new method of reducing zinc ores, which had a vast development and has always since been known as the "Liége method."

His first furnace, as has been said, was in the Rue Saint Léonard. He started a second one on January 28, 1810. It was placed between two populous suburbs in the neighborhood of the collieries, and played an important part for many years. It was closed in 1880.

Dony's discovery and his experiments cost him large sums of money. He received the praises of scientific men, but this did not make up his losses, and the great difficulty now was to find applications for the new metal and to promote its use; in short, to find a market for it. He was indefatigable as ever, but the effort was beyond his power, and in 1818 he was completely worn out by his labors and was obliged to resign his work into other hands. Dominique Masselman took it up, but in spite of his rare energy and his great powers he did not succeed in completing the work he had undertaken. In 1837 he and his sons established the "Society of the Vieille Montagne," which society last year celebrated its fiftieth anniversary, and with which the history of the zinc industry is intimately connected. At the time of its foundation this society possessed the mine of calamine of Moresnet, on the neutral territory, two foundries in active operation, that of Saint Léonard and that of Moresnet, and a third one in course of construction at Angleur, near Liége. Some months later they acquired the rolling-mills of Tilff, in Belgium, and of Bray, in France. In 1837 the two foundries of Saint Léonard and Moresnet produced together 1,833 tons of zinc; the next year, together with the works of Angleur, they produced 2,540 tons.

New markets were opened for zinc, and the production of the three works increased rapidly from year to year, as is shown by the following table of their production from 1839 to 1852:

Year.	Zinc.	Year.	Zinc.
	Tons.		*Tons.*
1839	3,336	1846	6,720
1840	3,631	1847	6,156
1841	3,891	1848	6,060
1842	4,508	1849	7,844
1843	5,105	1850	9,180
1844	5,665	1851	9,775
1845	5,941	1852	10,372

The Society Vieille Montagne bought up several competing works, and its production increased from year to year until 1882, when it reached a total of 49,000 tons of raw zinc, 36,000 tons of which were made in Belgium.

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Several other establishments were founded in Belgium for the working of zinc, among which may be mentioned the Nouvelle Montagne Company, formed in October, 1845. This company has two works, one at Prayon, near the Vestre, and the other at Engis, on the Meuse, and in 1846 produced 1,357 tons of raw zinc. They were supplied with calamine from their own royalties between Verviers and Stembert, and from La Mallieue and Les Fagnes, near Engis. The annual yield of these works rose gradually, until in 1865 it reached 3,749 tons, and since 1874 it has reached 6,650 tons.

In 1882 the Prayon works separated from the Nouvelle Montagne and started a new company, called the Société Anonyme Metallurgique de Prayon. Another company was formed in 1849 to work the corphalic mines near Huy, called the Société de Corphalie, and its production in 1869 was 6,112 tons. After some reverses this company was amalgamated with a zinc mining company in Croatia and its name was changed to the Société Metallurgique Austro-Belge. About the same time Mr. De Laminne created a zinc foundry at Ampsin, on the banks of the Meuse, on the side of La Heshaye. It is now able to supply over 6,000 tons per annum.

The Grande Montagne Company was formed in 1846, and was afterwards taken into the Vieille Montagne. Another society was founded by Valentine Cocq, its works being situated at Hollagne aux Pierres, and produces now 18,000 tons of zinc. This foundry is the largest in Europe, and belongs at present to the Vieille Montagne Company.

The zinc works at Ougrée, now belonging to Messrs. Eschger, Ghesquire & Co., dates from 1859, and now produces over 4,000 tons of raw zinc. The most recent works in Belgium are those of Messrs. Dumont Brothers, of Liége, started in 1875 at Selaigneaux, near their lead works. Its annual capacity is about 6,000 tons.

Belgium now has eleven works for reducing zinc ores, all in a high state of activity. The following table gives the names of the companies and their output in 1882:

	Tons.
Vieille Montagne	35,940
Austro-Belge	8,099
De Laminne	6,255
G. Dumont & Brothers	5,500
Nouvelle Montagne	5,480
Bleyberg	4,647
Ougrée	4,144
Prayon	1,500
Total	71,565

This total represents about one-third of the whole production of Europe. I am unable to continue the table to a later period of all the works in Bel-

gium, but the Vieille Montagne Company alone produced in 1887 more than 60,000 tons, and I believe the other companies have increased in about the same proportion.

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Belgium is very rich in zinc-bearing strata, of which some consist of calamine and others of blend, mixed with sulphates of iron and lead. Calamine (carbonate of zinc) was, for a long time, the only ore treated in the zinc works of Belgium, it being preferred because it lends itself more easily to metallurgical operations. About thirty years ago they began to utilize blend (sulphide of zinc), as the making of zinc was fast extending and supplies of new material were required. Special works were constructed for desulphurizing the new ore, and before long it was supplied to the foundries.

The principal works for roasting blend are at Bleyberg, Engis, Flône, Ampsin, Corphalie, and Selaigneaux. The works for the mechanical preparation of zinc in Belgium have a very high reputation. All the Belgian foundries receive part of their supplies of ore from abroad, first from the mines of Spain, and later from Sardinia, Greece, Algeria, Sweden, France, Germany, and England. Almost all these ores come by sea to Antwerp and are forwarded by the agents there, by rail or water, to the zinc works. They require only a supply of ore, as everything else is found in their own country.

The great strength of these manufactories lies in the fact that they have a class of strong, intelligent, active, and well-disciplined workmen. Among the 7,000 workmen many have saved up money enough to buy their own houses, with little gardens, which they cultivate for themselves. At the Valentine Cocq works, belonging to the Vieille Montagne, half the workmen are proprietors. The company did its best to encourage this, and have established for the benefit of its employés and workmen a sick fund, a provident fund, a savings bank, and a life insurance fund. The two first are really the workmen's institutions, the sick fund being made up by small weekly contributions from their wages. The provident fund is made up of payments by the company to provide pensions for the workmen when age or sickness overtakes them.

METALLURGY OF ZINC.

The different processes for the reduction of zinc ores are so well known that it is not necessary to explain them. The general methods on the Continent are the Liége method and the Silesian. The Liége furnace is generally higher than its width, and contains seven or eight horizontal ranges of crucibles. They also consume less fuel than the Silesian furnaces. Belgium retains the Liége (or direct) heating process inaugurated by Dony.

Great efforts have been made to perfect the metallurgy of zinc. In all the operations required, in the preparation of the refractory materials concerned, in the crushing of the ores, in the composition of the charges, in the construction of the hearths, in the arrangement and dimensions of the heating chambers, important improvements have been realized. All new and improved appliances have come into use, and are due, for the most part,

to eminent manufacturers in the district. Changes have also been made to render more easy and less dangerous the labor of the workmen. The zinc vapors formed in the crucibles are condensed in receivers made of refractory earth and called tubes or battes. From these the liquid metal is withdrawn, and it is immediately run into ingots or rectangular plates of a thickness from .08 to 1 inch, and weighing 45 pounds. The first products of the distillation are collected in the form of dust, more or less oxidized, in wrought-iron pipes, which form a prolongation of the tubes. This dust, which they call gray oxide, must be submitted to a fresh treatment, unless it can be utilized directly for painting, or for making hydro-sulphide of soda. The second treatment is sometimes carried out in a furnace with vertical retorts, which bears the name of its inventor, M. Montefiore, and is worked particularly at the Corphalie manufactory. The ingots of raw zinc are rolled into sheets used for making oxide of zinc or brass, or for other industries, and are sold in the condition in which they leave the foundry.

ROLLED ZINC.

The uses of rolled zinc are various, and the consumption continually increases. The greater part of the zinc produced passes through the rolling-mill. The rolling of this metal is very difficult, from the fact that its malleability is confined between very narrow limits of temperature. The most suitable temperature is about 212° F., and this must be maintained through the whole process; below this point the metal is too hard, and above this point it becomes brittle. At 390° F. it can be brayed in a mortar. Zinc is generally remelted before being rolled into sheets. This is accomplished in a reverberatory furnace; it rids the zinc of the impurities, especially lead, which is almost always found in it. The remelted plates are first roughed down, or rolled between heavy rolls; then, after being cut down to a fixed weight, they are taken to the finishing train, where the rolling is completed. Between these two operations the sheets are reheated in annealing boxes, placed upon the melting furnace so as to utilize the waste heat. There is more or less scrap, which, with any defective sheets, is remelted with the ingots coming from the foundry. On leaving the finishing rolls the sheets are cut by shears to a rectangular shape and to the dimensions required by commerce. The shears most used in Belgium are the lever and the guillotine shears. The sheets are sorted with great care, and those found perfect are stamped with the seal of the works.

Belgium manufactures yearly about 40,000 tons of sheet zinc. The rolling-mills which produce the greater part are those of the Vieille Montagne Company at Tilff and Angleur, very near Liége, which turn out 20,000 tons, the rest being divided among smaller companies, as the Nouvelle Montagne Company, at Engis; Society of Prayon; Francotte, Pirlat & Co., Chênée and Liége; Nagelmakers, at Chaudfontaine; Haureur, of Fraipont; Madame Bonhomme, at Nessonvaux; Lejeune Brothers, at Stère; Dacier, at Liége; Brasseur, at Huy; and M. G. Schmidt, at Brussels. The uses and applications of rolled zinc are well known.

OXIDE OF ZINC.

Zinc heated to a red heat is evaporated, and the vapor coming in contact with air is oxidized, producing a white substance, which is called zinc-white. This has for a long time been employed in decorative painting. It has a brilliant whiteness, which does not change by the action of the air and does not injure the workmen who use it, like white lead. To volatilize ingot zinc it is placed in a series of retorts, within one furnace, and the oxide is formed in an exhaust chimney, and then passes through a long series of passages and condensing chambers, in which are ranged tanks of sheet-iron or cloth to collect deposits. At a certain hour of the day it is collected into casks, and after being tested as to quality it is ready for delivery. According to the purity of the metal, various qualities are produced. The best is called "blanc de neige," or snow white, and is of a very superior quality; No. 1 white is the most used, the ores for this quality being selected and purified by remelting; No. 2 white is the common variety. In the process of manufacture there is more or less waste material, imperfectly oxidized, deposited in the retorts and work-shops; this residuum is carefully ground, washed, and dried, and is employed in painting in the place of lead.

In the American method of making zinc-white they use the ore direct; this is cheaper than the Liége method, but its product is of inferior quality to that produced by sublimation. There are but two works in Belgium for making zinc-white, the Vieille Montagne Company (at the Valentine Cocq works), which produce yearly 3,000 tons by sublimation; the other is at Ougrée, near Liége, where the American method is employed, but at present it is idle.

DIRECT USE OF INGOT ZINC.

Zinc was employed in the arts before it was known in the metallic state, and, as of old, the making of brass absorbs the largest quantity. Melted zinc is used for casting ornaments and objects of art, statuettes, groups, etc., which are afterwards covered with copper by a sort of galvanism and make a fine imitation of bronze. In the galvanizing of iron, telegraph wires, etc., it is much used.

The following table shows the amount of raw zinc manufactured in Europe since the year 1860:

District.	1860.	1865.	1870.	1875.	1880.	1882.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Upper Silesia	40,354	35,430	36,518	43,123	65,437	69,846
Rhenish provinces and Westphalia	8,592	16,647	18,006	25,396	27,107	35,546
Vieille Montagne	28,925	30,592	42,112	41,618	44,690	48,861
Other Belgian companies	9,144	13,485	14,476	18,836	26,700	35,625
Asturias Company { Spain	1,777	1,325	3,048	3,000	4,000	5,047
Asturias Company { France	.....	.....	.....	5,321	8,592	11,423
Other French makers	.....	500	500	1,500	3,000	.....
England	6,104	6,523	16,000	15,903	22,000	25,581
Poland	1,500	3,000	3,625	3,000	4,463	4,544
Austria	1,500	1,000	1,000	1,000	3,199	3,199
Total	97,896	108,502	135,285	158,687	209,187	239,672

The production of zinc by the different companies engaged in its manufacture in Europe has exceeded the demand, and last year a syndicate was formed by the members of the Franco-Belgian group for the limitation of zinc production as agreed upon as follows:

Annual maximum production.

	Tons.
Vieille Montagne	52,532
Company Royal Asturienne	15,574
Society Austro-Belge	9,270
Mr. L. de Laminne	6,697
Company Escambrera Bleyberg	5,579
Nouvelle Montagne	5,108
Eschger, Ghesquire & Co	4,030
Society Metallurgique de Prayon	3,965
Total	102,755

The company of the Vieille Montagne had some struggles at the commencement, as has been stated above, and developed slowly, notwithstanding the efforts of its eminent administrators—the Honorable Count Alfred Masselman, Vilain XIV, and de Morny—and notwithstanding the indisputable capacity of such directors as MM. Lambelin and Charles de Brouckère. In 1846 the conduct of its affairs was placed in the hands of the Hon. Saint Paul de Sinçay as director-general, who holds the position to-day, and to whose courtesy I am indebted for most of the information contained in this report. In its divers establishments the society employs 450 clerks and engineers and 6,200 workmen. In 1887, 6,218 workmen received an annual salary of 490,042 francs, or 3.15 francs per day each. It has been the first care of the society to see that its workmen participate in all the benefits in proportion to their zeal and industry. Each one feels proud of his position, and the union between employers and employés is perfect. To this fact it owes its success and its entire freedom from dissatisfaction, strikes, and other disturbances.

WM. S. PRESTON,
Consul.

UNITED STATES CONSULATE,
Liége, February 6, 1889.

GOVERNMENT SCHOOLS IN TIEN-TSIN.

REPORT OF CONSUL SMITHERS.

In 1885, after peace had been declared between France and China, the viceroy, Li Hung Chang, obtained the Imperial sanction for opening military and naval schools at Tien-Tsin, where Chinese pupils could receive instruction in Western sciences. The military school has been in operation five years, has 150 pupils, and one class has already graduated. It has four German professors, and the instruction is entirely in the German and Chinese languages.

The naval school is divided into two departments—the executive, for the training of naval officers, and the engineering, for the training of engineers. The number of pupils is 120, selected from the different provinces of the Empire, and the length of the course is five years. The director of studies is Mr. Yen Tsung Kwang, who is assisted by three English professors, two of whom belong to the English navy. Mr. Yen Tsung Kwang is a graduate of the foreign school at Foo-Chow, who, after seeing service afloat, was sent to the royal naval school at Greenwich, where he graduated with high honors. The remarkable proficiency of the pupils of the naval school, as shown at the public examinations, reflects the highest credit upon Mr. Yen Tsung Kwang and his associates. These examinations are conducted much in the same way as at West Point and Annapolis, and the subjects embrace all the higher branches of mathematics, the difficult problems of which the Chinese mind is said to master with extraordinary facility.

A school for instruction in telegraphy was organized in 1880, and at present has 48 pupils. The instructors in this school are Danes, but the instruction is given in the English language.

A local medical school, with a hospital attached, was founded some years ago by the viceroy. This school is now about to be reorganized with an eminent foreign doctor at its head, the object being to qualify young men for the medical profession and attach them to the army and navy, as well as other branches of the public service.

In addition to the schools already mentioned, an Anglo-Chinese college will be opened early in the year 1889. The building for this college was commenced in 1887 and is now nearly completed. It is a fine, gothic structure, situated on the left bank of the Peiho, and has accommodations for 300 students. The organization of this college is not yet complete, but it is understood that the curriculum will be more extended than at any of the other schools, and will include a general course of study in the English language and literature, as well as in mathematics and the sciences. It is reported that Mr. C. D. Tenney, an American, now the private tutor of the viceroy's children, will be placed at the head of this college.

When it is considered that hitherto the officers in the Chinese army and navy below the rank of general and admiral have been taken from the uneducated classes and have obtained their commissions often by purchase, and that both branches of this service have been without a medical staff, the importance of the educational establishments at Tien-Tsin, promoted and fostered by the viceroy, can not be overestimated.

E. J. SMITHERS,
Consul.

UNITED STATES CONSULATE,
Tien-Tsin, December 31, 1888.

WOOL AND WOOLEN INDUSTRIES OF ENGLAND.

REPORT BY CONSUL GRINNELL, OF BRADFORD.

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I have prepared, and for the purpose of comparing I inclose a tabulated statement showing the total amount of exports hence to the United States each year of the past twenty-five, that is, 1864 to 1888.

Statement showing the value of declared exports from the consular district of Bradford to the United States during the years 1864 to 1888, inclusive.

Year.	Amount.	Year.	Amount.
1864	$7,856,747.11	1878	$5,206,149.10
1865	12,787,077.81	1879	7,087,458.38
1866	14,750,596.74	1880	9,373,987.38
1867	10,225,955.93	1881	7,808,327.90
1868	12,307,460.14	1882	8,161,188.46
1869	12,996,075.80	1883	10,766,497.27
1870	14,680,720.73	1884	13,018,571.28
1871	15,765,705.85	1885	13,547,544.37
1872	18,302,369.79	1886	17,877,892.65
1873	14,898,622.93	1887	16,544,580.69
1874	13,762,945.12	1888	20,361,361.25
1875	11,317,626.35	Total	303,245,202,69
1876	6,695,450.88		
1877	7,144,288.78		

The year 1872 shows the largest total up to 1888, viz, $18,302,369.79, while in 1888 the amount is $20,361,361.25. Estimating wool at the same price in each of the years named the increase in the shipments of 1888 is $2,058,991.46, but, in fact, the price of wool in 1872 was upward of two and a half times as great as in 1888, being thus (for the standard grade of English wool): Price of Lincoln hogs in 1872, 26½*d.* per pound; in 1888, 10½*d.* per pound.

The increased quantity of merchandise thus indicated as pouring in upon us is not only injurious because made up almost wholly of manufactured goods, but as to nearly 30 per cent. of the $20,000,000 of exports it is a positive menace to the existence of one of our important branches of manufacture—worsted and woolen cloths. I refer to worsted coatings, which are still assessed like worsted yarn. I quote from the tariff of March 3, 1883, schedule K, page 363: Value not over 40 cents per pound, 12 cents per pound and 35 per cent. ad valorem; value not over 60 cents per pound, 18 cents per pound and 35 per cent. ad valorem; value not over 80 cents per pound, 24 cents per pound and 35 per cent. ad valorem; value above 80 cents per pound, 35 cents per pound and 40 per cent. ad valorem.

I inclose a table (worsted coating table) which will show how great a variety of these cloths may go in not only under 80 cents, but under 60, and even under 40 cents per pound. The figures at the extreme right are the aggregate of the discounts allowed by the appraiser before fixing the rate of duty; these are, 1–37 in. (37 inches to the yard), one yard per piece, and 2½ per cent.

Worsted coating table.

Price per pound.	12 oz.	13 oz.	14 oz.	15 oz.	16 oz.	17 oz.	18 oz.	19 oz.	20 oz.	21 oz.	22 oz.	23 oz.	24 oz.	*d.*	Price per pound.	Aggregate of discount allowed, etc.
	¼*d.*	1/13*d.*	⅓*d.*	1/12*d.*	1*d.*	1 1/16*d.*	1 1/12*d.*	1 1/10*d.*	1 1/6*d.*	1 1/5*d.*	1 1/3*d.*	1 1/10*d.*	1 1/2*d.*			
s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*d.*	*s.* *d.*	*d.*
1 8	1 3	1 4½	1 5⅓	1 6¼	1 8	1 9⅛	1 10⅔	1 11¾	2 1	2 2¼	2 3½	2 4¾	2 6	1¼	1 8	1.54
1 9	1 3¾	1 5 1/13	1 6⅔	1 7 11/12	1 9	1 10 1/16	1 11⅝	2 0 11/12	2 2¼	2 3 1/10	2 4⅞	2 6 1/10	2 7½	1 1/10	1 9	1.62
1 10	1 4½	1 5⅞	1 7¼	1 8⅚	1 10	1 11⅜	2 0¾	2 2⅛	2 3½	2 4⅞	2 6⅛	2 7⅝	2 9	1 3/10	1 10	1.69
1 11	1 5¼	1 6 11/13	1 8⅓	1 9 1/12	1 11	2 0 1/16	2 1⅞	2 3 1/10	2 4¾	2 6 1/10	2 7⅓	2 9 1/10	2 10½	1 7/10	1 11	1.77
2 0	1 6	1 7½	1 9	1 10½	2 0	2 1½	2 3	2 4½	2 6	2 7½	2 9	2 10½	3 0	1½	2 0	1.85
2 1	1 6¾	1 8 1/10	1 9⅓	1 11 7/10	2 1	2 2 1/16	2 4⅛	2 5 11/12	2 7¼	2 8 11/12	2 10⅓	2 11 11/12	3 1½	1 1/10	2 1	1.92
2 2	1 7½	1 9⅓	1 10¾	2 0⅓	2 2	2 3 1/16	2 5¼	2 6⅞	2 8½	2 10⅓	2 11¾	3 1⅓	3 3	1 1/10	2 2	2.00
2 3	1 8¼	1 9 11/12	1 11⅜	2 1 1/10	2 3	2 4 11/12	2 6⅜	2 8 1/10	2 9¾	2 11 7/10	3 1⅛	3 2 11/12	3 4½	1 11/12	2 3	2.08
2 4	1 9	1 10¾	2 0½	2 2¼	2 4	2 5¾	2 7½	2 9¼	2 11	3 0¾	3 2½	3 4¼	2 6	1¾	2 4	2.16
2 5	1 9¾	1 11 1/10	2 1⅓	2 3 1/10	2 5	2 6 11/12	2 8⅝	2 10 7/10	3 0¼	3 2 1/10	3 3⅞	3 5 11/12	3 7½	1 11/12	2 5	2.23
2 6	1 10½	2 0⅛	2 2¼	2 4⅓	2 6	2 7⅞	2 9¾	2 11 7/10	3 1½	3 3⅛	3 5¼	3 7⅛	3 9	1⅞	2 6	2.31
2 7	1 11¼	2 1 1/10	2 3⅛	2 5 1/10	2 7	2 8 11/12	2 10⅝	3 0 11/12	3 2¾	3 4 11/12	3 6	3 8	3 10½	1 11/12	2 7	2.39
2 8	2 0	2 2	2 4	2 6	2 8	2 10	3 0	3 2	3 4	3 6	3 8	3 10	4 0	2	2 8	2.46
2 9	2 0¾	2 2 11/12	2 4⅞	2 6 11/12	2 9	2 11 1/16	3 1⅛	3 3 1/10	3 5¼	3 7 1/10	3 9⅜	3 11 1/10	4 1½	2 1/10	2 9	2.54
2 10	2 1½	2 3⅝	2 5¼	2 7⅓	2 10	3 0⅛	3 2⅛	3 4⅜	3 6½	3 8⅝	3 10¾	4 0⅞	4 3	2 1/10	2 10	2.62
2 11	2 2¼	2 4 7/10	2 6⅝	2 8 13/12	2 11	3 1 1/16	3 3⅛	3 5 1/10	3 7¼	3 9 11/12	4 0⅛	4 2 1/10	4 4½	2 1/10	2 11	2.69
3 0	2 3	2 5¼	2 7½	2 9¾	3 0	3 2¼	3 4⅛	3 6¾	3 9	3 11¼	4 1½	4 3¾	4 6	2¼	3 0	2.77
3 1	2 3¾	2 6 1/10	2 8⅛	2 10 11/12	3 1	3 3 1/16	3 5⅛	3 7 11/12	3 10¼	4 0 1/10	4 2⅞	4 5 1/10	4 7½	2 1/10	3 1	2.85
3 2	2 4½	2 6⅞	2 9¼	2 11⅝	3 2	3 4⅜	3 6¾	3 9⅛	3 11½	4 1⅝	4 4¼	4 6⅝	4 9	2⅛	3 2	2.93
3 3	2 5¼	2 7 11/12	2 10⅛	3 0 1/12	3 3	3 5 1/16	3 7⅛	3 10 1/10	4 0¾	4 3 1/10	4 5⅝	4 8 1/10	4 10½	2 1/10	3 3	3.00
3 4	2 6	2 8½	2 11	3 1½	3 4	3 6⅛	3 9	3 11½	4 2	4 4½	4 7	4 9½	5 0	2½	3 4	3.08
3 5	2 6¾	2 9 1/10	2 11⅞	3 2 1/10	3 5	3 7 1/16	3 10⅛	4 0 11/12	4 3¼	4 5 11/12	4 8⅜	4 10 11/12	5 1½	2 1/10	3 5	3.16
3 6	2 7½	2 10⅛	3 0¾	3 3⅜	3 6	3 8⅛	3 11¼	4 1⅞	4 4½	4 7⅛	4 9¾	5 0⅜	5 3	2⅛	3 6	3.23
3 7	2 8¼	2 10 11/12	3 1⅝	3 4 1/10	3 7	3 9 1/16	4 0⅛	4 3 1/10	4 5¾	4 8 1/10	4 11⅛	5 1 11/12	5 4½	2 1/10	3 7	3.31
3 8	2 9	2 11¾	3 2½	3 5¼	3 8	3 10¾	4 1½	4 4⅛	4 7	4 9¾	5 0½	5 3¼	5 6	2¼	3 8	3.39
3 9	2 9¾	3 0 1/10	3 3⅜	3 6 1/10	3 9	3 11 11/12	4 2⅝	4 5 1/10	4 8¼	4 11 1/10	5 1⅝	5 4 11/12	5 7½	2 1/10	3 9	3.46
3 10	2 10½	3 1⅜	3 4¼	3 7⅛	3 10	4 0⅞	4 3¾	4 6⅛	4 9½	5 0⅜	5 3¾	5 6⅛	5 9	2⅜	3 10	3.54
3 11	2 11¼	3 2 1/10	3 5⅛	3 8 1/10	3 11	4 1 11/12	4 4⅞	4 7 11/12	4 10¼	5 1 11/12	5 4⅝	5 7 1/10	5 10½	2 1/10	3 11	3.62
4 0	3 0	3 3	3 6	3 9	4 0	4 3	4 6	4 9	5 0	5 3	5 6	5 9	6 0	3	4 0	3.70

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Statement showing the value of declared exports from the consular district of Bradford to the United States during the four quarters of the calendar year 1888.

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Articles.	Quarter ending— March 31.	June 30.	Sept. 30.	December 31.	Total.
Buttons	$97.34	.....	$306.59	$109.50	$513.43
Camels' hair tops	82,868.73	$48,658.57	32,537.92	97,243.01	261,308.23
Card clothing	18,592.04	11,126.09	8,136.97	9,643.19	47,498.29
Carpets and rugs	141,196.15	36,752.29	127,953.64	38,154.44	344,056.52
Chemicals	2,024.38	465.36	16,133.66	467.02	19,090.42
Cotton goods	128,860.45	94,471.33	85,386.17	55,428.77	364,146.72
Cow and calf hair	2,220.17	9,188.95	8,962.73	8,435.08	28,806.93
Elastic web	54.37	156.21	.....	82.73	293.31
Grease, etc	14,867.02	8,345.77	10,748.72	9,803.67	43,765.18
Hair cloths	3,312.21	5,043.44	3,107.32	5,724.53	17,187.50
Hemp bagging	658.23	236.11	319.16	147.48	1,360.98
Household effects	.....	.....	.....	739.58	739.58
Iron, steel, etc	32,912.48	25,455.06	37,704.18	48,175.23	144,246.95
Leather	8,537.00	12,623.38	5,961.26	7,654.43	34,776.07
Machinery	70,808.95	57,641.72	55,580.60	103,054.22	287,085.49
Miscellaneous	883.67	515.39	564.97	1,941.08	3,905.11
Mohair goats' hair	5,543.74	6,744.28	24,974.60	53,002.53	90,265.15
Noils	7,760.41	5,845.03	10,533.84	59,149.30	83,288.58
Oil-cake	461.65	1,454.25	2,166.55	2,783.39	6,865.84
Paper	358.18	1,662.68	517.47	512.65	3,050.98
Reeds and healds	.....	173.25	.....	167.78	341.03
Shawls, etc	781.69	953.59	1,597.37	1,746.34	5,078.99
Silk seals, plushes, etc	475,127.95	894,992.09	879,891.62	353,191.91	2,603,203.57
Silk waste	2,924.18	2,879.95	9,490.69	4,857.98	20,152.80
Stuff goods	1,747,751.87	1,526,045.13	2,018,411.95	1,666,092.60	6,958,301.55
Tape, braid, etc	1,744.74	1,912.19	701.46	834.11	5,192.50
Tapestry, damasks, etc	5,919.04	2,786.94	11,681.15	3,663.90	24,051.03
Waste (worsted)	68,303.37	152,093.75	118,631.80	346,591.42	685,620.34
Wool	231,536.73	240,019.22	216,643.26	356,295.10	1,044,494.31
Woolen goods	120,855.77	146,076.65	68,356.50	72,207.86	407,496.78
Worsted coatings	1,124,080.77	1,493,500.27	1,565,425.23	1,814,504.16	5,997,510.43
Yarns — Worsted	236,324.86	100,758.61	110,748.88	136,587.63	584,419.98
Mohair	27,724.03	18,707.68	31,314.63	30,772.92	108,519.26
Other	26,973.93	38,651.65	28,722.88	40,378.96	134,727.42
Total	4,592,066.10	4,945,936.88	5,493,213.77	5,330,144.50	20,361,361.25
Same periods, 1887	4,008,984.42	3,711,630.70	4,731,824.03	4,092,141.54	16,544,580.69
Increase	.....	.....	.....	.....	3,816,780.56

As to the English manufacturers of wool, they have all been fully busy and have done very well indeed, as the following figures of the actual consumption of wool and hair (mohair, alpaca, and camel hair) in England during 1888 will show.

Wool, including mohair, etc., manufactured in England during 1888.

	Pounds.
Botany, *i. e.*, Australian	235,240,705
English grown	110,020,310
East Indian, Mediterranean, etc	62,663,655
Mohair, alpaca, and camel hair	25,071,330

While the profits of manufacture and exchange are not so large as formerly, the volume of production and sale has increased in a ratio probably fairly indicated by the export returns to the United States and other statis-

tics herewith submitted. Add to this the increased economy in these branches of commerce and industry, the steady elimination of needless overlookers, middle-men, brokers, agents, etc., the increasing facility and cheapness of manufacture, and finally the very low price of the raw material, it will be apparent that the wool industry of Great Britain has never been more prosperous, or the supremacy of Bradford, its head and center, more incontestable.

The number of sheep in Great Britain in 1888 was 28,938,716, being 461,034 less than in 1887. The wool clip of 1888 was 133,623,281 pounds, of which 23,600,000 pounds were exported, leaving 110,023,281 pounds for home consumption.

WILLIAM F. GRINNELL,
Consul.

UNITED STATES CONSULATE,
Bradford, February 1, 1889.

COMMERCIAL TREATY BETWEEN MEXICO AND THE UNITED KINGDOM.

REPORT OF MINISTER BRAGG.

I have the honor to inclose herewith a printed translation of a treaty of of friendship, commerce, and navigation recently concluded between Great Britain and the Republic of Mexico.

EDWARD S. BRAGG,
Minister.

LEGATION OF THE UNITED STATES,
Mexico, March 8, 1889.

Her Majesty the Queen of the United Kingdom of Great Britain and Ireland and his Excellency the President of the United States of Mexico, being desirous of maintaining and strengthening friendly relations, and of promoting commercial intercourse between the dominions of Her Britannic Majesty and the territories of the Mexican Republic, have resolved to conclude a treaty of friendship, commerce, and navigation, and have named as their plenipotentiaries, that is to say, Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Sir Spenser St. John, Knight Commander of St. Michael and St. George, Envoy Extraordinary and Minister Plenipotentiary of Her Britannic Majesty in Mexico; and His Excellency the President of the United States of Mexico, Señor Senador Don Emilio Velasco, ex-Minister Plenipotentiary of Mexico in France, etc., who, after having communicated to each other their respective full powers, found in good and due form, have agreed upon and concluded the following articles:

ARTICLE 1. There shall be perfect peace and sincere friendship between the United Kingdom of Great Britain and Ireland and the United States of Mexico. The high contracting parties shall use their best endeavors that this friendship and good understanding may be constantly and perpetually maintained.

ART. 2. The contracting parties agree that in all matters relating to commerce and navigation any privilege, favor, or immunity whatever, which either contracting party has actually granted or may hereafter grant to the subjects or citizens of any other state, shall be extended immediately and unconditionally to the subjects or citizens of the other contracting party, it being their intention that the trade and navigation of each country shall be placed, in all respects, by the other on the footing of the most favored nation.

ART. 3. The produce and manufactures of the dominions and possessions of Her Britannic Majesty, which are imported into the United States of Mexico, and the produce and manufactures of Mexico which are imported into the dominions and possessions of Her Britannic Majesty, whether intended for consumption, warehousing, re-exportation, or transit, shall be treated in the same manner as, and, in particular, shall be subjected to no higher or other duties, whether general, municipal, or local, than the produce, manufactures, and goods of any third country the most favored in this respect. No other or higher duties shall be levied in Mexico on the exportation of any goods to the dominions and possessions of Her Britannic Majesty, or in the dominions and possessions of Her Britannic Majesty on the exportation of any goods to Mexico, than may be levied on the exportation of the like goods to any third country the most favored in this respect.

Neither of the contracting parties shall establish a prohibition of importation, exportation, re-exportation, or transit against the other which shall not, under the like circumstances, be applicable to any third country the most favored in this respect.

In like manner, in all that relates to local dues, customs, formalities, brokerage, patterns, or samples introduced by commercial travelers, and all other matters connected with trade, British subjects in Mexico, and Mexican citizens in the dominions and possessions of Her Britannic Majesty, shall enjoy most favored nation treatment.

In the event of any changes being made in Mexican laws, customs tariff, or regulations, sufficient notice shall be given in order to enable British subjects to make the necessary arrangements for meeting them. The Mexican authorities shall, moreover, deal equitably with all cases arising from unintentional ignorance of any of the changes above mentioned.

ART. 4. British ships and their cargoes shall, in Mexico, and Mexican vessels and their cargoes shall, in the dominions and possessions of Her Britannic Majesty, from whatever place arriving and whatever may be the place of origin or destination of their cargoes, be treated in every respect as ships and cargoes of the most favored nation.

The preceding stipulation applys to local treatment, dues, and charges in the ports, basins, docks, roadsteads, harbors, and rivers of the two countries, pilotage, and generally to all matters connected with navigation.

Every favor or exemption in this respect, or any other privilege in matters of navigation, which either of the contracting parties shall grant to a third power, shall be extended immediately and unconditionally to the other party.

All vessels which, according to British law, are to be deemed British vessels, and all vessels which, according to the law of Mexico, are to be deemed Mexican vessels, shall, for the purposes of this treaty, be respectively deemed British or Mexican vessels.

For the same purpose shall be considered as ports of each of the contracting parties those which are or hereafter may be declared open by the respective governments for import or export trade.

The two contracting parties agree to consider as a limit of their territorial waters on their respective coasts the distance of 3 marine leagues, reckoned from the line of low-water mark. Nevertheless this stipulation shall have no effect, excepting in what may relate to the observance and application of the custom-house regulations and the measures for preventing smuggling, and can not be extended to other questions of civil or criminal jurisdiction, or of international maritime law.

ART. 5. The subjects or citizens of each of the contracting parties shall be permitted to reside, permanently or temporarily, in the dominions or possessions of the other, and to occupy and hire houses and warehouses for purpose of commerce, whether wholesale or retail. They shall also be at full liberty to exercise civil rights, and, therefore, to acquire, possess, and dispose of every description of property, movable and immovable, as far as the laws of each country will permit. They may acquire and transmit the same to others, whether by purchase, sale, donation, exchange, marriage, testament, succession, *ab-intestato*, and in any other manner, under the same conditions as natives of the country. Their heirs and legal repre-

tatives may succeed to and take possession of it, either in person or by procurators, in the same manner and in the same legal forms as natives of the country.

In none of these respects shall they pay upon the value of such property any other or higher impost duty or charge than is payable by natives of the country. In every case the subjects or citizens of the contracting parties shall be permitted to export their property, or the proceeds thereof, if sold, freely and without being subjected on such exportation to pay any duty different from that to which natives of the country are liable under similar circumstances.

The citizens or subjects of each one of the contracting parties, who may be residing, temporarily or permanently, in the dominions and possessions of the other, are subject to the laws of the country where they reside, especially to those which determine the rights and obligations of foreigners on the same conditions as those of the citizens or subjects of the most favored nation.

ART. 6. The dwellings, manufactories, warehouses, and shops of the subjects or citizens of each of the contracting parties in the dominions and possessions of the other, and all premises appertaining thereto, destined for purposes of residence or commerce, shall be respected.

It shall not be allowable to proceed to make a search of, or a domiciliary visit to, such dwellings and premises, or to examine or inspect books, papers, or accounts, except under the conditions and with the forms prescribed by the laws for natives of the country.

The subjects or citizens of each of the two contracting parties in the dominions and possessions of the other shall have free access to the courts of justice for the prosecution and defense of their rights, without other conditions, restrictions, or taxes beyond those imposed on natives of the country, and shall, like them, be at liberty to employ in all causes their advocates, attorneys, or agents from among the persons admitted to the exercise of those professions according to the laws of the country.

ART. 7. The subjects or citizens of each of the contracting parties in the dominions and possessions of the other, shall be exempted from all compulsory military service whatever, whether in the army, navy, or national guard, or militia. They shall likewise be exempted from all contributions, whether pecuniary or in kind, imposed as a compensation for personal service, and, finally, from forced loans and from charges, requisitions, and war contributions, unless imposed on real property, when they shall pay them equally with nationals.

ART. 8. The subjects or citizens of either of the two contracting parties residing in the dominions and possessions of the other shall enjoy, in regard to their houses, persons, and properties, the protection of the government in as full and ample a manner as the subjects or citizens of the most favored nation. In like manner the subjects or citizens of each contracting party shall enjoy, in the dominions and possessions of the other, full liberty of conscience, and shall not be molested on account of their religious belief.

ART. 9. The subjects or citizens of each of the contracting parties shall have, in the dominions and possessions of the other, the same rights as natives, or as subjects or citizens of the most favored nation, in regard to patents for inventions, trade-marks, and designs, upon fulfillment of the formalities prescribed by law.

ART. 10. Each of the contracting parties may appoint consuls-general, consuls, vice-consuls, pro-consuls, and consular agents to reside, respectively, in towns or ports in the dominions and possessions of the other power, each one of them reserving the right of excepting those places where it may not appear convenient to admit them, whenever this exception is extended to the consular functionaries of all other nations. Such consular officers, however, shall not enter upon their functions until after they shall have been approved and admitted in the usual form by the government to which they are sent. They shall exercise whatever functions, and enjoy whatever privileges, exemptions, and immunities are, or may hereafter be granted there to consular officers of the most favored nation. The archives and official papers of consular functionaries shall be respected as inviolable, without the authorities of the country being able, on any account, to seize them or take note of their contents.

ART. 11. The consuls-general, consuls, vice-consuls, and consular agents of each of the contracting parties, residing in the dominions and possessions of the other, shall receive from the local authorities such assistance as can by law be given to them for the recovery of deserters from the vessels of their respective countries.

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ART. 12. Any ship of war or merchant vessel of either of the contracting parties, which may be compelled by a stress of weather, or by accident, to take shelter in a port of the other, shall be at liberty to refit therein, to procure all necessary stores, and to continue their voyage, without paying any dues other than such as would be payable in a similar case by a national vessel. In case, however, the master of a merchant vessel should be under the necessity of disposing of a part of his merchandise in order to defray his expenses, he shall be bound to conform to the regulations and tariffs of the place to which he may have come.

If any ship of war or merchant vessel of one of the contracting parties should run aground or be wrecked within the territory of the other, such ship or vessel, and all parts thereof and all furniture and appurtenances belonging thereunto, and all goods and merchandise saved therefrom, including any which may have been cast out of the ship, or the proceeds thereof, if sold, as well as all papers found on board such stranded or wrecked ship or vessel, shall be given up to the owners or their agents when claimed by them within the period fixed by the laws of the country; and such owners or agents shall pay only the expenses incurred in the preservation of the property, together with the salvage or other expenses which would have been payable in the like case of a wreck of a national vessel.

The goods and merchandise saved from the wreck shall be exempt from all duties of customs unless cleared for consumption, in which case they shall pay the same rate of duty as if they had been imported in a national vessel.

In the case either of a vessel being driven in by stress of weather, run aground, or wrecked, the respective consuls-general, consuls, vice-consuls, and consular agents shall, if the owner or master or other agent of the owner is not present, or is present and requires it, be authorized to interpose in order to afford the necessary assistance to their fellow-countrymen.

ART. 13. For the better security of commerce between the subjects of Her Britannic Majesty and the citizens of the United States of Mexico, it is agreed that, if at any time any interruption of friendly intercourse, or any rupture should unfortunately take place between the two contracting parties, the subjects or citizens of either of the said contracting parties who may be residing in the dominions or territories of the other, or who may be established there in the exercise of any trade or special employment, shall have the privilege of remaining and continuing such trade or employment, without any manner of interruption in full enjoyment of their liberty and property, so long as they behave peacefully and commit no offense against the laws; and their goods, property, and effects, of whatever description they may be, whether in their own custody, or intrusted to individuals, or to the State, shall not be liable to seizure or sequestration, or to any other charges or demands than those which may be made upon like goods, property, and effects belonging to native subjects or citizens. Should they, however, prefer to leave the country, they shall be allowed to make arrangements for the safe keeping of their goods, property, and effects, or to dispose of them, and to liquidate their accounts; and their safe-conducts shall be given them to embark at the ports which they shall themselves select.

ART. 14. The stipulations of the present treaty shall be applicable to all the colonies and foreign possessions of Her Britannic Majesty, so far as the laws permit, excepting to those hereinafter named, that is to say, except to India, The Dominion of Canada, Newfoundland, New South Wales, Victoria, South Australia, Western Australia, Queensland, Tasmania, New Zealand, The Cape, Natal.

Provided, always, that the stipulations of the present treaty shall be made applicable to any of the above-named colonies or foreign possessions, on whose behalf notice to that effect shall have been given by Her Britannic Majesty's representative in Mexico to the Mexican Minister for Foreign Affairs, within two years from the date of the exchange of the ratifications of the present treaty.

ART. 15. Any controversies which may arise respecting the interpretation or the execution of the present treaty, or the consequence of any violation thereof, shall be submitted, when the means of settling them directly by amicable agreement are exhausted, to the decisions of commissions of arbitration, and the result of such arbitration shall be binding upon both governments.

The members of such commissions shall be selected by the two governments by common consent, failing which, each of the parties shall nominate an arbitrator, or an equal number of arbitrators, and the arbitrators thus appointed shall select an umpire. The procedure of the arbitration shall in each case be determined by the contracting parties, failing which, the commission of arbitration shall be itself entitled to determine it beforehand.

ART. 16. The present treaty shall continue in force during ten years, counted from the day of the exchange of the ratifications; and in case neither of the two contracting parties shall have given notice, twelve months before the expiration of the said period of ten years, of their intention of terminating the present treaty, it shall remain in force until the expiration of one year from the day on which either of the contracting parties shall have given such notice.

ART. 17. The present treaty shall be ratified by Her Majesty the Queen of Great Britain and Ireland and by His Excellency the President of the United States of Mexico, and the ratifications shall be exchanged at Mexico as soon as possible.

In witness whereof the respective plenipotentiaries have signed the same, and have affixed thereto the seals of their arms.

Done, in two originals, at the city of Mexico, the twenty-seventh day of November, one thousand eight hundred and eighty-eight.

(L. S.) SPENCER ST. JOHN.
(L. S.) EMILIO VELASCO.

MEXICO, *February 16, 1889.*

TELEGRAPH COMMUNICATION WITH CADIZ.

REPORT OF CONSUL INGRAHAM.

Last year the Eastern Telegraph Company, of London, opened a branch office at Cadiz for the purpose of affording quicker communication with England and the United States, connecting with the main system at Gibraltar and Lisbon.

The result has proved successful, not only from a pecuniary point of view to the company, but has been of great practical advantage to merchants here having business connections with the United States, one prominent shipper having recently informed me that in consequence of the new cable he was enabled to load a vessel consigned to him, which otherwise would have returned in ballast, by having speedy messages exchanged with New York and at reasonable rates.

Before this new line was connected at Cadiz messages went overland, and were often delayed one or two days, whereas now the average time occupied in transmission to New York is only one hour.

A great number are now exchanged between Cadiz and the United States, going over the Eastern Company system to England and then according to the route indicated by the sender.

Messages for the United States ought to be directed via the Eastern, as this is much the quicker route.

The rates by this cable are the same as the overland rates, viz: to England 45 centimos, or about 9 cents a word; from Cadiz to Gibraltar 15 centimos, or about 3 cents; and from Cadiz to Tangier 29 centimos, or about 6 cents per word.

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The present cost of a telegram from Cadiz to New York is 1.67 peseta, or about 32 cents a word. I learn that the Eastern Telegraph Company propose continuing the cable from Tangier down the Morocco coast as far as Mogador as soon as the obstacles put forward by the Moorish Government have been overcome This would form a continuous cable with quick transmission of messages from New York, and at low rates via Eastern Telegraph Company and England to Lisbon, Cadiz, Gibraltar, Tangier, and other cities of Morocco—localities having constantly-increasing relations with the United States.

DARIUS H. INGRAHAM,
Consul.

UNITED STATES CONSULATE,
Cadiz, February 20, 1889.

FACTORY OPERATIVES AND APPRENTICES IN GERMANY.

REPORT OF COMMERCIAL AGENT SMITH, OF MAYENCE.

In November, 1886, I transmitted to the Department an abstract of the reports of the factory inspectors of the German Empire for the year 1885, which appeared in CONSULAR REPORTS No. 74, for February, 1887, and in November, 1887, an abstract of their reports for 1886, printed in CONSULAR REPORTS No. 89, for February, 1888; and I now forward an abstract of the most interesting features in their reports for 1887.

There were forty-eight inspectors, with thirty assistants, seven of whom were chemical experts, assigned as follows: Eighteen, with five assistants, to Prussia; four to Bavaria; seven, with twenty-one assistants, to Saxony; one, with one assistant, to Wurtemberg; one, with one assistant, to Baden; one, with one assistant, to Bremen; one, with one assistant, to Hamburg; and to Hesse, Mecklenburg-Schwerin, Saxe-Weimar, Oldenburg, Brunswick, Saxe-Meiningen, Saxe-Altenburg, Saxe-Coburg and Gotha, Anhalt, Schwarzburg-Sandershausen, Schwarzburg-Rudolstadt, Waldeck and Pyrmont, Reuss (elder line), Reuss (younger line), and Lubeck, one each. These officers inspected 22,826 factories but once, 1,546 more than once, and visited 257 at night.

There are too few of these men to keep the factories thoroughly under control, but they exert a salutary influence and check and remove many abuses.

GENERAL INDUSTRIAL SITUATION.

This has already been set forth by the reports of our consular officers for 1887, and need not be adverted to at any length here. According to the factory inspectors, business during the year was good, and a general improve-

ment manifested itself, especially during the last six months of the year. Activity prevailed in many works which in 1886 had with difficulty been able to keep their men employed, and the shortening of the hours of labor, which had been of frequent occurrence on account of falling off of orders, came generally to a stop, and an increased employment of labor succeeded thereto. The general improvement of business which thus began in 1887 continued throughout 1888 to an increased extent, which is said by one of the leading journals of the Empire to have been the most active year since 1870–'71.

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CHILDREN.

Full and detailed statistical information respecting the employment of children in the factories is made only every two years, and as this was done in 1886 it is not met with in the reports for 1887. According to the reports for 1886, there were employed in the factories that year 21,053 children from twelve to fourteen years of age and 134,529 young persons from fourteen to sixteen years old.

The policy of the country is to discourage, as much as possible, the employment of children in the factories. In a number of inspection districts there was a less number of children and young persons employed in the factories in 1887 than in 1886, while in others an increased employment of them occurred. There seems, on the whole, to have been generally an increased employment of young persons, due to the improved industrial situation.

In the Kingdom of Saxony there were 13,758 boys and 10,353 girls from fourteen to sixteen years of age employed in 1887, against 11,406 and 8,547, respectively, in 1886; and 6,550 boys and 4,102 girls from twelve to fourteen years of age, against 6,110 and 3,618, respectively, in 1886. In addition to these there were 685 boys and 14 girls from fourteen to sixteen years of age, and 465 boys and 8 girls from twelve to fourteen years of age employed at the Saxon mines. There were 314,518 working people employed in Saxony in 1887, against 289,992 in 1886. Of every 100 workers 4.4 per cent. were boys from fourteen to sixteen years of age in 1887, against 3.9 per cent. in 1886; 3.3 per cent. girls of the same age, against 3 per cent. in 1886, and 2.1 per cent. boys from twelve to fourteen years of age. The number of factories in Saxony employing young persons from twelve to sixteen years of age was 5,607 in 1887, against 4,987 in 1886.

Baden, where a great many young people are employed in the factories, showed also an increased employment of them in 1887, but no figures are given. Sixty per cent. of the young people are in the cigar factories.

In making their inspections the inspectors, in some instances, discovered that children would suddenly be removed from the factories when it was learned the inspector was coming; and it was also perceived that at some places the young people had been drilled to give false answers to the questions put to them by inspectors; but generally the inspectors are well received and meet with frank treatment.

The regulations of the State governing the employment of children are often violated. Thus, for instance, in the Dusseldorf district, among 514 industrial establishments visited by the inspector in 1887 employing young people, there were 105 in which the inspectors discovered violations of regulations respecting children, 132 being made to work too long, 19 at night, 12 on Sundays, 258 without proper resting pauses, and 2 on wool-cleaning machines. The gerverberath of the same district learned of three factories which seriously violated the regulations by having 53 children work too long, 10 work at night, 47 work without proper pauses, 5 work on wool-cleaning machines, and 2 look after boilers.

In the Arnsberg district, of 91 manufacturers in one city 52 have been fined for using children contrary to law. They were not serious cases, the inspector says, and he adds that intentional, grave, and continuous violation of the law does not occur at all, or at least very seldom. Young persons, as a rule, are employed according to their physical strength, and the violations of law are generally with respect to slight formalities. All over the Empire employers of young people are often cited before the authorities and fined for slight infractions of the regulations regarding them. The willful employment of young people beyond the length of time allowed is said to be exceptional, especially among the large factories.

APPRENTICES.

Each year the inspectors are required to report on some particular topic, designated by the Government beforehand. In 1885 it was hours of labor, in 1886 female laborers, and in 1887 the training of young men for industrial work. They were instructed to report (1) in what branches of industry there is a need of skilled workmen,* foremen, and bosses, and to what extent this want is provided for by formal apprenticeships; (2) in what degree this is according to the regulations of the Empire governing apprenticeships; (3) in what way, where there are formal apprenticeships, is provision made for the training of apprentices, and what special arrangements are there, apart from the regular employment in the factory, for their industrial and moral improvement; and (4) are establishments known of in which the number of apprentices is remarkably out of proportion to the number of men employed.

To these inquiries the reports of the inspectors are said to be in general in close agreement, although they differed somewhat in their apprehensions of the term "skilled workmen," some attaching to it a limited, others an extended signification, making it to comprise almost all workmen who require a certain amount of instruction in their work. The most of them, however, treated the expression as meaning one who had undergone a species of training similar to a mechanic's apprentice, requiring several years of systematic instruction and placing him above the ordinary mass of workingmen.

*The German is really a "learned workman," and by the expression skilled workmen in this report is meant one who has regularly learned his trade or vocation.

There is but slight disposition among manufacturers to provide themselves with skilled laborers by training up apprentices. They depend, to a certain extent, upon the handicrafts for good workmen, of which there is only a limited supply for their purposes, or, in the case of some branches of industry, none at all suitable, or generally let workmen "pick up" certain lines of work, or endeavor to provide for the want of well-trained labor by perfecting machinery to take its place. Where men from the trades are taken they generally have to be broken in to factory work.

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For this disinclination on the part of manufacturers to take and train up apprentices various reasons are given. One objection often made is that youths want too much freedom nowadays, and that the factories, on account of the mode of working in vogue in them, are not adapted to apprentices. An apprentice needs a good deal of attention and requires strong control, and this can not be well given in the factories. There is too much freedom in them. Then, again, boys do not care to bind themselves for a term of years, but prefer to go into the factories as day laborers with the right to quit when they please; and, besides, they generally get better wages to start with. Another objection is that the law does not allow minors under sixteen years of age to be employed more than ten hours a day in the factories and makes other restrictions respecting them which are not applied to mechanics' apprentices. The objection most frequently urged, however, is that the apprentices do not want to serve their time fully out, and when they have acquired a trade leave those of whom they have learned it to go to some one else. To hold them employers, in some localities, are given to deducting a small amount weekly or monthly from their wages during the whole of the apprenticeship as security against departure by the apprentices, or make them give bond before entering on the apprenticeship to serve out their time. Sometimes, to induce the fulfillment of the time, they promise the present of a certain sum of money, such as $50. But even these means do not always suffice to keep the apprentice. Of course, where there is a written indenture, the apprentice is under legal obligation to serve out the apprenticeship, but he gets out of it in one way or another often.

There is less running away done by apprentices than a few years ago, even where there is no written contract. This is said to be because labor in general has become more stable, and because apprentices are paid better wages towards the close of their apprenticeships than formerly.

The foremen and bosses in the factories are often men who have not passed through a regular apprenticeship, but have distinguished themselves by particular diligence and aptitude at their work, and thus been selected by their employers for positions of trust and responsibility.

STATE REGULATIONS GOVERNING APPRENTICESHIPS.

The special regulations of the German Empire governing the employment of apprentices are in substance as follows:

The master must give the apprentice a thorough instruction in the trade he undertakes to teach him, either personally or by a trustworthy substitute.

He must give the apprentice opportunity to attend divine worship on Sundays and church days, and teach him industry and good morals.

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The apprentice is subject to the master as to a father, and is required to pay full obedience to those placed over him. The apprenticeship, if no longer period is provided for in the indenture, can be terminated at any time during the first four weeks by either party, but the time of trial can not be made to last longer than three months. After the expiration of this time it can be ended by the master (1) when it is learned that the apprentice or those acting for him presented false testimonials, or deceived the master as to the apprentice's obligations to work elsewhere; (2) when it turns out that the apprentice is given to stealing or to a shameful life; (3) when he quits work without permission, or emphatically refuses to perform the conditions in the contract; (4) when he carelessly goes about with fire or light, contrary to the command of his master; (5) when he is guilty of gross misconduct towards his master or those over him; (6) when he willfully damages the property of his master or fellow-workmen; (7) when he leads members of the families of his master or fellow-workmen to commit immoral or criminal acts; and (8) when the apprentice proves to be incapable of doing the work of the apprenticeship, or gets some very bad disease; but in the cases of 1 to 7 the dismissal must occur within one week after the circumstances are learned of by the master.

On the part of the apprentice it can be dissolved after the four weeks or three months of trial (1) when he is utterly unable to work; (2) when the master or those acting for him, or their families, lead their employés, or the families of the same, to commit acts contrary to law or good morals; (3) when the master will not pay his workmen their just wages; (4) when the continuation of the apprenticeship would endanger the health or life of the apprentice; and (5) when the master neglects his legal obligations to the apprentice in respect to health, morals, or instruction, or grossly misuses his authority over him, or becomes incapable of fulfilling the obligations undertaken by him in the contract.

On the conclusion of the apprenticeship the master has to give the apprentice a certificate showing the trade, the length of the apprenticeship, the progress made and the general conduct of the apprentice, which certificate local officials authenticate.

If the apprentice leaves his master without his consent or legal authority, the police, when the apprenticeship is under a written agreement, will compel the apprentice to return to his master and remain with him unless the apprenticeship shall become judicially declared at an end. The demand for restoration must be made to the police, however, within a week after the apprentice runs away. If the apprentice refuses to go back, he is fined up to $12, or imprisoned up to five days. If, during the trial period, the father or guardian of the apprentice, or himself, when of age, declares in writing to the master that he will take up some other trade or employment, the apprenticeship terminates at the end of the period of trial, if not sooner dissolved; but

the apprentice during the next succeeding nine months can not be employed by any other person in the same kind of work without the consent of his former master.

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Claims for damages for failure to serve out apprenticeships are allowed only when the contract is in writing, and proceedings must be begun within four weeks after the dissolution of the apprenticeship. If the apprenticeship be declared at an end by the master because the apprentice has left him, if no set damages be provided for by the contract, the master is entitled up to one-half of the wages customarily paid in the place to a journeyman workman in the trade of the apprentice, from the day following the day of breach of contract up to six months, but no longer. For this amount the father of the apprentice, as well as any fellow-workman who may have urged him to run away, is liable, and also any employer who induced the apprentice to leave his master, or took him after doing so with knowledge of the apprenticeship.

The period of trial is often extended beyond the three months allowed by law. In written contracts provision is generally made for the period of trial, as well as for the general termination of the apprenticeship, but where verbal agreements only are made there is frequently nothing said as to dissolution of apprenticeship, especially where the time required to learn the trade is short or the work easy, as the nearer the apprentice approaches to a mere laborer the less is the disposition of the master to bind him to a fulfillment of his time.

The provision of law that the apprentice on the conclusion of the apprenticeship is to have a certificate from the master of completed apprenticeship and standing is generally only observed when the apprentice expressly asks for it. In many factories it is still customary to give certificates to the apprentices when their time is out, and in some the old custom still exists of making the apprentice satisfactorily execute what is known as the "journeyman's piece" before he can be declared to have learned his trade; but generally the apprentice does not care for it and the master does not give it.

With respect to forcing the apprentice back when he has run away, the report is that it is seldom resorted to, as manufacturers do not care to have mutinous apprentices in their employ.

REGULATIONS REGARDING YOUNG PERSONS IN FACTORIES.

The regulations governing the employment of young persons and children in the factories, which are understood to be also applicable to young apprentices, are, in brief, as follows:

Children under twelve years of age can not be employed, and those under fourteen are not to labor more than six hours a day. Children who have not been to school the required length of time can be used in the factories only when three hours a day of school instruction are guarantied them. Young persons from fourteen to sixteen years old are not to labor more than ten hours a day. They can not begin work before 5.30 a. m., nor continue at it later than 8.30 p. m., and must be given regular resting pauses, this to be,

for children, half an hour; for young persons of twelve to fourteen, one hour at midday, as well as at least half an hour in the forenoon and half an hour in the afternoon. No work is to be undertaken during the pauses. They must be allowed all Sundays and holidays. No child is to be taken who has not a labor card, bearing his name, date of birth, religion, names of parents or guardian, and arrangements stated for receiving school instruction, which card is to be held by his employer, shown to the police whenever requested, and given up when the employment ceases. Before taking any young person into his employ the manufacturer has to give the police notice in writing of his intention to do so, naming the factory, the day on which the child or young person is to commence work, the length of time he is to work, and the pauses he is to enjoy, as well as the character of the work on which he is to be employed. In every factory a list has to be hung up, in a conspicuous place, of the young persons employed, with the commencement and termination of their periods of labor, and the pauses for rest to which they are entitled, as well as the regulations governing employment. The Bundesrath can forbid the employment of young persons at work which is injurious to health, or permit it with certain conditions. The Bundesrath can make exceptions from a strict observance of the regulations as to hours of work in the case of spinning-mills and factories which are run without letting the fires go down, or which, on account of their character, have regular day and night work, as well as with respect to such factories as can not divide their work up into regular periods of similar length, or of such a nature that they can be run only at certain seasons of the year; but in no case is the duration of time employed to exceed thirty-six hours for children and sixty hours for young persons a week; in spinning-mills, sixty-six hours. These exceptions the Bundesrath has to lay before the Reichstag. Besides these, there are some special regulations with regard to the employment of children and young persons in rolling-mills, glass-works, and coal mines.

TRAINING AND SCHOOLING.

Where apprentices are used in the factories they are said to be generally employed in accordance with the regulations of the Empire governing apprenticeship, but it is said that in many instances both employers and employés are unacquainted with these regulations, and that the contracts made, either verbal or written, are more according to the desires of the parties thereto and their sense of natural justice than from any observance of governmental provisions of law, which are often disregarded.

Factory training is, of course, quite different to that prevailing among mechanics. In the factories the apprentices are more apt to get a one-sided training and are not as much under the care of their employers as in the trades. But then, again, in large establishments of certain kinds a bright, dexterous, and perceptive apprentice has an opportunity to learn more different branches of work than he would under a small master. In the factories the apprentices are generally put under the instruction of expert workmen

or bosses, while in the trades they are usually under the direct management of the employing master. At some places in Germany it is the custom for the principal workmen in the factories and industrial establishments to take the apprentices, and to pay them and look after them, and the proprietors have little or nothing to do with them. This, which is said to be in general a bad practice, occurs principally in glass-works, porcelain factories, potteries, certain kinds of machine-shops, and in certain establishments making textiles, cigars, and shoes.

Little is done for the moral training of apprentices. Special arrangements for giving them a thorough industrial training exist in some inspection districts, but are provided for only by establishments that are particularly well conducted, where an approach is made in the work to the production of art objects, or where, for some reason or other, much stress is laid upon the thorough education of the apprentice in his line of work. Such establishments are principally those working in earth in some way, or on stone, or working in metals and manufacturing machinery. It also occurs to some extent among factories in the textile industry, or working up woods, or in polygraphical establishments. At the machine-shops, and works of like character, special workshops for apprentices are met with, where instruction in drawing, construction, etc., is given. In the porcelain industry drawing and painting are taught, and other theoretical and practical knowledge very often imparted. Where musical instruments are made, apprentices sometimes undergo a very thorough training, and in some of the establishments in the textile industry instruction is given in the designing of patterns and the putting of them together. Among the polygraphical establishments very thorough instruction is oftentimes given.

Besides the instruction which apprentices get in the factories themselves, there are particular schools and institutions for imparting to them general knowledge or fitting them for the special vocations they are pursuing, such as night schools, trade and art schools, museums, libraries, and workingmen's clubs, for general or special improvement. With respect to them, there are statistics in the reports for certain districts only.

In the Wiesbaden-Kassel inspection district there are sixty-four of these schools. In twenty-five places attendance on them was obligatory during the year under consideration.

In Wurtemberg there have been 150 industrial fortbildung schools established, attended by about 15,000 young persons from fourteen to eighteen years of age. These were mostly apprentices to mechanics, but there were also many factory apprentices among them. The trade instruction was given by experts in the particular things taught. These schools, the inspector for Wurtemberg says, would be more successful if the hours of labor were shorter.

In Hesse there are 884 fortbildung schools — 771 of the first class, 79 of the second class, and 34 of the third and other classes — with a three years' course of study obligatory on all boys coming from the volks schulen* when

*Volks schulen are public schools, where only the most elementary branches are taught, and which are generally through with by the fourteenth year.

their further education has not been otherwise provided for. Of mechanics' schools there are about 68, at as many places, and in them the instruction is chiefly in constructive, decorative, and industrial drawing. In 57 of these schools instruction is given on Sundays. The attendance is voluntary, but those who go to them are, as a rule, freed from enforced attendance on the fortbildung schools. These mechanics' schools are, maintained by money supplied by the State, and by trades-unions and school fees. In November, 1887, the trade and art industrial school at Mayence was attended by 37 factory apprentices, 20 learning machine building and iron casting, 1 car making, 6 furniture making, 1 the making of metal-ware, 2 jewelry, and 7 lithographic printing. At Offenbach a similar school was attended by ninety young fellows from the factories, who were allowed by their employers two afternoons in each week for the purpose. Most of them were engaged in machine building, lithographing, and engraving.

By fortbildung school is generally meant an ordinary school, usually held in the evening or on Sundays, where the common branches of education are taught to youths who have been compelled to leave school at an early age to go to work, but sometimes instruction in ordinary industrial work, or with reference thereto, is given at them, but a school regularly intended for industrial education is known as a gewerbe schule, that is, industrial school, and when the school is devoted to a particular line of work, or branch of industry, it is often called a fach schule.

In Anhalt there are fortbildung schools in all the towns, twelve with obligatory and three with voluntary attendance.

The city of Hamburg has a general industrial school, and also a school for teaching building, both supported by the municipality, embracing a night school, a school held on Sundays, preparatory schools, and a day school. In the schools held at night and on Sundays apprentices and journeymen have an opportunity to learn languages, arithmetic and elementary mathematics, natural sciences, and free hand and compass drawing. In the upper classes instruction is given in machinery, modeling, and drawing. The instruction on week days is from 5 to 9 p. m., and on Sundays from 8 to 12 a. m., by twenty-nine regular and twenty-four assistant teachers.

The preparatory schools ground the pupils in the languages, arithmetic, drawing, and the first principles of mathematics, in order that students may acquire such knowledge as may be necessary to enable them to participate in the instruction given in the main school. There are four of these schools, and the hours of instruction are like those in the main school.

The day school of the general industrial school is for such persons as have attended the night school, the school on Sundays, the building school, or a like school, and wish to further improve themselves.

In the year 1886 the different divisions of the general industrial school were attended in the summer months by 2,003 students, of whom 1,171 were apprentices and 160 journeymen, and in winter by 2,728 students, of whom 1,585 were apprentices and 317 journeymen.

In the Dusseldorf inspection district, which is one of the great manufacturing centers of Germany, industrial schools are very numerous, and apprentices can get instruction at them in almost every branch of industry, but statistics are not furnished.

Fachschulen, that is, schools for teaching a particular line of work, do not exist all over the Empire, but are met with chiefly in localities in which the branch of industry for which they are especially designed flourishes most, as, for instance, the fachschule for small iron-ware and steel at Remscheid; for casting, at Bochum; for ceramics, in the Kassel-Wiesbaden district; for industrial art, at Carlsruhe; for watch making, at Furtwangen, in Baden; for weaving, dyeing, etc., at Crefeld, and to a considerable extent in Saxony; for brewing and milling, at Worms; for the polygraphical industry, at Leipsic.

A large number of fachschulen are in the Chemnitz district. In the heart of the toy-making district, at Grünhainichen, there is a fachschule for teaching drawing, painting, and modeling to young toy-makers. These "fach" schools are maintained either with public money or by guilds.

The industrial schools can not really be regarded as institutions for the schooling and training of apprentices, as attendance upon them frequently calls for so much time that a young man can not very well serve an apprenticeship in an industrial establishment and attend them also. They are in part designed more for the sons of comparatively well-to-do parents, or aspiring workmen who have undergone a course of factory training and fortbildung school instruction and desire further knowledge respecting the vocation they are following, than for actual apprentices. Workmen of this kind go to the fach schools with much success, and are often materially aided by their employers, who furnish them with the means required.

In a number of places apprentice examinations and exhibitions of work by apprentices take place, spurring them on to active rivalry, and are said to have a good effect on both apprentices and masters. Quite an exhibition was held in Hesse in the summer of 1887 of articles made by apprentices. Some 1,600 apprentices exhibited, most of them, however, belonging to the handicrafts. To 482 premiums were given, 96 of whom were factory apprentices, and 397 were honorably mentioned, 68 of whom were factory apprentices. A large number of branches of industry were represented.

In 3,267 factories in Berlin in 1887, employing 74,819 male workmen, there were 4,970 apprentices. That was 66 apprentices to every 1,000 workmen, or too small a number, the inspector for the district thinks, to supply the bosses, foremen, and skilled workmen needed. Of the apprentices, 1,413, or 40 per cent., against 25½ per cent. in 1883, visited fortbildung schools and 572 fach schools.

In the Hanover inspection district, of 1,370 young persons employed in 187 factories 600 were of an apprentice character.

In the Anhalt inspection district, of 102 establishments, employing 4,716 workmen, 67, with 3,902 adult workmen, have apprentices, while 35 estab-

lishments, with 814 workmen, have no apprentices. The number of apprentices amounted to 575, of whom 205 were under and 370 above sixteen years of age. www.libtool.com.cn

Apprentices, it is the general report, are not employed in too great proportion to adult workmen, except in some particular branches of industry, and by small establishments, where a good deal of hand labor is used. Formerly, says the inspector for the Dusseldorf district, factories, on account of high wages of skilled labor, employed principally apprentices, but now there are a less number of boys applying to be taken as apprentices, and the difference in the rate of wages is no longer great enough to encourage the substitution of apprentices for adult workmen. Then, again, the state of business is nowadays so fluctuating in many branches of industry that employers do not like to be bound to a large number of young fellows by written contracts to keep them in their employ, but prefer to hire adult help, which they can increase or diminish at will, according to the requirements of the markets.

Complaints of the employment of too large a number of apprentices are reported from the districts of Middle and Upper Franconia, Saxe-Meiningen, and Schwarzburg-Rudolstadt as to the glass and porcelain factories; from the districts of Pomerania, Posen, Cologne-Coblentz, Chemnitz, Bautzen, Zwickau, Anhault, and Reuss (younger line) as to the establishments engaged in metal working and machine construction; from the Bautzen district as to the potteries and breweries; from Baden as to the factories making jewelry and the stone works; from the districts of Pomerania, Dusseldorf, Upper Bavaria, Bautzen, Meissen, Baden, and Reuss (younger line) as to the book-printing offices, and also, to some extent, as to the cigar and match factories of these districts. In the small and medium-sized blacksmith shops, machine-shops, and foundries entirely too many apprentices are employed.

Much complaint has been made by the inspectors of the inattention paid in a great many establishments to the proper training of the apprentices. Many manufacturers, instead of entering into a formal apprenticeship agreement, prefer to take youthful day laborers, whom they can dismiss at will. By taking young persons in this way they avoid the obligations of law governing the employment of apprentices, and it is quite customary in the factories to take young persons in this manner, who are, in fact, apprentices in all but name.

APPRENTICESHIPS CONSIDERED BY INDUSTRIES—IRON SMELTING AND CASTING.

At the foundries and furnaces, according to the inspector for the Cologne-Coblentz district, skilled workmen, instructors, and bosses are greatly needed, but they are seldom obtained through formal apprenticeships, as young persons are generally taken and let go under the same conditions as the older workmen. Formal apprenticeships, with their obligations, employers do not like, as the nature of the work performed requires that the passage of the learner from comparatively light to more difficult and more dangerous work

should not be dependent upon length of service, but upon the physical strength, dexterity, aptitude, and reliability of the employé. They are, therefore, indisposed to take apprentices, as it is always doubtful when a young fellow is taken whether he will answer the requirements.

With respect to the youths in the foundries and rolling-mills of Silesia the inspector for that district says that they are first taken to do up packages or employed at some light work requiring a slight degree of carefulness, or used to hand objects and materials to the masons and bricklayers making furnace and other repairs. As they develop in body and show aptitude for work they are taken in among the regular workmen and converted into roasters, smelters, puddlers, forgers, or rollers, and in the course of time made bosses or first men at the furnaces. There are no technical schools for them.

GLASS, STONE, AND PORCELAIN.

Skilled workmen are required in stone cutting and polishing, and in making earthen-ware, glass-ware, and porcelain. This is largely provided for in the porcelain and glass industries by apprenticeships. According to the inspector for the Cologne-Coblentz district, in most of the stone-yards of the district young fellows are taken and employed indefinitely, without any agreement as to learning the trade. There are some exceptions to this rule, however, where the finer kinds of stones are worked up, such as marble, etc.

According to the inspector for the Bautzen district apprentices are taken under written agreement in most of the potteries and porcelain stove factories in his district. When the apprentice pays from $25 to $37 to learn the trade he serves an apprenticeship of three years, but when nothing is paid he has to serve four years. At work the apprentices are so placed that there is one of them between every two workmen, and care is taken that the youngest apprentices get between the best workmen.

In Baden the apprenticeship in the factories making fayence stoves is 3 to 3½ years in length, and no money is paid for learning the trade. For his services the apprentice gets board and lodging and is instructed in all the branches of the trade. In the porcelain and fayence factories it is necessary that a large part of the men employed should be skilled workmen. According to the superintendent of an important crockery factory the decorators, molders, turners, printers, modelers, etc., have all to undergo a formal apprenticeship, and the modelers generally conclude the period of their apprenticeship by studying at some industrial art school, and when men want to be particularly skillful they take a course in painting with some instructor. With apprentices a formal contract is generally made.

In the Wachtersbacher crockery factory, an important one, the apprenticeship of the decorators, turners, molders, and painters is for six years, and for the printers five years. The other laboring people about the factory are also required to be somewhat skilled in their line of work, such as the people in the warerooms—that is, the sorters, exhibitors, and packers, and the men where the burning is done, as the fillers, burners, and glazers. The masters and bosses are taken from among the skilled workmen.

The apprentices in the printing department, and in plaster casting, and among the modelers are turned over to the most experienced workers in the establishment, and it seldom happens that more than one apprentice is taken every year or two. They are kept under instruction a long time, until they learn to work alone. The apprentices among the molders, turners, and decorators are each assigned to a master, with whom and for whom they work just as a mechanic's apprentice does; and in the most favorable cases it is not until the third year of their apprenticeship that they can be left to do anything at all without the master's direct supervision, and, with very few exceptions, the molders, turners, and decorators, even after the completion of their six years' apprenticeship, require constant aid from head workmen.

The apprentices learning to paint are not given over to individual masters, but work together in common in such a number that a head painter always present in the working-room can overlook them. During the first six months of their apprenticeship they are instructed in drawing only, the material all being furnished by the factory. Then they are instructed in handling colors and using the brush, and gradually introduced in this way into the actual work of their trade. As soon as they manifest dexterity work of an easy kind is given them to execute. Their work is interrupted from time to time by instruction and practice in drawing and painting. All the apprentices, even the oldest, have to devote at least every Saturday afternoon to instruction and practice.

All the apprentices get wages from the time of their entrance into the employment of the factory, with the exception of those learning to paint, who do not get anything while undergoing instruction. This, of course, coupled with the waste in material and goods by unpracticed learners, is during the first years of the apprenticeship a positive loss to the factory. The apprenticeship in this factory is formed by written indenture.

In one of the largest porcelain factories of the Breslau-Liegnitz district the apprentices learning turning are first employed a year as ordinary laborers in finishing off articles, such as putting on handles, making mouths, and the like, under the supervision of the master turners, and if they show sufficient aptitude and dexterity at this work, and sufficient bodily strength, they then enter on a regular apprenticeship for four years. The apprentices for painting, when they have had a proper preparation in drawing, go through a five years' apprenticeship, during which time they are instructed by three teachers in drawing and painting. Unlike in most other factories, the apprentices of this factory soon earn more than the so-called youthful workmen, who are paid by the day, as the apprentices oftentimes after being just three weeks at work earn in piecework one-half as much as the adult turners and painters or decorators.

At the celebrated royal porcelain works at Meissen the apprenticeship lasts six years. The apprentices get at first $3 a month for board, which gradually increases until it reaches $18, and is given according to the skill displayed by the recipient. The apprentices have to attend a drawing-

school connected with the establishment, where there are three teachers of drawing and one of modeling. The instruction is given free of charge and lasts from one to three years, according to the requirements of the apprentices.

In the porcelain factories of Saxe-Meiningen the apprenticeship lasts from four to five years, and the agreement is made verbally with the parents or guardians of the apprentices, or, as more frequently happens, in writing. The apprentices are paid full wages, according to the skill and industry manifested by them, but from 75 cents to $1 is deducted from these wages every month as a fee to the master workman under whom they are placed for instruction. In the porcelain factories of Schwarzburg-Rudolstadt the apprenticeship is formed by verbal agreement, and is seldom made in writing. When a written contract is made the engagement on the part of the employer is that the apprentice is to be fully instructed in the trade, and on the part of the apprentice the engagement generally made in contracts of apprenticeship as to length of apprenticeship, fidelity to employer, etc., and to work after the termination of the apprenticeship at least one year in the factory and for a year after this not to work in any other porcelain factory of Thuringia. Most of the apprentices get wages after a few weeks, being paid one-half of the regular wages during the first six months of the apprenticeship, then three-quarters, and after the completion of the first year the full wages of what is known as a youthful laborer, that is, a boy from fourteen to sixteen years old working by the day, which is about $1 a week. In some factories the apprentices are paid by the piece. The length of the apprenticeship is from three to four years, generally four years. During this time the apprentices have to render certain menial services, such as getting the colors for the men, carrying water, and the like. The apprentices are put under the master workmen and decorators for instruction, who are mostly very skillful men, who also give the apprentices instruction in drawing and modeling at night, or on Sundays. Some of the manufacturers provide private teaching for their apprentices, while others do not furnish any means of instruction outside of the factory.

In glass manufacturing the taking of apprentices is also necessary and customary. At the glass-works at Ehrenfeld, in the Cologne-Coblentz inspection district, the apprentices from outside the town are taken under written agreements with their parents or guardians, while some of the people living in the place are taken on verbal agreements similar to the written ones. The apprentices are taken by the year, so that if they do not answer they can be sent away, as it generally takes a year or two to ascertain whether a young man is capable of learning the trade.

In the Count-Schaffgot's Josefine Glass-Works at Schrieberhau, in the Breslau-Liegnitz inspection district, a boy, before he is taken as an apprentice to learn glass making, must serve one year as a glass-carrier in order to show whether he possesses the requisite capability. Then a written agreement is entered into. A similar procedure is observed in the glass-grinding,

cutting, painting, and gilding departments, except that in them a trial period of only four weeks before the apprenticeship is insisted upon. In glass-grinding and cutting the apprenticeship is four years, and in painting and gilding five years; but it can be shortened a year by the payment of certain amounts.

When the apprentice has served out his time he is given a piece of work to do in his branch by an examination committee, and if he satisfactorily performs it he is declared free and given a certificate to that effect; and only workmen holding these certificates are employed at the works. He is now a journeyman, and if he desires to rise higher and become a master workman he has to work four years longer at the works, when, upon application, he will be given by a committee a difficult piece of work to do, and if he satisfactorily executes it they declare him a master workman and give him a certificate to that effect.

A drawing-school is connected with the establishment, which the apprentices have to attend.

At glass-works in the county of Glatz no apprentice is taken until he is eighteen years old, after he has learned all the ordinary work of the trade, and the apprenticeship is then for three years. About two hundred glass-makers are employed at these works, and since the year 1810 only workmen have been employed by the works who have passed through an apprenticeship at them.

In the Minden-Münster inspection district, where there is a great deal of concave glass made, apprentices are generally taken under written agreement for from three to four years, and make, gradually, from about 18 to 25 cents a day in the first year to from 25 to 32 cents a day in the third year. The apprentice is bound in the sum of $25 to $75 for a faithful performance of the contract. At the works making table glass no youths are employed, as the work is too difficult for them. Glass-blowers are obtained by taking and training the best men who apply for work.

In the Dresden inspection district written indentures are seldom made. In glass-grinding the apprenticeship runs from three to four years, and in glass-blowing, according to aptitude.

Among the glass-works of Schwarzburg-Rudolstadt written indentures are little or not at all customary, as the making of large mirrors prevailing there requires a physical strength which apprentices do not possess; but in the "muslin" glass factories of Baden written indentures are the rule.

METALS.

In this group machinery is employed to a great extent, and where it is used there is little demand for skilled labor. All the older establishments in the production of objects of an artistic nature know full well by long experience the value of dexterous and well-trained labor, and take care to provide for it by taking promising boys as apprentices and drilling them into experienced workmen, whom they sometimes send, at certain hours of the

week, to the industrial schools to learn drawing, modeling, and the like. But a great many employers do not take this trouble, and simply take young fellows into their employ because they are cheap, and let them get a one-sided training or no training at all. There is always a lot of young fellows from the country, who are willing to work at anything at which they can earn a little something without any regard to the future and the acquisition of a good trade.

In the copper-mills of the Bautzen inspection district the coppersmiths pass through a regular apprenticeship, especially when they intend to become members of the trades-union, but even in the large mills not more than two apprentices a year are taken. As a rule the apprenticeship begins as soon as the boy has left school, if sufficiently developed physically. It has also recently come to pass that older persons, without entering into a formal apprenticeship, have learned the trade.

At the brass foundries, according to the inspector for Baden, the apprenticeship is three years, under written agreement. During the apprenticeship the apprentice receives from 12 to 35 cents a day, but less when board and lodging are given. The training, which is for that of a molder or model-maker, or as turner and smith, is the ordinary. There is rather a lack than a superfluity of apprentices.

In the manufacture of tin-ware skilled labor is required, and apprenticeships for three years under written agreements are served. They learn but one branch of the trade, and generally get from 75 cents to $2 a week as wages. Apprentices are also taken in the establishments making scythes, but no written agreement is made.

MACHINES AND INSTRUMENTS.

In the machine-shops skilled labor is largely required. In the larger works the apprentices are employed in a very regular way, mostly under contract; but in the smaller establishments there is not as much attention paid to them as there should be, and among them either no apprentices are taken, or, on account of the cheapness of their labor, too many in proportion to the adult workmen employed. In the medium-sized establishments in this line there is a disinclination to take apprentices, and either mechanics or practiced workmen who have been trained in other establishments are taken, as there are a good many applications for work by workmen from small shops. Large establishments are indisposed to take such mechanics, and are said to be doing so less and less.

In the machine-shops and such works apprentices are generally taken either for a particular kind of work, such as smith, turner, planer, etc., or are trained principally for this work, and then in the last year of the apprenticeship introduced to machine building or made mechanicians of, and intrusted with work in all divisions of the factory.

The apprentices are generally placed under the supervision of a head workman, foreman, or boss. In the well-known Marienhütte, at Kolzenau.

they are usually put in charge of a particular workman. The agreement is in writing, and the apprentices must all attend a trade school run by the works.

At the Wilhelmshütte, in the same district (Breslau-Liegnitz), the property of an incorporated company for machine building and iron making, the apprenticeship is for four years, by written indentures. The apprentices receive neither board, lodging, nor clothing, but are paid such wages as the managers of the works think just. Each week 12 cents are withheld from the wages as security against the departure of the apprentice, and if he leaves the works before the apprenticeship expires he forfeits what has thus been deducted from his wages and $12 in addition; but if he serves out the apprenticeship, what has been weekly withheld from him is paid to him in a lump sum, with interest. When the apprenticeship is dissolved on account of bad health the $12 penalty is not exacted. The small sums taken weekly from the wages of the apprentices amount, with interest, to about $25 by the time the apprenticeship expires. This money the young journeymen often use to get elsewhere, and work a few years in other workshops, when they generally return to the Wilhelmshütte and make splendid workmen. The workmen all keep an eye on the apprentices, both within and without the workshops, and the apprentices are instructed in all the branches of work of the company, passing gradually from one grade of work to another.

Special attention is given to the training of apprentices in the Deutzer gas-motor factory, where ten to fifteen apprentices a year are taken. The length of apprenticeship is four years, and the instruction is given by the bosses and elder foremen. To the aptest of the apprentices opportunity is given to learn all the branches of work carried on in the establishment. In the evening the apprentices have to attend an industrial school connected with the factory. Here the amount withheld weekly from the apprentice's wages is 25 cents, and if he quits the factory while apprentice he not only loses this money but is obliged to pay back all that he has received as wages, as wages are paid with the understanding that the apprentice will work his time out.

The training of the apprentices in the railway repair shops is said to be admirable, and they are given a much more general training than occurs in many private establishments, as they generally get a more or less one-sided training in private establishments. At the large shops of the State railways not more than eight to ten apprentices are taken a year as a rule. They must not be less than fourteen years old, and not more than sixteen, though in exceptional cases they may be up to eighteen years old, and the sons of the ordinary railway employés and permanent workmen are taken in preference to others. During the apprenticeship, which is four years in length, they live with their families, or in good families of the place of work. They are paid small wages, but not up to the lowest wages earned by a journeyman in their line of work, and of these wages a tenth is withheld until the conclusion of the apprenticeship. Grave misconduct on the part of an apprentice shuts him out from future employment in any of the workshops of the State.

The apprentices are expected to work ten hours a day, but do not work at night or on Sundays, or on extra time. Besides the regular employment they receive school instruction twice during the week and on Sundays. The aim of the school instruction is to ground them in such subjects as relate to their trade.

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The inspector for the Chemnitz district says that in machine building and metal working the apprentice is generally taken on a four weeks' trial and four years' apprenticeship. The employer generally pays a weekly wage, which rises as the apprenticeship continues. On the average this is about 50 cents a week the first year, about 75 cents a week the second, $1 the third, and $1.25 the fourth year. Of the wages about 10 cents a week are withheld until the expiration of the apprenticeship, when the accumulation is given to the apprentice. Oftentimes the agreement is made that if the apprentice is diligent at his work and proper in his conduct part of the accumulation will be given to him before the end of the apprenticeship, and sometimes it is promised that he will be paid by the piece, say five-sixths of the full wages paid to a journeyman. One large establishment in the Chemnitz district requires a five years' apprenticeship, while other establishments have only three years.

Boiler-makers and monteurs are generally taken from among the trained machine smiths of mature age. For monteurs only the best workmen are taken. Tin workers and painters are seldom trained up in the machine-shops, but are generally got from among mechanics.

In sewing-machine manufacturing a good deal is done by machinery, and the work is learned by apprentices to a slight extent, and less and less all the time.

In the making of musical instruments skilled labor was almost exclusively employed in former times, and hands were got from among the joiners or metal workers, but in this branch machinery has also made such great strides that a great deal of unskilled labor is now employed; but in the large factories making pianos and organs a large amount of skilled labor is still required, and it is only where cheap articles are made that ordinary labor is used. The apprentices serve about three years under written agreement, and they get either free board and lodging, and toward the end a slight remuneration, or a gradually increasing wage of 25 to 50 cents a day.

In the Plauen district no apprentices are taken, as a rule, by makers of musical instruments, although there is need of skilled laborers in a high degree, but this is made up for to a large extent by the training children get at home on such work.

In watch manufacturing skilled labor is required where complete watches and clocks are made. The use of machinery, however, makes practicable the employment of young and unskilled day laborers in place of the old-time apprentices.

Eyeglasses, telescopes, opera-glasses, and other optical, physical, and mathematical instruments, as made by large establishments, require a large

percentage of skilled workmen. At a large factory at Rathenow the apprenticeship is three years. For the artistic work on opera-glasses, such as enameling, gilding, varnishing, laying on horn and mother-of-pearl, etc., the few skilled workmen required are obtained from industrial art establishments.

JEWELRY.

In the jewelry business trained help is very necessary. In this industry it is very customary in Baden to take apprentices under written agreements, the length of apprenticeship for boys being five years and for girls three years. During the apprenticeship the boys get gradually from 75 cents to $1.75 a week, and the girls from 75 cents to $1.25. The apprentices are generally prepared for a particular branch of work, such as jewelers, engravers, setters, etc. The apprentices nearly all attend industrial schools, and the most talented of them go also to the industrial art school at Pforzheim.

At a large jewelry factory in this city the apprentices are taken for four years, and are paid gradually from 25 cents to $1.25 a week. The apprentices are put under the direction of the workmen of the factory, and written indentures are always made.

CHEMICALS.

Beyond the masters and foremen, who are intrusted with the care of the apparatus, and who belong to the category of mechanicians, coppersmiths, and boiler-makers, the chemical works do not require skilled labor.

TEXTILES.

In general in many factories of the textile class there is but slight need of skilled labor, if by skilled labor is understood more than ordinary ability to properly tend a machine. To be the common operator of a machine requires no apprenticeship.

Silk weaving and silk-ribbon weaving are learned in four to six months by new hands, mostly young persons. In the bleacheries, dye-houses, and printing works it is only the designers and engravers who require special and systematic training. Where hand labor is done the old system of apprenticeship still prevails.

PAPER AND LEATHER.

In the paper factories there is only a partial need of skilled hands. This want, according to the inspector for Baden, is supplied in well-conducted establishments by taking as workmen young fellows, mostly the sons of workers in the factories, who have had a good school education, and gradually introducing them into the different kinds of work. A regular apprenticeship indenture is not made in these cases, and the boys are taken with the understanding that they can be discharged at any time on fourteen days' notice. Oftentimes boys are taken to do cleaning and the like and allowed from time to time to learn how to run the machines, but they do not make workmen for the higher employments.

In wall-paper manufacturing apprentices are little used.

In the leather industry apprentices are seldom taken. Extensive use of machinery has made the use of unskilled labor in this branch practicable. But some of the factories employ regular apprentices, thus in the kid-leather factories of the Magdeburg district an apprenticeship of four years is customary, under written agreement. During the apprenticeship the apprentices work by twos and threes under the superintendence of a master, and are paid about $1.25 to $2.25 a week.

In the factories at Offenbach, Hesse, making fine leather articles, apprentices are taken for from three to four years. They get at first about 30 cents to 50 cents a week, which is generally increased 10 cents at the end of every six months. Sometimes the agreement is in writing. The best training is in the small establishments, where the proprietors work themselves. A large part of the factories making fine leather goods turn the apprentices over for instruction to workmen working by the piece, by whom they are paid, and the manufacturers trouble themselves little about them, and if the workman quits the factory he takes the apprentice with him, but the conscientious workmen will not permit an apprentice to be given to an incapable workman. In such cases no written agreements are made, and proprietors of the factories oftentimes do not know anything about the apprenticeship. An apprentice generally works with the same workman during the whole of the apprenticeship, and learns only his branch of work. The larger the factory the more one-sided is the training of the apprentice.

In tanning it is not customary to take apprentices.

WOOD-WORKING.

Among furniture-makers and fine joiners there is a good deal of complaint of lack of trained workmen and skilled foremen. Their men they get in part from the trades, but some of the factories, especially the prominent ones, train up apprentices under written agreements comprehending a three years' apprenticeship. Carvers, turners, and upholsterers are mostly trained by the bosses. In general work, however, the apprentices are frequently trained by the elder experienced workmen. The large wood-carving establishments of Baden and other districts are accustomed to take apprentices for three years under written agreements. The apprentices, besides visiting a fortbildung school, often attend a carving school.

In the Potsdam-Frankfort-on-the-Oder inspection district the factories making furniture and building articles train up apprentices as mechanics under written agreements, but seldom make useful joiners of them. These factories employ a number of wood-carvers, and, in consequence of the prevailing taste for German renaissance furniture, have a good many apprentices, who are being trained to do fine work. In one of these factories, says the inspector for the district, he found a particular division of fifteen such apprentices under one master.

In toy manufacturing apprentices are taken under written agreements and are instructed by masters from two and one-half to three years.

MILLING AND BREWING.

At the mills apprentices are taken generally only by the smaller ones. Where there is an apprenticeship it runs from two to three years.

In the large breweries apprentices are the exception. They take more what is known as "volontairs," that is, young men occupying an independent position and working without pay, or paying for their instruction. The best training is given in the small breweries, as the apprentices can learn in them by degrees all the branches of the business, and besides are more under the eye of the brewing master, who is frequently at the same time the owner or lessee of the brewery. In the small breweries the number of apprentices in proportion to the number of actual workmen is oftentimes not inconsiderable. In the large breweries, on account of the large use of machinery, skilled labor is needed only for certain purposes. Certain brewers demand of their bosses and foremen a long practical experience only, but others, where there is great responsibility in certain operations, go further and demand a theoretical education, for which there are special institutions and brewing schools.

In the Potsdam-Frankfort-on-the-Oder inspection district the beer breweries, 50 per cent. of whose workmen are skilled men and 2 to 3 per cent. apprentices, ask $300 to $375 for taking an apprentice, and he has to serve four years under written agreement. Board and lodging are given free. The apprentices are given a thorough and systematic training in all branches of the work.

CIGAR-MAKING.

Respecting the cigar factories the inspector for the Minden-Münster district says that he knows of but one establishment in his district in which written indentures are made. The apprenticeship used to be generally for four years, but for the rollers and wrapper-makers is now oftentimes only two or three years in length. After a service of two years the wrapper-maker can enter on an apprenticeship for cigar-making, and receives in the first year 75 cents for every 1,020 cigars; and at the end of this year, if he does satisfactory work, he is regarded as a journeyman, and is paid the piece wages of a full workman.

In the Bautzen inspection district the apprenticeship is as a rule formed by written agreement and lasts not less than three years. In small establishments the apprentices live in the families of their employers, and when board and lodging are not given they generally get, after four weeks, about 75 cents or $1 a week, and afterwards $1.25 to $1.50. In the large factories instruction is given by the foreman, and in the small ones by the employers themselves. There are about ten apprentices to every hundred workmen.

In Baden, where there are a great many cigar factories, it is customary for the apprenticeship to be made in writing for three years, mainly with the object of keeping the apprentices in the factories.

In Hesse the apprentices in the small establishments are taught by the work-masters, in others by workmen working by the piece, who, in well-conducted factories, are paid something extra for this service. In some factories the apprentices are not paid anything the first few weeks of the apprenticeship, in some they work a few weeks in day wages and then by the piece, and in some others wages by the piece are paid from the start. The agreement is sometimes made in writing, sometimes verbally, and sometimes no agreement at all may be said to exist.

SHOE MANUFACTURING.

The shoe factories, in consequence of the free use of machinery and the way work is done, have little need of well-skilled labor, and hands are trained for special lines of work only; but some factories, especially those in Hesse, take apprentices for almost every kind of work. Among the cutters the length of apprenticeship is generally three years, and they get at first about 75 cents a week.

LITHOGRAPHING.

In the polygraphical establishments skilled labor is generally required, and as a rule formal apprenticeships are formed, running from three to five years, but mostly four years. The aim is to perfect hands in setting up type, printing, drawing, painting, engraving, etc., and in the larger establishments is generally for only one branch of work; and in the very best establishments what are known as volontairs are taken, who are already trained in type-setting and printing and wish to learn all branches of the business. The character of the instruction and by whom imparted is determined a good deal by the size of the establishment, and is given by experienced men.

The length of apprenticeship in the lithographic and chromo-lithographic works is five years. In small establishments the training occurs largely under the eye of the proprietors, but in the large concerns it is attended to by the director, or the best workmen. The proprietors of the large establishments are oftentimes not lithographers themselves. The apprenticeship begins with easy work and passes on to difficult. In printing from stone the length of apprenticeship in Baden is from three to four years under written agreement. During this time the apprentices learning lithographing receive from 50 cents to $1.75 a week, while the apprentices learning printing get $1.25 to $2.50 a week. In the large establishments the training is very systematic and many-sided in character, and some of them can be considered as a scientific school, but in the small concerns the training is very deficient sometimes.

BOOK-PRINTING.

The book-printing establishments of large size are not given to employing apprentices to any extent, but the small concerns take a good many. The presses and machines are run mostly by female operatives under male superintendence. According to the inspector for the Potsdam-Frankfort-on-the-Oder district the training of apprentices in book-printing is largely in

the hands of printers, and little controlled by the employers. He says that this is bad for the apprentices in various ways, and that it has a demoralizing effect on their morals, and he attributes the spread of social democratic ideas among printers largely to the influence of the old hands over the young apprentices.

FEMALE OPERATIVES.

On the whole there was an increased employment of women in the factories during the year. With respect to the influence of factories upon the morals of female operatives the inspector for the Kingdom of Wurtemberg says that he has repeatedly had opportunity to ask local officials of large communes in the neighborhood of factory towns what influence working in factories had upon the women of their communes going every day to the towns to work, and he has always been told that factory employment is a welcome and very necessary source of support for many families. It is repeatedly affirmed, he says, that no difference in morals is to be observed between an agricultural and an industrial population, and he thinks that it is not the kind of employment, but the general character of the people of a locality that determines their moral character.

In the cities of Aix-la-Chapelle and Burtscheid, at the close of the year, there were 7,548 females employed in the factories; 4,750 in the textile factories, 994 in the factories making sewing needles, 1,477 in the cigar factories, and 327 in other branches of industry. Of these women quite a number live so far from their places of work that many of them get home but once a week, and are from home from Monday morning to Saturday night. They largely sleep at night in their work dresses in the factories, in the work-rooms on the cloth, or even upon the loose wool and such things, which, the inspector remarks, is to be decidedly disapproved of, as well from sanitary as from moral considerations.

A much more unsuitable sleeping place the inspector found in a cloth factory, in the county of Aix-la-Chapelle, where the female operatives had a room whose door could not be closed, containing five double beds and partly filled with empty and filled carboys for acids and a variety of other things, which, in consequence of loose flooring, let in the fumes from a dyeing-room below. On the other hand, other factories are said to have provided exemplary sleeping accommodations for their employés.

Concerning work dangerous to morals the inspectors reported at length last year. Reports this year from a number of districts show a greater or less improvement. The inspectors pay much attention to this matter by insisting upon the different sexes working apart and having different rooms to rest in, etc., and are getting a good many evil conditions done away with.

Much attention has been paid in recent years to having different dressing-rooms for the men and women and different wash-rooms, etc., and different places of the kind for the two sexes are being insisted upon as much as possible, and new factories are required to be constructed with this end in view. In former times it seems that all used the same resorts.

Superintendence of female workers is done principally by men, superintendence by women being the great exception and very rare. Manufacturers are opposed to women superintending women.

Working at night by women experienced a decrease in some districts. The tendency is to do away with it altogether. There is no general disposition among manufacturers to employ women chiefly, though the use of female labor in many branches of industry is indispensable and their employment in some districts on the increase. Some employers prefer women to men, not only on account of the lower wages paid, but because of their steadiness, sobriety, and docility, and are using women where formerly men were employed. Thus in the preserving factories of Brunswick the making of the tin cans and the soldering of them is done by women, and in a large sewing-machine factory of this district women are employed in the varnishing department.

In the porcelain factories of Upper Franconia not only have women for years served as aids to the turners, but been employed in molding, and it is not improbable that with the increasing substitution of mechanical power for manual labor and the decreasing prices the number of female molders will increase.

In the watch industry in Wurtemberg the example of the United States is being imitated, and women more and more employed.

Some of the German factories have arrangements for the instruction of their female employés in house-work, needle-work, and the like, as has been mentioned more at length by me in previous reports.

WORKING-MEN IN GENERAL.

Some inspection districts, such as Berlin-Charlottenburg, Treves, Aix-la-Chapelle, Oppeln, Merseburg-Erfurt, Hanover, Schleswig-Holstein, Dresden, Leipsic, Bautzen, Baden, Oldenburg, Altenburg, and Schwarzburg-Rudolstadt, showed a considerable increase of workmen, others no material change, while a decrease was reported in a few instances. Sometimes the changes are due to a difference in the manner of enumeration, and, therefore, more apparent than real, as the understanding of what is a factory in an industrial sense and for statistical purposes is not always clear and uniform among the inspectors, and undergoes, even in one and the same district, at times a change, so that workshops and factories come under inspection which had existed a long time without being regarded as subject to visitation; and, on the other hand, some places previously under inspection came to be considered as not being factories and not subject to visitation.

Berlin-Charlottenburg showed an increase from 4,033 factories in 1886, with 89,618 male and 30,135 female workers, to 4,315 factories in 1887, with 94,901 male and 30,224 female workers. In the ten years from 1877 to 1887 there has been an increase of 1,054 factories or industrial establishments in the city of Berlin employing from ten to fifty persons, while those having only five hands decreased from 33.2 per cent. of the whole number to 25.5 per cent.

There was no material change in economical conditions among the working people. Their condition the inspectors generally reported as satisfactory, favorable, or good, and some few of them as better.

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WAGES.

Wages, according to reports from the inspection districts of Pomerania, Hanover, Hohenzollern, Lower Bavaria, Middle and Upper Franconia, Leipsic, Chemnitz, Plauen, Saxe-Altenburg, the two Reusses, Lubeck, Bremen, and Hamburg were in general the same as previously. In the inspection district of East and West Prussia the wages of day laborers rose. In Hanover higher wages were paid to some extent. In Wurtemberg, also, wages rose somewhat in certain branches of industry. The flourishing watch industry in the Black Forest attracts more and more scattered labor from the valleys to points where large factories are located, and the wages, especially for young persons, have become materially higher, so that young people sixteen years old make considerably more than a subsistence.

In Baden quite an advance in wages took place at some places, especially at points where the large number of people employed led to higher rents and the like. Only men were affected thereby, however, as a rule, the women seldom receiving any increase. With this exception, wages remained the same on the whole, except that especially qualified workmen get more. The increased use of machinery makes the demand for experienced labor less and less all the time.

In some of the industries of Hesse the situation of the laboring people was very unfavorable. Wages sank not only in the factories making pocketbooks, portfolios, and the like, and among belt-makers and lithographers, but an increased employment of women in the cigar factories had an unfavorable effect upon the wages of male cigar-makers. Employés in the cigar factories make about one-third less than they did some years ago.

In Hohenzollern and Schwarzburg-Sondershausen some of the women doing sewing, knitting, and crocheting in house industry are miserably paid, and have to work from early in the morning until late at night to earn 25 cents a day.

HOURS OF LABOR.

The length of time worked remained pretty much the same. This was fully set forth in my report for 1885. With respect to resting pauses, detailed information is given by the inspectors for the Dusseldorf and Middle and Upper Franconian districts. In the Dusseldorf district the factory operatives get, as a rule, from one hour to an hour and a half for rest at midday, and from a quarter to half an hour in the forenoon and afternoon. In some spinning-mills, however, working thirteen hours a day, the midday pause, to save lighting, was fixed at half an hour, and the forenoon and afternoon pauses at one-quarter of an hour each, without the operatives or inspector being able to effect a change.

According to the inspector for Middle and Upper Franconia, the mid day pause in his district is everywhere an hour, except that one establishment in Nuremberg allowed one hour and a half, and six others an hour and a quarter. In the matter of forenoon and afternoon pauses, 20 per cent. of the factories allow a quarter of an hour and 47 per cent. half an hour, while in nearly all the textile factories no forenoon or afternoon pause is granted. In many industries, especially in Middle Franconia, where work by the piece prevails, the working-men do not take long pauses.

SUNDAY LABOR.

In the Hohenzollern district but little work is done on Sundays, and no change took place during the year.

At Chemnitz working in the forenoon on Sundays in the glove and stocking factories, etc., is very general during busy seasons.

In Leipsic and its neighborhood work is customary on Sundays when the fairs are in progress, but the workmen use the following Monday as a holiday. On this account many employers do not work on this day, while others close their factories at noon.

For Wurtemberg the report is that work is not done to any extent on Sundays in the factories.

STRIKES.

Strikes were rare and were mostly made for increased wages. Relations between employers and employés are generally reported by the inspectors as good or satisfactory, and even, in some cases, as patriarchal.

HOUSING.

The working people, taken as a whole, are badly housed. In general there is a great lack of suitable tenements for them, and overcrowding in miserable old buildings is the rule. The inspectors report that during the year a number of manufacturers put up dwelling-houses for their people, which they let to them free of rent or on advantageous terms; but this is done, I am inclined to think, rather at small, out-of-the-way places, to attract laborers, than in populated centers. On the homes of the German working people I have reported before now. It does not pay capital to build for the poor.

A large manufacturer who died at Cologne a couple of years ago left to that city 100,000 marks ($25,000) for the erection of houses for working people, after having put up during his life houses for one hundred and twenty-nine families.

In the Middle and Upper Franconian district twenty-one of the factories visited by the factory inspector for the district had dwelling-houses for their working people, let to them wholly or in part free of rent.

The isolated situation of the glass-works in the Bavarian forest compels the proprietors of them to provide places of abode for their workmen. These differ considerably in character, the tenement of a glass-maker, con-

sisting of two or three rooms, presenting a cheerful and orderly appearance, while the families of the grinders have generally but one room, of dirty and disorderly aspect, most of their dwelling places being in a very dilapidated condition. This state of things, the inspector says, is due to the inhabitants themselves, and not to their employers. Any one on first seeing these houses is tempted to conclude, he remarks, that the most abject poverty prevails among their inhabitants, but when he gets a glance at their meals and into their store-rooms he finds out that it is bad housekeeping that is the cause of it all.

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In some cases the inspector found that employers crowded their work-people together in their houses and compelled two or more families to live together in one large room.

In the Bautzen and Plouen districts there is said to have been considerable increase of working-men's dwellings. In Baden quite a number of working-men's dwellings were put up in 1887 in different parts of the duchy, the first that had been built for a number of years.

In Wurtemberg various building companies, organized some years ago to put up dwellings for working people, have met with little success, because they did not build cheap enough. The working-man takes forlorn-looking, cheap, old rooms in preference to nice ones a little dearer.

DRINK.

Much complaint is made from various parts of the Empire of the immoderate use of strong drink by working-men, especially the younger ones. Employers are endeavoring to check this evil by forbidding the drinking of brandy in the factories, and by trying to accustom their hands to other and refreshing drinks, such as coffee, tea, chocolate, and light beer, and by enabling them to get cheap but good and nourishing food. To keep their men from brandy a good many establishments are having coffee and other things served to them at a slight cost or free of charge. Some furnish light beer.

JAMES H. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Mayence, February 13, 1889.

THE UNITED KINGDOM.

REPORT OF CONSUL-GENERAL WALLER, FOR THE YEARS 1887 AND 1888.

GENERAL TRADE REVIVAL.

The indications of a general revival of the trade and commerce of the Kingdom, to which attention was called in the last annual consular report from this office, have been more than verified. Official and other returns clearly show a decided improvement in both the volume and character of

the business done in 1888 over the year previous, and this increased prosperity, which promises to continue for some time to come, is not confined to any particular department of the trade or industry of the Kingdom. This fact is shown by the statistical returns hereinafter given of exports and imports, of railway traffic, of agriculture, of finance and shipping, especially when such statistics are for the calendar as well as the fiscal year of 1888; and it is encouraging to observe that the prosperity of the year just ended is apparently due to legitimate trade and not to speculation, this improvement, although general, is more marked in some branches of trade than in others. This is notably so in ship-building, the total tonnage of ships built in 1888 never having been exceeded, except in two instances, in the whole history of the industry. The increase in the value of imports was 3½ per cent., and of exports 4½ per cent., over the year previous. The agricultural returns for 1888, although not as satisfactory as was anticipated in the earlier part of the year, considering the total produce and price obtained, are better than those of 1887.

LOCAL GOVERNMENT.

The local government act for England and Wales was the most important legislation of the year. This act is regarded as the first installment of local administrative reform. It is intended to bring under one central county authority all local matters. Hitherto county affairs have been managed by justices of the peace, appointed for life by the Crown, the government of large towns being mostly in the hands of elected councilors of a municipal corporation. The act creates an entirely new elective body, to be called the county council, and vests in it the administrative (not the judicial) duties of the justices of the peace—such as the levying of a county rate, the maintenance of shire halls, lunatic asylums, industrial schools, roads and bridges, and revision of the Parliamentary Register. The council will also take additional duties, such as the appointment of coroners, while the management of the county police will be vested in a joint committee of the council and the justices of the peace. Provision is made permitting various imperial authorities to transfer to the county councils any administrative duties of a local character.

The members of the council are elected for a term of three years by the occupiers of any building, or of land of the annual value of £10. The councilors elect aldermen for the term of six years, either from their own body or without, the number of aldermen not to exceed one-third of the number of councilors, one-half their number retiring triennially.

In addition to the council for each of the fifty-two counties, sixty-one boroughs, which have a population of 50,000, are made county boroughs, and are constituted in the same manner as the county councils.

Hitherto the imperial treasury has contributed to certain local expenses, such as disbursing half the pay and clothing of the police, but the county council will in future take this burden, and to meet this and other expenses

the imperial treasury assigns to the counties 40 per cent. of the tax paid on the grants of probate of wills and letters of administration, also the revenue derived from liquor and other licenses. It is calculated that this arrangement will lighten the county rate at least 3½*d.* on each £1 of the assessed value of a holding.

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The act makes London a county of itself, with 118 councilors and 19 aldermen. The metropolitan board of works will cease to exist on the operation of the act (April 1, 1889), and their duties will be performed by the new council. The act deprives the corporation of the city of London of the appointment of several officials, such as the judges of the city civil courts.

The councils will have power to borrow money for consolidating the county debt, purchasing land for administrative buildings, etc., and permanent works.

No person will be subject to a fine for non-acceptance of office, as he is under the municipal corporations of large towns. It is proposed by a subsequent act to make all local sanitary authorities subcommittees of the county council.

IMPORTS AND EXPORTS.

The total value of goods imported into the United Kingdom in 1887 was $1,811,137,820, an increase of $61,820,460, or 3½ per cent. There was an increase in wool amounting to $10,000,000, but a decrease in the weight of 16,500,000 pounds. An increase in corn of 15,000,000 cwts. in weight and $25,000,000 in value; in raw cotton, 700,000 cwts. in weight and $10,000,000 in value; and in coffee of 40,000 cwts. in weight and $5,000,000 in value. But there was a decrease in tea of 9,000,000 pounds in weight and $7,500,000 in value.

The total value of exports was $1,403,815,805, an increase of $60,480,720, or 4½ per cent. The increase in the value of British and Irish produce exported was $44,907,160, or 4¼ per cent., and of foreign and colonial produce $15,573,560, or 5½ per cent., compared with 1886. The principal increases in British and Irish produce occurred in cotton manufactures, increase of $10,000,000 in value; iron and steel manufactures, $15,000,000 in value; woolen manufactures, $5,000,000 in value; and machinery, $5,000,000. In foreign and colonial merchandise exported the principal increases occurred in raw cotton, $10,000,000; and wool, $10,000,000. There was a decrease of $3,000,000 in the value of tea and $2,500,000 in the value of raw hides exported.

Aggregate imports into the United Kingdom in 1887.

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Description.	Quantities.	Values.
Animals:		
Oxen, bulls, cows, and calves.....number...	295,961	$22,193,925
Sheep and lambs.....do.....	971,404	8,229,195
Bacon and hams.....cwts...	3,927,602	43,668,880
Beef.....do.....	874,248	9,056,185
Bones (except whalebone).....tons...	59,231	1,568,825
Brimstone.....cwts...	661,158	785,940
Bristles.....pounds...	2,892,073	2,025,875
Butter and margarine.....cwts...	1,513,134	40,051,870
Margarine .....do.....	1,276,140	19,401,635
Candles .....do.....	73,156	797,655
Caoutchouc.....do.....	237,511	13,522,825
Cheese .....do.....	1,836,789	22,571,910
Chemical manufactures and products.....	.....	6,566,465
China, porcelain, and earthen-ware.....cwts...	157,270	2,688,136
Clocks	.....	1,991,295
Cocoa.....pounds...	27,352,568	4,548,945
Coffee .....cwts...	1,045,698	21,241,990
Confectionery and succades.....do.....	374,695	4,319,340
Cereals and flour:		
Wheat .....do.....	55,802,518	106,689,590
Barley.....do.....	14,239,566	18,807,485
Oats.....do.....	14,462,943	17,441,645
Maize.....do.....	31,167,325	37,741,360
Other kinds .....do.....	6,334,360	9,274,340
Flour of wheat.....do.....	18,063,234	50,139,420
Flour of other kinds.....do.....	895,961	1,360,125
Total of cereals and flour.....do.....	140,965,907	241,453,965
Cotton:		
Raw.....do.....	15,994,976	200,782,280
Manufactures.....do.....	.....	11,404,830
Drugs:		
Bark (Peruvian).....do.....	143,177	3,308,410
Opium .....pounds...	654,122	2,114,600
Unenumerated	.....	3,230,825
Dyeing or tanning stuffs:		
Cochineal, granella, and dust.....cwts...	10,089	313,750
Cutch and gambier.....tons...	27,361	3,307,985
Extracts	.....	1,973,870
Dyes from coal tar.....	.....	2,714,030
Indigo.....cwts...	76,700	8,365,335
Madder, madder root, garancine, and munjeet.....do.....	19,347	120,885
Sumac .....tons...	13,038	783,600
Valonia .....do.....	29,678	2,122,870
Unenumerated.....cwts...	1,239,225	3,509,395
Dye-woods.....tons...	73,527	2,075,075
Eggs .....thousands...	1,090,089	15,428,405
Feathers (ornamental).....pounds...	620,921	4,826,915
Fish.....cwts...	1,604,667	10,162,115
Flax and hemp:		
Flax (dressed and undressed).....cwts...	1,341,113	12,182,965
Tow or codilla of flax and hemp.....do.....	313,611	1,856,210
Hemp and other like substances (except jute), dressed and undressed..do.....	1,450,445	10,607,620
Jute.....tons...	327,221	18,410,700
Flowers (artificial).....	.....	1,014,435
Fruits:		
Currants.....cwts...	1,100,737	7,191,620
Raisins.....do.....	653,138	5,112,020

Aggregate imports into the United Kingdom in 1887 — Continued.

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Description.	Quantities.	Values.
Fruits — continued.		
Oranges and lemons....bushels...	4,807,360	$7,718,335
Raw, exclusive of nuts....do....	4,422,561	8,651,185
Glass of all kinds....cwts...	1,657,354	8,371,340
Guano....tons...	21,175	870,430
Gum of all sorts....cwts...	314,162	5,229,020
Gutta-percha....do....	24,133	782,500
Hair:		
Goats' hair, or wool....pounds...	18,146,738	4,155,210
Manufactures of hair and of goats' wool....	....	446,680
Hides, raw, dry, and wet....cwts...	1,150,192	15,662,725
Hops....do....	145,122	2,138,765
Lace and articles thereof....	....	5,062,680
Lard....cwts...	907,634	8,021,215
Leather....pounds...	84,876,528	28,094,225
Leather gloves....pairs...	18,161,472	8,144,030
Meat:		
Unenumerated, salted, or fresh....cwts...	826,794	8,405,580
Preserved, other than salted....do....	520,239	6,758,845
Metals:		
Copper ore and regulus....tons...	169,511	12,505,990
Unwrought, part wrought, and old copper....do....	31,013	6,627,795
Iron ore....do....	3,765,788	12,739,750
Iron in bars....do....	112,968	4,949,290
Iron and steel, wrought or manufactured....cwts...	2,791,662	10,115,715
Lead, pig and sheet....tons...	114,493	7,232,065
Silver ore....	....	6,890,780
Tin, in blocks, ingots, bars, or slabs....cwts...	518,360	14,341,305
Zinc, crude, in cakes....tons...	57,058	4,298,195
Zinc manufactures....cwts...	395,279	1,776,440
Musical instruments....	....	3,842,955
Nuts and kernels used for expressing oil therefrom....tons...	56,774	3,121,740
Oils:		
Fish....do....	17,698	1,866,375
Palm....cwts...	968,227	4,715,630
Cocoa-nut....do....	180,792	1,241,090
Olive....tons...	20,789	3,791,740
Seed....do....	15,508	1,870,600
Turpentine....cwts...	359,202	2,360,080
Oil-seed cake....tons...	264,849	7,779,405
Onions, raw....bushels...	3,645,922	3,083,750
Painters' colors and pigments....	....	4,280,085
Paper:		
For printing or writing....cwts...	275,425	2,082,765
Other (except hanging)....do....	1,409,327	5,780,125
Petroleum (refined and unrefined)....gallons...	77,390,435	10,517,995
Pork....cwts...	424,983	3,831,985
Potatoes....do....	2,763,357	4,874,520
Poultry, game, and rabbits....	....	3,611,175
Pyrites of iron and copper....tons...	596,774	5,327,340
Rags and other paper-making materials:		
Rags....do....	38,273	2,330,835
Esparto and other materials....do....	339,769	9,030,425
Rice....cwts...	5,019,512	9,367,755
Resin....do....	1,086,121	1,240,670
Saltpeter....do....	301,048	1,297,830
Saltpeter cubic niter....do....	1,738,768	4,168,605
Seeds:		
Clover and grass....do....	334,966	3,448,945
Cotton....tons...	275,627	7,689,030

Aggregate imports into the United Kingdom in 1887 — Continued

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Description.	Quantities.	Values.
Seeds — continued.		
Flax or linseed ..... quarters...	2,299,123	£21,112,465
Rape ..... do.....	382,487	4,248,030
Silk:		
Knubs, or husks and waste ..... cwts...	65,892	2,079,440
Raw ..... pounds...	2,491,982	8,502,555
Thrown ..... do.....	453,872	2,074,880
Silk manufactures:		
Broad stuffs	.....	25,740,840
Ribbons	.....	13,506,610
Other manufactures	.....	12,664,330
Total of silk manufactures	.....	51,911,780
Skins and furs:		
Goat, undressed ..... number...	4,889,119	2,735,360
Seal ..... do.....	604,186	2,531,615
Sheep and lamb, undressed ..... do.....	8,968,897	4,798,860
Furs of all sorts ..... do.....	25,134,346	4,813,980
Spices:		
Cinnamon ..... pounds...	1,099,973	220,305
Pepper ..... do.....	29,795,236	5,107,915
Of all sorts ..... do.....	22,683,987	2,752,710
Spirits:		
Rum ..... proof gallons...	6,362,070	2,589,910
Brandy ..... do.....	2,826,108	6,586,120
Other foreign and colonial spirits ..... do.....	2,739,908	2,053,520
Total of spirits ..... do.....	11,928,086	11,169,550
Sugar:		
Refined, and sugar candy ..... cwts...	6,996,312	27,345,805
Unrefined ..... do.....	18,010,366	54,772,560
Molasses ..... do.....	305,475	508,890
Tallow and stearine ..... do.....	895,121	5,368,055
Tea ..... pounds...	221,841,490	48,914,990
Teeth, elephants', sea-cow, and sea-horse ..... cwts...	10,665	2,389,900
Tobacco:		
Manufactured, cigars, and snuff ..... pounds...	3,595,071	6,108,755
Unmanufactured ..... do.....	72,178,994	10,888,890
Toys	.....	3,348,480
Watches	.....	3,753,750
Wine ..... gallons...	15,383,641	27,331,330
Wood and timber:		
Hewn ..... loads...	1,718,466	16,250,420
Sawn or split ..... do.....	3,797,747	39,468,850
Staves ..... do.....	137,578	2,824,825
Mahogany ..... tons...	37,650	1,533,030
Wool (sheep, lamb, alpaca, and the llama tribe) ..... pounds...	577,924,661	122,260,105
Woolen rags ..... tons...	31,670	3,320,610
Woolen manufactures	.....	38,556,135
Woolen and worsted yarn:		
Berlin wool and yarn used for fancy purposes ..... pounds...	1,188,596	1,069,210
Yarn for weaving ..... do.....	16,088,197	9,527,830
Yeast (dried) ..... cwts...	284,962	3,870,140
All other articles	.....	145,516,820
Total	.....	1,811,137,820

Exports.

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Articles.	Quantities.	Values.
British and Irish produce.		
Alkali.....cwts...	6,161,900	£8,713,855
Apparel and slops	.....	19,736,530
Arms and ammunition :		
Fire-arms (small).....number...	128,576	1,116,910
Gunpowder.....pounds...	9,788,500	1,316,970
All other kinds	.....	5,495,095
Bags, empty ..... dozens...	3,221,672	3,280,655
Beer and ale.....barrels...	440,867	8,391,800
Biscuits and bread.....cwts...	199,953	2,751,485
Bleaching materials.....do.....	1,578,300	2,964,805
Books, printed ....do.....	133,403	5,877,055
Butter .....do.. ...	27,794	783,870
Candles of all sorts .....pounds...	9,313,100	904,360
Caoutchouc, manufactures of.....	.....	5,351,555
Carriages, railway	.....	4,137,805
Cement.....cwts...	10,121,800	4,913,880
Cheese.....do.....	14,321	283,765
Chemical products and dye-stuffs.....	.....	10,959,575
Clocks and watches.....	.....	772,295
Coals, etc. :		
Coals, cinders, and fuel .....tons...	24,460,967	50,849,955
Products of coal (except dyes)	.....	3,587,850
Cordage and twine .....cwts...	162,252	1,852,375
Corn :		
Wheat... .....do.....	63,790	132,205
Wheat flour.....do.....	154,995	402,860
Other kinds	.....	1,099,270
Cotton yarn .....pounds...	251,026,000	56,896,625
Cotton manufactures :		
Piece goods —		
White or plain.....yards...	3,473,308,200	164,068,490
Printed, checked, or dyed.....do.....	1,430,609,600	94,620,905
Mixed materials.....do.....	94,200	22,415
Stockings and socks.....dozen pairs...	1,727,589	2,217,270
Thread for sewing .....pounds...	20,392,000	14,895,920
Other kinds	.....	22,077,205
Total	.....	297,902,905
Earthen and china ware	.....	9,917,505
Fish :		
Herrings.....barrels...	1,014,752	5,252,010
Other sorts.....	.....	2,286,660
Furniture, cabinet, and upholstery wares.....	.....	2,867,720
Glass :		
Plate .....square feet...	4,697,143	1,313,400
Flint.....cwts...	97,328	1,183,445
Common bottles.....do.....	826,409	1,952,925
Other sorts.....do.....	169,957	655,375
Haberdashery and millinery.....	.....	11,734,170
Hardware and cutlery	.....	14,605,795
Hats.....	.....	5,697,245
Horses.....number...	9,463	2,736,980
Implements and tools of industry.....dozens...	1,194,638	4,450,765
Leather :		
Unwrought.....cwts...	152,526	6,707,250
Wrought, boots and shoes.....dozen pairs...	602,716	8,729,610
Wrought, other sorts.....	.....	1,609,535
Saddlery and harness.....	.....	2,018,035

Exports — Continued.

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Articles.	Quantities.	Values.
British and Irish produce — Continued.		
Linen and jute yarn:		
Linen yarn ..... pounds	16,380,900	$4,698,815
Jute yarn ..... do	23,568,500	1,137,060
Linen and jute manufacturers:		
Linen manufactures —		
White or plain ..... yards	152,605,500	19,300,350
Printed, checked, or dyed ..... do	8,376,300	1,067,695
Sail-cloth and sails ..... do	2,948,400	676,060
Thread for sewing ..... pounds	2,817,500	1,745,615
Other sorts		4,473,855
Total		27,263,575
Jute manufactures ..... yards	244,177,700	10,291,325
Machinery:		
Steam-engines		13,974,435
Other sorts		41,654,855
Manure		8,204,593
Medicines		4,345,415
Metals:		
Iron —		
Old, for re-manufacture ..... tons	289,312	4,138,775
Pig and puddled ..... do	1,158,174	13,684,330
Bar, angle, bolt, and rod ..... do	263,546	7,244,295
Railroad ..... do	1,011,779	23,089,595
Wire ..... do	46,463	3,154,990
Hoops, sheets, and boiler plates ..... do	351,041	16,573,785
Tinned plates ..... do	353,506	23,964,270
Cast or wrought and all other manufactures ..... do	369,307	20,612,575
Steel, unwrought ..... do	286,320	10,466,375
Manufactures of steel, or steel and iron combined ..... do	13,580	2,032,580
Total of iron and steel ..... do	4,143,028	124,961,570
Copper —		
Unwrought ..... cwts	427,475	4,837,330
Mixed or yellow metal ..... do	338,231	3,511,030
Other sorts ..... do	385,551	4,974,870
Brass ..... do	89,738	1,684,480
Lead ..... tons	44,301	3,045,390
Tin, unwrought ..... cwts	98,204	2,689,320
Zinc ..... do	210,940	733,515
Musical instruments		879,865
Oil and floor cloth ..... square yards	13,310,600	3,305,780
Oil, seed ..... gallons	18,774,500	7,838,230
Painters' colors		6,738,420
Paper, other than hangings ..... cwts	765,920	6,664,360
Pickles, vinegar, and sauces		5,968,635
Pictures ..... number	11,513	1,301,365
Plate and plated-ware		1,648,990
Provisions (not otherwise described)		4,984,815
Rags and materials for paper ..... tons	59,199	2,291,335
Salt ..... do	818,713	2,624,300
Silk (thrown, twist, and yarn)		2,194,820
Silk manufactures:		
Broad piece goods ..... yards	6,592,331	6,832,695
Other kinds		4,806,200
Total		11,638,895

Exports — Continued.

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Articles.	Quantities.	Values.
British and Irish produce — Continued.		
Skins and furs:		
British		£2,212,815
Foreign (British dressed) number	4,773,904	2,436,255
Soap cwts	452,751	2,261,220
Spirits gallons	3,106,279	5,206,145
Stationery, other than paper		4,153,020
Sugar, refined cwts	704,891	2,325,065
Telegraphic wire		4,086,925
Umbrellas and parasols		3,023,040
Wool, sheep and lambs' pounds	19,557,700	4,583,910
Woolen and worsted yarn do	40,153,100	19,848,080
Woolen and worsted manufactures		102,974,810
Other articles		53,698,220
Total		1,107,070,930
Foreign and colonial produce.		
Bacon and hams cwts	188,717	1,784,280
Caoutchouc do	116,572	6,707,920
Chemical manufactures and products		1,420,960
Cocoa pounds	8,171,893	1,396,935
Coffee cwts	692,525	13,358,120
Corn:		
Wheat do	619,048	1,192,505
Wheatmeal or flour do	171,465	469,140
Cotton, raw do	2,612,634	28,634,445
Cotton manufactures:		
Piece goods pieces	38,088,451	3,052,885
Other articles		464,615
Drugs:		
Peruvian bark cwts	131,379	2,408,180
Opium pounds	353,137	1,204,040
Unenumerated		1,923,700
Dyeing and tanning stuffs:		
Cochineal, granilla, and dust cwts	8,114	258,565
Cutch and gambier tons	9,631	1,257,285
Indigo cwts	55,085	5,894,395
Madder, madder-root, garancine, and munjeet do	3,468	23,405
Feathers, ornamental pounds	292,600	1,743,000
Fish, cured or salted cwts	308,256	2,584,840
Flax and hemp:		
Flax, dressed and undressed do	44,187	343,505
Tow or codilla of flax and hemp do	33,664	154,375
Hemp and other like substances (except jute) dressed and undressed do	405,574	4,141,970
Jute tons	106,365	6,302,755
Fruit:		
Currants cwts	72,453	404,725
Raisins do	83,580	569,660
Oranges and lemons bushels	482,122	746,665
Guano tons	12,329	484,275
Gum of all sorts cwts	184,297	3,006,480
Hair, manufactures of, and of goats' wool		29,000
Hides, raw, dry, and wet cwts	488,481	7,528,745
Leather pounds	18,392,314	7,769,495
Metals:		
Copper, unwrought, part wrought, and old copper tons	15,427	3,514,675
Iron in bars do	85,044	3,521,010
Iron and steel manufactures, unenumerated cwts	1,069,801	3,008,290
Tin in blocks, ingots, bars, or slabs do	239,110	6,473,340
Zinc, crude in cakes tons	1,847	131,095

Exports — Continued.

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Articles.	Quantities.	Values.
Foreign and colonial produce — Continued.		
Nuts and kernels used for obtaining oil.....tons...	33,620	£1,812,178
Oil:		
Palm.....cwts...	517,129	2,533,495
Cocoa-nut.....do.....	84,712	586,431
Olive.....tons...	2,782	573,265
Quicksilver.....pounds...	4,685,678	2,196,930
Rice.....cwts...	2,742,646	5,403,845
Saltpeter.....do.....	32,856	144,620
Cubic niter.....do.....	295,726	781,990
Seeds:		
Flax or linseed.....quarters...	76,076	713,555
Rape.....do.....	20,932	186,235
Unenumerated, used for obtaining oil.....do.....	85,695	797,250
Silk:		
Raw.....pounds...	120,050	418,720
Thrown.....do.....	58,650	207,685
Manufactures.....	.....	2,966,380
Skins and furs:		
Goat, undressed.....number...	4,964,015	2,289,020
Seal.....do.....	42,528	170,340
Furs of all sorts.....do.....	15,219,455	4,188,925
Spices:		
Cinnamon.....pounds...	1,221,862	231,640
Pepper.....do.....	20,616,789	3,314,685
Other sorts.....cwts...	134,257	1,176,720
Spirits:		
Rum.....proof gallons...	1,962,728	1,246,610
Brandy.....do.....	129,594	352,525
Geneva and other foreign and colonial spirits.....do.....	773,694	1,158,685
Sugar:		
Refined and candy.....cwts...	291,480	1,147,430
Unrefined.....do.....	481,985	1,689,185
Molasses.....do.....	55,833	105,360
Tallow and stearine.....do.....	320,047	1,755,865
Tea.....pounds...	35,237,643	8,421,770
Teeth, elephants', sea-cow, and sea-horse.....cwts...	6,298	1,517,810
Tobacco:		
Unmanufactured.....pounds...	6,168,189	954,940
Manufactured (cigars).....do.....	248,478	740,605
Other sorts, including snuff.....do.....	1,151,444	438,650
Wine.....gallons...	1,240,756	2,781,070
Wool:		
Sheep, lamb, alpaca, and llama.....pounds...	329,208,968	69,117,445
Woolen manufactures.....	.....	2,348,705
All other articles.....	.....	48,825,040
Total.....	.....	296,744,875
Total British and Irish produce.....	.....	1,107,070,930
Grand total.....	.....	1,403,815,805

Imports and exports by countries.—Value of total imports and exports of merchandise from and to each foreign country and British possession during the year 1887.

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Countries.	Imports.	Exports.
Foreign.		
Abyssinia	.....	$69,560
Arabia:		
Muscat	$3,250	10,930
Other states	.....	.....
Argentine Republic	10,883,790	31,870,635
Austrian territories	7,930,860	6,143,885
Belgium	73,663,315	65,702,910
Bolivia	729,735	455,545
Borneo	800	6,940
Brazil	26,895,365	30,429,305
Bulgaria	123,585	515,180
Central America	6,705,880	5,077,020
Chili	11,001,765	10,701,330
China (exclusive of Hong-Kong and Macão)	33,335,215	33,419,660
Cochin China, Camboja, and Tonquin	43,320	78,730
Denmark	25,988,790	11,161,910
Danish West India Islands	123,300	513,105
Eastern Africa — native states	277,850	553,070
Ecuador	1,095,310	1,963,390
France	185,610,940	102,478,650
Algeria	2,879,775	1,495,960
French possessions in Western Africa	106,030	455,480
Bourbon (Réunion)	.....	79,350
French possessions in India	11,185	7,870
French possessions in North America	.....	94,130
French West India Islands	2,040	1,084,035
French Guiana	.....	96,580
Germany	122,817,680	135,481,350
Greece	9,442,000	5,426,700
Hayti and St. Domingo	233,220	2,221,750
Holland	126,636,385	75,187,625
Java	11,320,265	7,075,720
Other possessions in the Indian seas	1,500	879,950
Dutch West India Islands	196,885	1,027,150
Dutch Guiana	178,135	142,560
Islands in the Pacific (except Fiji)	521,385	485,585
Italy	15,363,520	42,959,555
Japan	2,449,500	18,526,965
Madagascar	234,130	211,235
Mexico	2,370,115	5,909,265
Montenegro	.....	.....
Morocco (exclusive of ports in the possession of Spain)	1,968,650	2,285,845
Norway	13,923,690	7,568,900
Other native territories in the Indian seas	111,720	17,720
Persia	517,100	814,340
Peru	8,200,880	4,201,370
Portugal	14,133,865	12,423,250
Azores	326,500	299,945
Madeira	273,940	443,690
Portuguese possessions in Western Africa	737,935	1,817,495
Portuguese possessions in Eastern Africa	205,660	851,645
Portuguese possessions in India	.....	180,850
Macão	193,245	.....
Roumania	17,002,520	5,544,170
Russia:		
Northern ports	48,416,940	29,294,245
Southern ports	31,454,505	5,090,475
Servia	.....	.....

Imports and exports by countries, etc. — Continued.

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Countries.	Imports.	Exports.
Foreign — Continued.		
Siam	$169,170	$389,885
Spain	50,511,125	20,245,935
Canary Islands	428,400	1,126,635
Spanish ports in Northern Africa	.....	28,950
Fernando Po	29,800	60,460
Philippine and Ladrone Islands	4,393,290	3,463,550
Spanish West India Islands	1,044,570	10,905,710
Sweden	36,611,680	15,640,925
Tripoli	1,185,200	43,990
Tunis	464,580	391,995
Turkish dominions:		
European Turkey	4,339,235	16,723,015
Asiatic Turkey	14,345,700	14,180,870
Egypt	38,445,885	15,463,145
United States of America:		
Atlantic coast	389,812,940	195,060,905
Pacific coast	25,432,430	6,139,845
United States of Colombia	1,330,010	6,105,790
Uruguay	1,441,535	9,010,705
Venezuela	587,905	3,956,585
Western coast of Africa (not particularly designated)	4,755,625	3,864,035
Whale fisheries	131,965	80
Total	1,392,140,495	993,637,520
British possessions.		
Aden	1,688,620	778,390
Ascension	380	11,590
Australasia:		
West Australia	1,475,265	1,875,230
South Australia	14,046,580	8,371,535
Victoria	27,5,5,645	34,473,060
New South Wales	35,889,560	35,737,955
Queensland	7,447,300	11,518,850
Tasmania	1,483,975	2,284,980
New Zealand	28,686,820	16,940,375
Fiji Islands	119,085	111,505
Total	116,724,230	111,313,490
Bermudas	37,295	397,475
British Guiana	6,476,260	3,875,540
British Honduras	1,163,475	467,085
British North America:		
Dominion of Canada	51,334,950	43,955,780
Newfoundland and coast of Labrador	1,488,685	2,074,815
British West India Islands	8,671,900	11,006,855
Total	61,495,535	57,037,450
Ceylon	11,289,115	3,309,895
Channel Islands	4,870,600	3,991,275
Falkland Islands	696,615	141,300
Gibraltar	283,860	4,735,645
Heligoland	.....	1,070
Hong-Kong	7,046,205	14,017,805
India:		
Bombay and Scinde	40,175,305	64,544,280
Madras	18,815,415	15,824,760
Bengal	85,912,115	68,116,815
Burmah	7,743,715	11,612,725
Total	152,646,550	160,098,580

Imports and exports by countries, etc. — Continued.

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Countries.	Imports.	Exports.
British possessions — Continued.		
Labuan	$610	
Malta and Gozo	592,345	$4,161,585
Mauritius	825,410	1,567,230
St. Helena	3,640	80,840
South Africa:		
Cape of Good Hope	20,913,765	18,683,125
Natal	4,510,765	8,571,780
Straits Settlements	23,908,520	13,271,150
The Gold Coast	2,791,850	2,218,851
West Africa Settlements — Gambia and Sierra Leone	1,027,680	1,447,270
Total to British possessions	418,993,325	410,178,285
Total foreign countries	1,392,144,495	993,637,520
Grand total	1,811,137,820	1,403,815,805

TRADE WITH THE UNITED STATES.

The total value of goods imported from the United States in 1887 was $415,245,370, and exported thereto $201,200,750, the balance in favor of the United States being $214,044,620. In 1885 this balance was $322,424,960; in 1886, $273,876,605. The ratio of exchange was, in 1885, 4 to 1; in 1886, 3 to 1; and in 1887 a little more than 2 to 1. The imports from the United States into the United Kingdom for the year 1887 show an increase of $7,244,385, or 1¾ per cent., and the exports thereto of $13,161,725, or 7 per cent. The principal articles imported from the United States are corn, which shows an increase in weight of about 3,000,000 cwts., in value, $15,000,000; raw cotton, which shows a decrease of 300,000 cwts., and $700,000 in value; bacon and hams, which show a decrease in weight of 400,000 cwts., but an increase in value of $125,000; and tobacco, which shows a decrease of 8,500,000 pounds in weight, and $1,250,000 in value.

The principal articles exported to the United States are cottons, which show an increase in value of $1,000,000; linens, $1,000,000; metals, $10,000,000, and woolens, $500,000.

Imports from the United States.

Articles.	Quantities.	Values.
Animals, living:		
Oxen and bulls ..... number	94,642	$9,246,535
Sheep and lambs ..... do	1,027	10,200
Swine ..... do		
Horses ..... do	141	33,930
Bacon and hams ..... cwts	3,023,301	31,696,190
Beef:		
Fresh ..... do	643,320	7,267,280
Salted ..... do	202,729	1,542,850
Butter ..... do	52,392	1,069,935
Butterine ..... do	126	1,585

Imports from the United States — Continued.

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Articles.		Quantities.	Values.
Caoutchouc	cwts.	7,443	$156,685
Cheese	do.	760,920	9,255,020
Clocks	do.	.....	466,535
Coffee	do.	49,727	1,035,230
Copper:			
Ore	tons.	212	16,130
Regulus	do.	24,247	3,166,810
Unwrought and part wrought	do.	2,043	427,835
Corn:			
Wheat	cwts.	30,530,263	59,957,890
Barley	do.	369,169	767,775
Oats	do.	17,195	24,620
Peas	do.	714,729	1,089,165
Maize	do.	11,201,831	13,932,350
Wheatmeal and flour	do.	14,860,415	40,243,080
Oatmeal	do.	106,805	273,250
Cotton:			
Raw	do.	11,222,272	142,072,985
Manufactures	do.	.....	2,262,185
Fish	do.	295,391	2,032,490
Fruit:			
Raw, apples	bushels.	997,413	1,475,540
Raw, unenumerated	do.	3,264	8,645
Hides, raw	cwts.	20,143	253,030
Hops	do.	36,343	555,430
Iron and steel manufactures	do.	77,983	1,002,580
Lard	do.	833,265	7,308,655
Leather	pounds.	34,297,311	8,194,010
Manures:			
Phosphate of lime and rock	tons.	165,275	1,670,645
Unenumerated	do.	322	2,180
Meat, unenumerated:			
Salted or fresh	cwts.	2,451	26,610
Preserved otherwise than by salting	do.	228,823	2,668,295
Mutton, fresh	do.	2,289	18,000
Naphtha, wood, not potable	gallons.	28,786	27,120
Oils:			
Sperm	tons.	601	136,310
Train or blubber	do.	2,401	270,170
Animal	cwts.	115,844	1,040,845
Turpentine	do.	348,036	2,303,180
Chemical, essential, or perfumed	pounds.	84,765	165,465
Oil-seed cake	tons.	202,355	6,049,575
Petroleum	gallons.	68,200,028	9,474,780
Pork, salted	cwts.	191,700	1,373,490
Resin	do.	1,076,743	1,225,465
Seeds, clover and grass	do.	60,049	664,710
Silver ore	.....	.....	476,200
Skins and furs	.....	.....	3,017,410
Sugar:			
Refined	cwts.	775,853	3,112,045
Unrefined	do.	18,507	50,900
Molasses	do.	230,083	384,540
Tallow and stearine	do.	389,669	1,885,985
Tar	barrels.	9,052	23,635
Tobacco:			
Unmanufactured	pounds.	62,130,054	8,970,080
Manufactured	do.	1,992,959	3,026,220
Wax	cwts.	4,318	164,260

Imports from the United States — Continued.

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Articles.	Quantities.	Values.
Wood and timber:		
Hewn ..... loads	83,437	$1,207,855
Sawn or split ..... do	205,184	2,772,290
Staves ..... do	19,691	572,165
Furniture and hardwoods ..... tons	32,533	1,170,695
House-frames, fittings, and joiners' work	.....	548,265
Wool, sheep or lamb ..... pounds	624,529	90,540
All other articles	.....	13,858,985
Total	.....	415,245,370

Comparison of imports from the United States in 1887.

Articles.	Increase or decrease as compared with 1886.			
	Quantities.		Values.	
	Increase.	Decrease.	Increase.	Decrease.
Animals, living:				
Oxen and bulls ..... number	.....	19,114	.....	$2,107,620
Sheep and lambs ..... do	.....	4,524	.....	43,310
Swine ..... do	.....	.....	.....	.....
Horses ..... do	.....	90	.....	25,945
Bacon and hams ..... cwts	.....	406,786	$124,585	.....
Beef:				
Fresh ..... do	.....	118,906	.....	1,571,735
Salted ..... do	17,794	.....	13,110	.....
Butter ..... do	10,002	.....	266,770	.....
Butterine ..... do	.....	495	.....	6,255
Caoutchouc ..... do	221	.....	27,180	.....
Cheese ..... do	.....	95,189	67,585	.....
Clocks	.....	.....	96,445	.....
Coffee ..... cwts	17,574	.....	544,070	.....
Copper:				
Ore ..... tons	.....	1,823	.....	116,100
Regulus ..... do	8,142	.....	1,153,365	.....
Wrought or part wrought ..... do	.....	78	.....	25,385
Corn:				
Wheat ..... cwts	5,881,682	.....	12,363,235	.....
Barley ..... do	319,306	.....	649,490	.....
Oats ..... do	.....	395,429	.....	609,210
Peas ..... do	122,835	.....	254,415	.....
Maize ..... do	.....	5,499,641	.....	6,536,725
Wheatmeal and flour ..... do	3,435,164	.....	9,386,265	.....
Oatmeal ..... do	.....	107,789	.....	307,590
Cotton:				
Raw ..... do	.....	318,236	.....	704,025
Manufactures	.....	.....	1,194,065	.....
Fish ..... cwts	.....	47,138	.....	561,220
Fruit:				
Raw, apples ..... bushels	.....	649,639	.....	918,785
Raw, unenumerated ..... do	.....	5,899	.....	18,475
Hides, raw ..... cwts	17,741	.....	214,985	.....
Hops ..... do	2,415	.....	14,365	.....
Iron and steel manufactures ..... do	24,348	.....	316,980	.....
Lard ..... do	36,541	.....	656,320	.....
Leather ..... pounds	7,085,738	.....	1,096,625	.....

Comparison of imports from the United States in 1887 — Continued.

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Articles.	Increase or decrease as compared with 1886.			
	Quantities.		Values.	
	Increase.	Decrease.	Increase.	Decrease.
Manures:				
Phosphate of lime and rock ..... tons...	20,652	.....	$48,855	.....
Unenumerated ..... do.....	.....	213	760	.....
Meat, unenumerated:				
Salted or fresh ..... cwts...	1,576	.....	18,375	.....
Preserved, otherwise than by salting ..... do.....	.....	64,822	.....	$653,050
Mutton, fresh ..... do.....	.....	4,080	.....	59,490
Naphtha, wood, not potable ..... gallons...	28,786	.....	27,120	.....
Oils:				
Sperm ..... tons...	365	.....	77,530	.....
Train or blubber ..... do.....	1,333	.....	163,270	.....
Animal ..... cwts...	21,496	.....	246,815	.....
Turpentine ..... do.....	61,604	.....	384,595	.....
Chemical, essential, or perfumed ..... pounds...	43,991	.....	44,060	.....
Oil-seed cake ..... tons...	.....	33,743	.....	1,523,290
Petroleum ..... gallons...	165,405	.....	.....	494,585
Pork, salted ..... cwts...	.....	21,207	.....	104,020
Resin ..... do.....	.....	78,952	.....	212,670
Seeds, clover and grass ..... do.....	28,936	.....	269,435	.....
Silver ore	.....	.....	.....	268,315
Skins and furs	.....	.....	.....	150,470
Sugar:				
Refined ..... cwts...	.....	647,470	.....	3,037,000
Unrefined ..... do.....	.....	2,506	.....	11,810
Molasses ..... do.....	.....	145,727	.....	204,235
Tallow and stearine ..... do.....	.....	12,006	.....	282,765
Tar ..... barrels...	3	.....	2,860	.....
Tobacco:				
Unmanufactured ..... pounds...	.....	8,328,613	.....	1,127,920
Manufactured ..... do.....	.....	94,026	.....	285,125
Wax ..... cwts...	.....	1,756	28,725	.....
Wood and timber:				
Hewn ..... loads...	8,033	.....	.....	214,715
Sawn or split ..... do.....	.....	30,142	.....	384,580
Staves ..... do.....	.....	513	.....	42,985
Furniture and hardwoods ..... tons...	8,295	.....	272,140	.....
House frames and joiners' work	.....	.....	.....	115,770
Wool, sheep or lambs' ..... pounds...	78,513	.....	.....	22,500
All other articles	.....	.....	117,650	.....
Total	.....	.....	7,244,385	.....

Exports to the United States, 1887.

Articles.	Quantities.	Values.
British products.		
Alkali ..... cwts...	3,289,700	$4,648,335
Animals:		
Horses ..... number...	1,745	338,770
Unenumerated	.....	104,085
Apparel and haberdashery	.....	1,677,340
Arms, ammunition, and military stores	.....	400,125
Bags and sacks (empty) ..... dozen...	297,473	901,785

Exports to the United States, 1887 — Continued.

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Articles.	Quantities.	Values.
British products — Continued.		
Beer and ale ..... barrels...	42,591	$900,175
Bleaching materials ..... cwts...	992,000	1,841,960
Books, printed ..... do.....	40,771	1,674,285
Caoutchouc, manufactures of	.....	236,610
Cement ..... tons...	201,215	1,964,565
Chemical products and preparations (including dye-stuffs)	.....	1,995,050
Clay and manufactures of	.....	315,565
Clocks, watches, and parts thereof	.....	214,215
Coal, cinders, and fuel ..... tons...	206,165	644,955
Coal, products of, etc. (including naphtha, paraffine, paraffine oil, and petroleum)	.....	31,825
Cordage and twine ..... cwts...	4,262	50,435
Cotton yarn ..... pounds...	807,000	341,810
Cottons entered:		
By the yard ..... yards...	44,028,500	5,276,095
At value	.....	6,779,820
Earthen and china ware	.....	4,326,970
Flax and hemp, dressed and undressed ..... cwts...	31,573	797,055
Furniture, cabinet and upholstery wares	.....	268,105
Glass manufactures	.....	1,292,120
Hardware and cutlery	.....	1,891,695
Hats of all sorts ..... dozen...	26,322	180,955
Hides, raw ..... cwts...	57,032	644,490
Implements and tools	.....	103,750
Instruments and apparatus, surgical, anatomical, and scientific	.....	158,860
Jute:		
Yarn ..... pounds...	12,567,309	569,405
Manufactures, piece goods ..... yards...	127,198,800	4,755,510
Leather, wrought and unwrought	.....	1,043,095
Linen yarn ..... pounds...	1,686,800	235,095
Linens entered:		
By the yard ..... yards...	81,910,900	10,292,765
At value	.....	3,182,320
Machinery and mill work	.....	2,878,900
Manure	.....	256,135
Medicines, drugs, and medicinal preparations	.....	203,365
Metals:		
Iron, wrought and unwrought ..... tons...	1,286,110	38,151,045
Copper, wrought and unwrought ..... cwts...	7,524	92,930
Tin, unwrought ..... do.....	5,233	151,545
Unenumerated and manufactures thereof	.....	586,175
Oil and floor cloth ..... square yards...	1,096,900	394,550
Painters' colors and materials	.....	578,625
Paper of all sorts ..... cwts...	16,127	299,535
Pickles, vinegar, sauces, etc	.....	1,052,190
Prints, engravings, drawings, etc	.....	283,345
Provisions (including meat)	.....	499,830
Rags and other materials for paper making ..... tons...	54,969	2,181,050
Salt ..... do.....	172,951	804,860
Seeds of all sorts ..... cwts...	16,049	122,765
Silk:		
Thrown, twist, or yarn	.....	449,175
Manufactures	.....	4,622,550
Skins and furs of all sorts	.....	3,634,935
Soap ..... cwts...	9,598	213,940
Stationery, other than paper	.....	377,755
Stones and slates	.....	293,590
Sugar, refined and candy ..... cwts...	809	2,785
Telegraph wires and apparatus	.....	16,170
Wool, sheep and lambs' ..... pounds...	10,854,300	2,225,040

Exports to the United States, 1887 — Continued.

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Articles.	Quantities.	Values.
British products — Continued.		
Woolen and worsted yarn ..... pounds	1,195,800	$668,780
Woolens entered:		
By the yard ..... yards	46,865,800	19,541,580
At value	.....	1,597,920
Yarn, alpaca, mohair, and other sorts ..... pounds	243,900	157,215
All other articles	.....	5,964,780
Total British products	.....	147,739,000
Foreign and colonial products.		
Animals, horses ..... number	342	66,580
Bacon and hams ..... cwts	271	3,790
Bristles ..... pounds	156,775	140,335
Caoutchouc ..... cwts	44,824	2,335,315
Chemical manufactures and products, unenumerated	.....	569,720
China and earthen ware ..... cwts	11,258	173,805
Cocoa ..... pounds	764,769	138,960
Coffee ..... cwts	15,271	298,845
Cordage, twine, and cable yarn	.....	95,120
Cotton, raw ..... cwts	32,503	532,540
Cotton manufactures	.....	377,490
Drugs:		
Bark, Peruvian ..... cwts	33,494	552,205
Opium ..... pounds	116,646	363,940
Unenumerated	.....	707,620
Dyeing or tanning stuffs:		
Cochineal ..... cwts	2,012	61,835
Cutch and gambier ..... tons	3,116	396,740
Indigo ..... cwts	15,466	1,747,195
Unenumerated ..... do	26,306	311,370
Farinaceous substances	.....	148,535
Feathers:		
Bed ..... cwts	1,746	57,450
Ornamental ..... pounds	101,163	793,705
Fish, cured or salted ..... cwts	97,363	661,870
Flax, dressed, undressed, and tow or codilla of flax ..... do	60,057	357,240
Fruit:		
Almonds ..... do	7,684	147,925
Currants ..... do	8,326	45,770
Figs and fig cake ..... do	11,284	82,575
Nuts used as fruit	.....	172,580
Oranges and lemons ..... bushels	173,792	278,725
Raisins ..... cwts	11,471	77,535
Raw, unenumerated ..... bushels	163,245	336,895
Dried, unenumerated ..... cwts	99,998	402,660
Glass ..... do	14,763	176,235
Guano ..... tons	1,786	77,870
Gum:		
Lac, seed, shell, stick, and dye ..... cwts	24,159	349,755
Other sorts ..... do	25,764	515,770
Hair:		
Goats' hair or wool ..... pounds	1,522,878	256,370
Other sorts	.....	965,030
Hemp, dressed and undressed, and tow or codilla of hemp ..... cwts	179,627	1,493,355
Hides, raw ..... do	135,409	1,930,090
Hops ..... do	8,928	110,540
Ivory ..... do	1,437	414,425
Jute ..... tons	1,253	78,510
Leather ..... pounds	4,126,099	1,909,805
Linen manufactures	.....	124,820

Exports to the United States, 1887 — Continued.

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Articles.	Quantities.	Values.
Foreign and colonial products — Continued.		
Metals:		
Iron bars, etc ..... tons	34,065	$1,650,515
Steel, unwrought ..... do	7,023	246,535
Iron and steel manufactures, unenumerated ..... cwts	203,319	557,250
Lead ..... do	1,082	66,265
Tin ..... do	164,420	4,542,785
Precious stones, unset	.....	1,126,935
Quicksilver ..... pounds	786,590	357,135
Rags and other material for paper making ..... tons	35,557	1,694,590
Rags, woolen, to be used as wool ..... do	355	16,570
Rice ..... cwts	134,481	293,190
Seeds:		
Flax and linseed ..... quarters	18,950	172,575
Unenumerated, for expressing oil therefrom ..... do	5,091	45,305
Unenumerated, not for oil ..... cwts	44,456	153,675
Silk manufactures	.....	118,740
Skins:		
Goat, undressed ..... number	4,124,166	1,780,725
Sheep ..... do	688,663	189,355
Furs of all sorts, other ..... do	5,824,906	554,120
Spices	.....	1,806,255
Spirits, unsweetened ..... proof gallons	91,610	107,355
Sponge ..... pounds	59,112	115,320
Sugar, unrefined ..... cwts	27,608	87,500
Tea ..... pounds	3,115,822	717,090
Toys	.....	284,825
Wine ..... gallons	26,916	102,985
Wood, furniture, veneer and hardwoods ..... tons	1,746	103,000
Wool, sheep and lambs' ..... pounds	58,056,127	10,323,705
Woolen manufactures	.....	615,930
All other articles	.....	4,791,765
Total foreign and colonial products	.....	53,461,750
Total British products	.....	147,739,000
Grand Total	.....	201,200,750

Comparative statement of exports to the United States, 1886-'87.

Articles.	Increase or decrease as compared with 1886.			
	Quantities.		Values.	
	Increase.	Decrease.	Increase.	Decrease.
British products.				
Alkali ..... cwts	.....	166,000	.....	$385,280
Animals:				
Horses ..... number	572	.....	.....	21,250
Unenumerated	.....	.....	.....	9,390
Apparel and haberdashery	.....	.....	$166,405	.....
Arms, ammunition, and military stores	.....	.....	.....	117,500
Bags and sacks, empty ..... dozen	17,026	.....	38,465	.....
Beer and ale ..... barrels	4,226	.....	64,090	.....
Bleaching materials ..... cwts	47,400	.....	316,310	.....
Books, printed ..... do	4,654	.....	204,375	.....
Caoutchouc, manufactures of	.....	.....	.....	51,640
Cement ..... tons	103,300	.....	940,985	.....

Comparative statement of exports, etc. — Continued.

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Articles.	Increase or decrease compared with 1886.			
	Quantities.		Values.	
	Increase.	Decrease.	Increase.	Decrease.
British products — Continued.				
Chemical products and preparations (including dye-stuffs)				$7,330
Clay and manufactures of			$78,510	
Clocks, watches, and parts thereof				65,100
Coal, cinders, and fuel ..... tons		68,460		103,645
Coal, products of, etc., including naphtha, paraffine, paraffine oil, and petroleum			2,010	
Cordage and twine ..... cwts		5,933		53,510
Cotton yarn ..... pounds		22,700	46,600	
Cottons entered:				
By the yard ..... yards		1,223,150		468,680
At value			1,006,605	
Earthen and china ware			435,360	
Flax and hemp, dressed and undressed ..... cwts	4,816		110,360	
Furniture, cabinet and upholstery wares			10,315	
Glass manufactures			207,475	
Hardware and cutlery			273,820	
Hats of all sorts ..... dozen	10,749		71,430	
Hides, raw ..... cwts	5,041		139,025	
Implements and tools			22,200	
Instruments and apparatus, surgical, anatomical, and scientific			24,725	
Jute:				
Yarn ..... pounds		4,191,500		72,090
Manufactures, piece goods ..... yards	7,733,500		226,825	
Leather, wrought and unwrought			134,165	
Linen, yarn ..... pounds	356,600		11,120	
Linen entered:				
By the yard ..... yards	1,205,600		464,915	
At value			379,240	
Machinery and mill work			303,595	
Manure				134,230
Medicines, drugs, and medicinal preparations			69,455	
Metals:				
Iron, wrought and unwrought ..... tons	477,253		9,248,145	
Copper, wrought and unwrought ..... cwts		4,826		42,025
Tin, unwrought ..... do		368	13,750	
Unenumerated and manufactures thereof				677,600
Oil and floor cloths ..... square yards	164,400		40,605	
Painters' colors and materials			22,670	
Paper of all sorts ..... cwts		2,537		33,115
Pickles, vinegar, sauces, etc			165,475	
Prints, engravings, drawings, etc			16,320	
Provisions (including meat)				427,065
Rags and other materials for paper making ..... tons	8,264		364,035	
Salt ..... do		41,883		268,050
Seeds of all sorts ..... cwts		2,110		23,630
Silk:				
Thrown, twist or yarn				80,895
Manufactures			580,470	
Skins and furs of all sorts			557,585	
Soap ..... cwts	675		52,290	
Stationery other than paper				32,090
Stones and slates			56,925	
Sugar, refined and candy ..... cwts	14			265

Comparative statement of exports, etc. — Continued.

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Articles.	Increase or decrease as compared with 1886.			
	Quantities.		Values.	
	Increase.	Decrease.	Increase.	Decrease.
British products — Continued.				
Telegraph wires and apparatus				$22,650
Wool, sheep and lambs'.....pounds		1,572,000		40,670
Woolen and worsted yarn.....do		1,302,800		584,395
Woolens entered:				
By the yard.....yards		6,623,500	$186,700	
At value			83,695	
Yarn:				
Alpaca, mohair, and other sorts.....pounds		327,000		49,660
All other articles			249,330	
Total			13,614,620	
Foreign and colonial products.				
Animals, horses.....number	240		46,765	
Bacon and hams.....cwts		1,628		6,990
Bristles.....pounds		7,048	4,745	
Caoutchouc.....cwts		6,942		701,035
Chemicals, manufactures, and products, unenumerated			380,605	
China and earthen ware.....cwts	1,656		5,150	
Cocoa.....pounds	530,680		99,080	
Coffee.....cwts	2,119		96,510	
Cordage, twine, and cable yarn			1,965	
Cotton, raw.....cwts	5,391		83,710	
Cotton manufactures				54,795
Drugs:				
Bark, Peruvian.....cwts	13,825		83,365	
Opium.....pounds		2,888	33,105	
Unenumerated			184,190	
Dyeing or tanning stuffs:				
Cochineal.....cwts		1,586		56,860
Cutch and gambier.....tons	1,737		214,085	
Indigo.....cwts	4,465		733,305	
Unenumerated.....do	10,518		109,745	
Farinaceous substances			24,680	
Feathers:				
Bed.....cwts		1,246		50,790
Ornamental.....pounds	24,803			42,140
Fish, cured or salted.....cwts	50,729		330,925	
Flax, dressed, undressed, and tow or codilla of flax...do	16,936		56,610	
Fruit:				
Almonds.....cwts	2,282		67,980	
Currants.....do		13,325		85,395
Figs and fig cake.....do	1,003			14,990
Nuts, used as fruit			72,845	
Oranges and lemons.....bushels		151,222		200,090
Raisins.....cwts		12,469		90,390
Raw, unenumerated.....bushels		63,884		225,485
Dried, unenumerated.....cwts	23,248		76,975	
Glass.....do	6,434		59,055	
Guano.....tons	1,120		55,070	
Gum:				
Lac, seed, shell, slick, and dye.....cwts	761			23,230
Other sorts.....do		4,587		46,005
Hair:				
Goats' hair and wool.....pounds		691,682		411,885
Other sorts				36,160

Comparative statement of exports, etc. — Continued.

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Articles.	Increase or decrease as compared with 1886.			
	Quantities.		Values.	
	Increase.	Decrease.	Increase.	Decrease.
Foreign and colonial products — Continued.				
Hemp, dressed and undressed, and tow or codilla of hemp ..... cwts.	62,044	.....	$619,420	.....
Hides, raw ..... do.	.....	82,145	.....	$1,144,970
Hops ..... do.	.....	36,168	.....	602,360
Ivory ..... do.	116	.....	45,665	.....
Jute ..... tons.	.....	604	.....	25,050
Leather ..... pounds.	465,659	.....	447,610	.....
Linen manufactures	.....	.....	62,110	.....
Metals:				
Iron bars, etc ..... tons.	4,656	.....	260,420	.....
Steel, unwrought ..... do.	64	.....	.....	29,280
Iron and steel manufactures unenumerated ..... cwts.	26,638	.....	.....	18,490
Lead ..... do.	.....	2,124	.....	138,875
Tin ..... do.	.....	26,304	.....	96,470
Precious stones, unset	.....	.....	.....	371,380
Quicksilver ..... pounds.	.....	136,837	.....	34,865
Rags and other materials for paper making ..... tons.	1,566	.....	.....	39,570
Rags, woolen, used as wool ..... do.	92	.....	2,245	.....
Rice ..... cwts.	9,096	.....	5,625	.....
Seeds:				
Flax or linseed ..... quarters.	18,929	.....	172,575	.....
Unenumerated, for expressing oil therefrom ... do.	.....	14,695	.....	145,340
Unenumerated, not for oil ..... cwts.	14,861	.....	30,330	.....
Silk manufactures	.....	.....	.....	31,685
Skins:				
Goat, undressed ..... number.	28,230	.....	192,335	.....
Sheep ..... do.	.....	75,670	.....	9,535
Furs of all other sorts ..... do.	.....	288,427	.....	103,865
Spices ..... pounds.	.....	31,688	219,555	.....
Spirits, unsweetened ..... proof gallons.	.....	30,153	.....	74,000
Sponge ..... pounds.	.....	21,918	.....	15,278
Sugar, unrefined ..... cwts.	.....	214,716	.....	700,885
Tea ..... pounds.	.....	959,468	.....	320,770
Toys	.....	.....	218,530	.....
Wine ..... gallons.	.....	5,605	.....	14,485
Wood, furniture, veneer, and hard woods ..... tons.	386	.....	19,335	.....
Wool, sheep or lambs' ..... pounds.	.....	7,080,871	.....	1,035,135
Woolen manufactures	.....	.....	354,545	.....
All other articles	.....	.....	1,074,865	.....
Total	.....	.....	.....	452,895
Total increase of British and foreign produce	.....	.....	13,161,725	.....

Trade between the United States and Great Britain and Ireland for ten years ending 1887.

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Year.	Exports to the United States.			Imports from the United States.
	Produce and manufactures of Great Britain and Ireland.	Foreign and colonial produce.	Total.	
1878	$72,760,380	$14,899,140	$87,659,520	$445,730,850
1879	101,609,950	25,983,995	127,593,945	459,091,475
1880	154,279,355	35,491,605	189,770,960	535,406,300
1881	148,981,490	34,933,745	183,915,235	516,039,145
1882	154,850,735	38,692,480	193,543,215	441,763,065
1883	136,864,840	46,797,690	183,662,530	496,194,800
1884	122,133,180	41,559,485	163,692,665	431,392,705
1885	109,969,105	45,503,840	155,472,945	432,394,065
1886	134,124,380	53,914,645	188,039,025	408,000,985
1887	147,739,000	53,461,750	201,200,750	415,245,370

Statement compiled from consular returns, showing value of declared exports from the United Kingdom to the United States for the year ending September 30, 1888, together with value for preceding year, also column exhibiting decrease or increase for period named.

District.	Staple (if any).	1887.	1888.	Decrease.	Increase.
Belfast	Linens and cottons	$8,789,274.12	$9,827,165.47		$1,037,891.35
Birmingham	Hardware	3,470,593.85	3,512,590.05		41,996.20
Bradford	Stuff goods	16,554,821.28	19,123,358.29		2,568,537.01
Bristol	Woolens	533,273.00	803,661.00		270,388.00
Cardiff	Tin-plates	3,758,435.38	5,400,611.49		1,642,176.11
Cork	Feathers	139,396.30	127,334.44	$12,061.86	
Dublin	Beer	1,130,616.11	1,262,009.09		131,392.98
Dundee	Burlaps and linens	7,220,197.56	8,170,227.22		950,029.66
Dunfermline	Linens	1,790,990.94	2,096,263.11		305,272.17
Falmouth	China clay	46,103.13	77,471.67		31,368.54
Glasgow	Iron and cotton goods	7,863,682.55	9,320,713.01		1,457,030.46
Hull	Colors	281,673.44	410,568.37		128,894.93
Leeds	Woolens and worsteds	5,854,348.67	5,921,449.57		67,100.90
Leith	Books	805,151.75	1,144,151.66		338,999.91
Liverpool	Tin-plates and chemicals	32,801,068.76	35,136,418.55		2,335,349.79
London		55,900,183.80	50,889,914.82	5,010,268.98	
Manchester	Cottons	10,781,705.59	11,075,448.91		293,743.32
Newcastle-on-Tyne	Steel and chemicals	3,451,490.86	3,005,493.87	445,996.99	
Nottingham	Hosiery and lace	5,862,050.70	5,660,807.50	201,243.20	
Plymouth	China clay	133,132.40	221,143.11		88,010.71
Sheffield	Cutlery	4,120,579.95	3,321,586.44	798,993.51	
Southampton	Cement	7,371.55	14,731.96		7,360.41
Tunstall	Earthen-ware	3,445,178.61	3,821,073.25		375,894.64
Total		174,741,320.30	180,344,192.85	6,468,564.54	12,071,437.09

SUMMARY.

Total for year ending September 30, 1888	$180,344,192.85
Total for year ending September 30, 1887	174,741,320.30
Net total increase	5,602,872.55
Increase in 18 consulates	12,071,437.09
Decrease in 5 consulates	6,468,564.54
Net total increase	5,602,872.55

Statement showing the value of declared exports at the various consular districts of the United States in the United Kingdom for the four quarters of the year ending September 30, 1888, and compared with the corresponding quarter of the previous year, see foregoing tabular statement.

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District.	Quarter ending—				Total for the year.
	Dec. 31, 1887.	March 31, 1888.	June 30, 1888.	Sept. 30, 1888.	
Belfast	$2,417,630.93	$2,849,372.29	$1,869,055.78	$2,691,106.47	$9,827,165.47
Birmingham	932,290.31	831,980.57	805,706.05	942,613.12	3,512,590.05
Bradford	4,092,141.54	4,592,066.10	4,945,936.88	5,493,213.77	19,123,358.29
Bristol	398,740.00	154,421.00	97,731.00	152,769.00	803,661.00
Cardiff	789,797.64	703,154.41	789,169.73	3,118,489.71	5,400,611.49
Cork	40,574.92	21,517.59	33,126.60	32,115.33	127,334.44
Dublin	396,162.91	244,032.65	321,444.91	300,368.62	1,262,009.09
Dundee	1,865,789.98	2,190,563.01	1,990,314.40	2,123,559.83	8,170,227.22
Dunfermline	517,202.72	613,750.41	366,580.73	598,729.25	2,096,263.11
Falmouth	15,509.83	9,226.48	4,738.21	47,997.15	77,471.67
Glasgow	2,623,086.63	2,511,203.57	1,957,966.92	2,228,455.89	9,320,713.01
Hull	91,658.97	189,142.12	66,186.46	63,580.82	410,568.37
Leeds	1,529,060.03	1,522,946.28	1,387,027.93	1,482,415.33	5,921,449.57
Leith	310,772.51	294,353.47	258,319.87	280,705.81	1,144,151.66
Liverpool	9,108,934.86	8,227,898.93	8,279,894.25	9,519,690.51	35,136,418.55
London	11,490,657.61	14,508,428.59	13,846,191.77	11,044,636.85	50,889,914.82
Manchester	2,729,500.01	2,921,538.68	2,534,188.85	2,890,221.37	11,075,448.91
Newcastle	914,026.59	767,433.19	772,765.11	551,248.98	3,005,493.87
Nottingham	1,331,129.94	1,692,455.85	1,138,943.95	1,498,277.76	5,660,807.50
Plymouth	63,545.77	45,619.49	41,390.59	70,587.26	221,143.11
Sheffield	1,057,441.10	762,579.56	752,819.19	748,746.59	3,321,586.44
Southampton	592.83	8,154.51	4,099.14	1,885.48	14,732.96
Tunstall	910,611.04	938,658.37	937,543.15	1,034,260.69	3,821,073.25
Total	43,626,858.67	46,600,497.12	43,201,161.47	46,915,675.59	180,344,192.85
Total for preceding year	40,577,908.28	43,988,816.76	41,023,160.67	49,151,434.59	
Increase	3,048,950.39	2,611,680.36	2,178,000.80	.....	7,838,632.55
Decrease	.....	.....	.....	2,235,759.00	2,235,759.00
Net increase for year ending September 30, 1888	.....	.....	.....	.....	5,602,872.55

Statement showing value of declared exports from the various consular districts of the United Kingdom of Great Britain and Ireland to the United States of America, from October 1 1878, to September 30, 1888.

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Year ending September 30—	Amount.
Belfast:	
1879	$7,328,156.19
1880	9,415,832.81
1881	7,856,100.68
1882	9,412,627.07
1883	8,136,805.43
1884	6,842,100.73
1885	7,800,096.65
1886	8,391,933.19
1887	8,789,274.12
1888	9,827,165.47
Total	83,800,092.34
Birmingham:	
1879	2,435,271.89
1880	4,920,433.58
1881	4,376,611.92
1882	5,178,118.16
1883	4,719,827.19
1884	3,977,812.16
1885	2,875,388.26
1886	3,218,881.93
1887	3,470,593.85
1888	3,512,590.05
Total	38,685,528.99
Bradford:	
1879	5,955,287.85
1880	10,731,646.49
1881	7,091,394.18
1882	8,385,638.20
1883	9,463,444.93
1884	13,601,042.51
1885	11,565,989.95
1886	18,319,924.26
1887	16,554,821.28
1888	19,123,358.29
Total	120,792,547.94
Bristol:	
1879	164,552.24
1880	157,177.01
1881	137,978.33
1882	166,304.00
1883	174,567.33
1884	202,126.51
1885	399,655.00
1886	463,995.00
1887	533,273.00
1888	803,661.00
Total	3,203,289.42
Cardiff:	
1879	607,331.57
1880	1,824,812.07
1881	2,148,560.56
1882	2,368,766.84
1883	1,672,831.14
1884	4,373,767.29
Cardiff—Continued.	
1885	$3,785,602.65
1886	2,378,539.83
1887	3,758,435.38
1888	5,400,611.49
Total	28,319,258.82
Cork:	
1879	83,016.01
1880	308,024.93
1881	179,255.02
1882	124,517.28
1883	86,395.52
1884	71,631.23
1885	65,254.28
1886	256,836.22
1887	139,396.30
1888	127,334.44
Total	1,441,661.23
Dublin:	
1879	702,218.46
1880	1,029,415.77
1881	1,172,754.17
1882	976,981.35
1883	903,478.07
1884	937,414.91
1885	781,782.04
1886	1,032,404.87
1887	1,130,616.11
1888	1,262,009.09
Total	9,929,074.84
Dundee:	
1879	5,112,470.82
1880	8,224,285.20
1881	7,381,189.83
1882	7,892,926.82
1883	7,917,358.37
1884	7,666,359.66
1885	6,335,495.71
1886	6,858,574.36
1887	7,220,197.56
1888	8,170,227.22
Total	72,779,085.55
Dunfermline:	
1879	1,443,045.32
1880	2,160,227.76
1881	1,889,286.45
1882	2,404,535.63
1883	2,139,489.62
1884	1,846,596.28
1885	1,598,759.89
1886	1,659,097.14
1887	1,790,990.94
1888	2,096,263.11
Total	19,028,292.14

Statement showing value of declared exports from the various consular districts, etc.—Cont'd.

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Year ending September 30—	Amount.
Falmouth:	
1879	$67,253.47
1880	132,469.40
1881	76,517.79
1882	108,013.53
1883	53,684.43
1884	104,732.18
1885	98,655.54
1886	59,043.13
1887	46,103.13
1888	77,471.67
Total	823,944.27
Glasgow:	
1879	5,298,345.00
1880	9,219,927.88
1881	9,723,231.70
1882	10,219,715.60
1883	9,662,722.89
1884	7,381,874.93
1885	5,285,319.35
1886	6,549,455.96
1887	7,863,682.55
1888	9,320,713.01
Total	80,524,988.87
Gloucester:	
1879	(*)
1880	195,880.38
1881	256,572.62
1882	143,991.74
1883	198,171.52
1884	212,375.36
1885	154,930.79
1886	140,753.74
1887	(†)
1888	(†)
Total	1,302,676.15
Hull:	
1879	131,683.09
1880	547,247.23
1881	272,353.48
1882	384,164.81
1883	371,324.57
1884	459,468.67
1885	433,112.51
1886	249,066.87
1887	281,673.44
1888	410,568.37
Total	3,540,663.04
Leeds:	
1879	1,556,965.96
1880	3,615,338.09
1881	2,839,801.07
1882	4,776,336.87
1883	4,508,734.53
1884	5,377,193.16
Leeds—Continued.	
1885	$3,884,045.99
1886	5,179,506.35
1887	5,854,348.67
1888	5,921,449.57
Total	43,513,720.26
Leith:	
1879	368,939.12
1880	548,321.12
1881	587,578.90
1882	735,938.67
1883	906,710.92
1884	993,368.76
1885	895,903.50
1886	843,961.62
1887	805,151.75
1888	1,144,151.66
Total	7,830,026.02
Liverpool:	
1879	23,062,247.11
1880	42,689,566.16
1881	29,119,805.55
1882	34,781,520.69
1883	32,594,517.92
1884	28,728,569.10
1885	26,677,507.59
1886	33,532,938.68
1887	32,801,068.76
1888	35,136,418.55
Total	319,024,160.11
London:	
1879	24,420,872.05
1880	62,681,120.18
1881	50,549,973.44
1882	54,240,152.97
1883	48,015,188.59
1884	46,003,504.86
1885	37,323,547.79
1886	51,632,923.19
1887	55,900,183.80
1888	50,889,914.62
Total	481,657,381.69
Londonderry:	
1879	2,133.92
1880	2,610.03
1881	1,552.93
1882	169,918.81
1883	2,816.81
1884	2,016.97
1885	1,401.35
1886	4,235.91
1887	(‡)
1888	(‡)
Total	186,686.73

* Hitherto an agency of the Bristol consulate. † Now an agency of the Bristol consulate.

‡ Included in returns from Belfast consulate.

Statement showing value of declared exports from the various consular districts, etc.—Cont'd.

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Year ending September 30—	Amount.
Manchester:	
1879	$8,814,443.92
1880	15,236,381.28
1881	12,148,327.29
1882	14,383,407.28
1883	14,564,425.85
1884	13,479,474.91
1885	10,583,050.34
1886	11,281,578.09
1887	10,781,705.59
1888	11,075,448.91
Total	122,348,243.46
Newcastle-on-Tyne:	
1879	1,018,306.44
1880	2,328,551.69
1881	2,635,311.35
1882	2,994,655.69
1883	2,459,253.23
1884	2,202,483.25
1885	1,786,211.85
1886	1,940,896.69
1887	3,451,490.86
1888	3,005,493.87
Total	23,822,654.92
Nottingham:	
1879	4,421,233.42
1880	7,137,796.16
1881	8,467,304.18
1882	9,774,548.65
1883	8,381,569.89
1884	6,536,813.48
1885	5,288,572.34
1886	5,731,355.84
1887	5,862,050.70
1888	5,660,807.50
Total	67,262,052.16
Plymouth:	
1879	10,611.34
1880	38,154.94
1881	59,130.95
1882	89,117.46
1883	152,014.43
1884	245,087.15
Plymouth—Continued.	
1885	$90,727.70
1886	97,866.35
1887	133,132.40
1888	221,143.11
Total	1,136,985.83
Sheffield:	
1879	2,723,943.18
1880	5,189,692.84
1881	5,955,769.89
1882	6,217,748.54
1883	3,947,766.91
1884	3,069,771.88
1885	2,186,745.21
1886	2,546,092.71
1887	4,120,579.95
1888	3,321,586.44
Total	39,279,697.55
Southampton:	
1879	64,189.22
1880	34,532.49
1881	43,938.87
1882	90,365.87
1883	99,396.63
1884	148,558.88
1885	5,974.05
1886	6,437.48
1887	7,372.55
1888	14,731.96
Total	515,497.00
Tunstall:	
1879	2,687,476.73
1880	3,703,844.73
1881	3,815,760.65
1882	3,419,833.88
1883	4,075,490.89
1884	2,890,551.83
1885	2,809,865.56
1886	3,136,018.95
1887	3,445,178.61
1888	3,821,073.25
Total	33,765,095.08

SUMMARY.

1879	$98,479,994.32
1880	191,973,290.22
1881	158,786,061.80
1882	179,439,846.41
1883	165,207,987.61
1884	157,314,696.65
1885	132,723,595.89
1886	165,512,318.36
1887	174,742,320.30
1888	180,344,192.85
Gross total for the ten years ending September 30, 1888	1,604,513,304.41

Recapitulation for the ten years ending September 30, 1888.

London	$481,657,381.69	Newcastle	$23,822,654.92
Liverpool	319,024,160.11	Dunfermline	19,028,292.14
Manchester	122,348,243.46	Dublin	9,989,074.84
Bradford	120,792,547.94	Leith	7,830,026.09
Belfast	83,800,092.34	Hull	3,540,663.04
Glasgow	80,524,988.87	Bristol	3,203,289.42
Dundee	72,779,085.55	Cork	1,442,661.23
Nottingham	67,262,052.16	Gloucester*	1,302,676.15
Leeds	43,513,720.26	Plymouth	1,136,985.83
Sheffield	39,279,697.55	Falmouth	823,944.27
Birmingham	38,685,528.99	Southampton	515,497.00
Tunstall	33,765,095.08	Londonderry†	186,686.73
Cardiff	28,319,258.82	Total	$1,604,513,304.41

*These figures represent only the declared value of exports for the seven years ending September 30, 1886, those for the years 1879, 1887, and 1888 being embodied in the report from Bristol, of which consulate Gloucester was then, and is again, an agency.

†These figures represent only the declared value of exports for the years ending September 30, 1886, the returns from Londonderry being now embodied in the report from Belfast.

SHIPPING.

The official returns show that exactly the same number of vessels were built in 1887 as in 1886, viz., 736, but the tonnage built shows an increase of 45,670 tons.

The total number of vessels entering at ports in the United Kingdom in 1887 was 357,405 of 77,664,486 tons, of which 331,897 vessels of 68,076,174 tons were British; and the total number of vessels clearing was 319,024 of 71,978,474 tons, of which 293,885 vessels of 62,504,196 tons were British.

The number of vessels lost at sea in 1886 was 641 of 214,369 tons as compared with 557 vessels of 217,191 tons in 1885. The number of persons lost by wreck and casualties was 1,336, a decrease of 95 compared with 1885.

Total number and tonnage of registered vessels of the United Kingdom, Isle of Man, and Channel Islands, which were employed in the home and foreign trade, and the number of persons (exclusive of masters) employed therein.

Description.	No.	Tons.	Persons employed.		
			British.	Foreign.	Total.*
1887.					
Sailing	12,694	3,114,430	68,278	13,053	81,442
Steam	5,029	4,009,324	92,634	10,993	121,101
Total	17,723	7,123,754	160,912	24,046	202,543
1886.					
Sailing	12,997	3,232,238	71,233	13,997	85,415
Steam	4,920	3,911,865	91,381	11,186	129,055
Total	17,917	7,144,097	162,614	25,183	204,470
1885.					
Sailing	13,775	3,319,563	75,844	15,124	90,968
Steam	5,016	3,889,600	95,741	12,072	107,813
Total	18,791	7,209,163	171,585	27,196	198,781

*Including Lascars and Asiatics

Total number and net tonnage of vessels built in the United Kingdom, exclusive of vessels built for foreigners.

[The figures are those of the ships finished building in the years mentioned.]

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Description.	Iron.		Steel.		Wood.		Total.*	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons
1887.								
Sailing	44	46,557	34	25,235	179	9,357	258	81,279
Steam	76	18,910	227	205,907	18	610	322	225,440
Total	120	65,467	261	231,142	197	9,967	580	306,719
1886.								
Sailing	93	92,337	39	31,767	227	13,908	363	138,362
Steam	122	44,923	155	109,253	29	455	308	154,638
Total	215	137,260	194	141,020	256	14,363	671	293,000
1885.								
Sailing	154	155,460	32	34,468	265	17,280	459	208,411
Steam	182	87,815	159	108,287	51	866	393	196,975
Total	336	243,275	191	142,755	316	18,146	852	405,386

*Including composite vessels.

Number and net tonnage of sailing and steam vessels built at ports in the United Kingdom for foreigners in the year 1887.

Description.	1887.		1886.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
War.								
Steam	17	3,966	17	840	.....	3,126	.....	.....
Mercantile.								
Sailing	14	5,848	8	6,887	6	.....	.....	1,039
Steam	*125	*60,665	40	30,801	85	29,864	.....	.....
Total	139	66,513	48	37,688	91	28,825	.....	.....
Summary.								
Sailing	14	5,848	8	6,887	6	.....	.....	1,039
Steam	*142	*64,631	57	31,641	85	32,990	.....	.....
Total	156	70,479	65	38,528	91	31,951	.....	.....

*Including a composite vessel of 25 tons net.

Number and tonnage of vessels belonging to the United Kingdom totally lost (exclusive of vessels of the Royal navy) and number of passengers and crew lost.

Description.	No.	Tons.	Persons lost.		
			Crew.	Passengers.	Total.
Sailing.					
1885	422	111,045	875	24	899
1886	508	123,891	855	31	886
Increase	86	2,846	.....	7	.....
Decrease	.....	.....	20	.....	13

Number and tonnage of vessels belonging to the United Kingdom, totally lost, etc.—Continued.

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Description.	No.	Tons.	Persons lost.		
			Crew.	Passengers.	Total.
Steam.					
1885	135	106,146	494	38	532
1886	133	90,478	413	37	450
Decrease	2	15,668	81	1	82
Summary.					
1885	557	217,191	1,369	62	1,431
1886	641	214,369	1,268	68	1,336
Increase	84	.....	.....	6	.....
Decrease	.....	2,822	101	.....	95

Number and tonnage of sailing and steam vessels of each nationality entered with cargo and in ballast at ports in the United Kingdom from and to foreign countries and British possessions.

Flag.	1886.		1887.		Increase over 1886.		Decrease from 1886.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Sailing.								
Austrian	68	38,999	63	39,358	.....	359	5	.....
Belgian	6	316	6	1,987	.....	1,671	.....	.....
British	7,240	2,949,580	6,862	2,828,252	.....	.....	378	121,328
Danish	1,907	261,301	1,861	263,215	.....	1,914	46	.....
Dutch	489	101,221	462	99,594	.....	.....	27	1,627
French	1,536	193,669	1,432	181,194	.....	.....	104	12,475
German	2,047	529,866	1,960	536,538	.....	6,672	87	.....
Italian	399	235,093	349	211,131	.....	.....	50	23,962
Norwegian	4,831	1,633,330	4,938	1,643,424	107	10,094	.....	.....
Russian	537	179,561	603	196,011	66	16,450	.....	.....
Spanish	81	24,814	88	24,121	7	.....	.....	693
Swedish	1,202	307,958	1,244	331,440	42	23,482	.....	.....
United States	113	164,645	75	114,219	.....	.....	38	50,426
Other countries	13	4,456	21	8,869	8	4,413	.....	.....
Total	20,469	6,624,809	19,964	6,479,353	.....	.....	505	145,456
Steam.								
Austrian	19	15,466	30	25,060	11	9,594	.....	.....
Belgian	894	304,157	1,017	331,248	123	27,091	.....	.....
British	28,137	19,791,481	29,689	20,818,192	1,552	1,026,711	.....	.....
Danish	892	458,608	904	444,911	12	.....	.....	13,697
Dutch	884	632,190	1,077	800,766	193	168,576	.....	.....
French	1,357	699,612	1,394	700,548	37	936	.....	.....
German	2,112	1,216,709	2,140	1,226,881	28	10,172	.....	.....
Italian	26	29,365	39	61,517	13	32,152	.....	.....
Norwegian	764	288,703	742	282,968	.....	.....	22	5,735
Russian	64	37,208	83	55,097	19	17,889	.....	.....
Spanish	477	444,093	484	438,520	7	.....	.....	5,573
Swedish	644	369,152	673	383,202	29	14,050	.....	.....
United States	15	28,403	17	34,440	2	6,037	.....	.....
Other countries	87	95,662	100	94,678	13	.....	.....	984
Total	36,372	24,410,809	38,389	25,698,028	2,017	1,287,219	.....	.....

Number and tonnage of sailing and steam vessels of each nationality entered with cargoes and in ballast at ports in the United Kingdom, etc.—Continued.

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Flag.	1886.		1887.		Increase over 1886.		Decrease from 1886.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Summary.								
Austrian	87	54,465	93	64,418	6	9,953		
Belgian	900	304,473	1,023	333,235	123	28,762		
British	35,377	22,741,061	36,551	23,646,444	1,174	905,383		
Danish	2,799	719,909	2,765	708,126			34	11,783
Dutch	1,373	733,411	1,539	900,360	166	166,949		
French	2,893	893,281	2,826	881,742			67	11,539
German	4,159	1,746,575	4,100	1,763,419		16,844	59	
Italian	425	264,458	388	272,648		8,190	37	
Norwegian	5,595	1,922,033	5,680	1,926,392	85	4,359		
Russian	601	216,769	686	251,108	85	34,339		
Spanish	558	468,907	572	462,641	14			6,266
Swedish	1,846	677,110	1,917	714,642	71	37,532		
United States	128	193,048	92	148,659			36	44,389
Other countries	100	100,118	121	103,547	21	3,429		
Total	56,841	31,035,618	58,353	32,177,381	1,512	1,141,763		

Number and tonnage of sailing and steam vessels of each nationality cleared with cargoes and in ballast at ports in the United Kingdom from and to foreign countries and British possessions.

Flag.	1886.		1887.		Increase over 1886.		Decrease from 1886.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Sailing.								
Austrian	66	38,151	66	39,818		1,667		
Belgian	2	1,386	6	4,112	4	2,726		
British	7,375	3,086,532	6,775	2,964,361			600	122,171
Danish	2,027	278,442	2,030	289,125	3	10,683		
Dutch	482	102,265	477	105,414		3,149	13	
French	1,519	192,956	1,407	182,058			112	10,898
German	2,086	542,275	2,034	559,578		17,303	52	
Italian	405	238,675	361	217,746			44	20,929
Norwegian	4,828	1,628,077	5,004	1,683,316	176	55,239		
Russian	531	173,682	589	188,188	58	14,506		
Spanish	81	22,938	82	22,867	1			71
Swedish	1,223	321,438	1,270	337,912	47	16,474		
United States	122	172,762	73	108,151			49	64,611
Other countries	31	12,996	28	13,583		587	3	
Total	20,778	6,812,575	20,194	6,716,229			584	96,346
Steam.								
Austrian	23	19,876	33	27,442	10	7,566		
Belgian	895	314,867	1,009	326,500	114	11,633		
British	28,535	20,250,706	30,037	21,339,132	1,502	1,088,426		
Danish	913	465,324	922	461,111	9			4,213
Dutch	895	651,294	1,081	789,891	186	138,597		
French	1,344	696,515	1,390	692,203	46			4,312
German	2,139	1,247,076	2,146	1,227,162	7			19,914
Italian	35	34,712	53	79,322	18	44,610		
Norwegian	777	298,750	732	283,523			45	15,227

Number and tonnage of sailing and steam vessels of each nationality cleared with cargoes and in ballast at ports in the United Kingdom, etc. — Continued.

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Flag.	1886.		1887.		Increase over 1886.		Decrease from 1886.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Steam — Continued.								
Russian	68	39,165	86	52,855	18	13,690	.....	.....
Spanish	494	460,221	500	455,105	6	.....	.....	5,116
Swedish	677	387,528	684	389,510	7	1,982	.....	.....
United States	14	26,458	17	35,245	3	8,787	.....	.....
Other countries	101	100,392	148	109,163	47	8,771	.....	.....
Total	36,910	24,992,884	38,838	26,268,164	1,928	1,175,280	.....	.....
Summary.								
Austrian	89	58,027	99	67,260	10	9,233	.....	.....
Belgian	897	316,253	1,015	330,612	118	14,359	.....	.....
British	35,910	23,337,238	36,812	24,303,493	902	966,255	.....	.....
Danish	2,940	743,766	2,952	750,236	12	6,470	.....	.....
Dutch	1,377	753,559	1,550	895,305	173	141,746	.....	.....
French	2,863	889,471	2,797	874,261	.....	.....	66	15,210
German	4,225	1,789,351	4,180	1,786,740	.....	.....	45	2,611
Italian	440	273,387	414	297,068	.....	23,681	26	.....
Norwegian	5,605	1,926,827	5,736	1,966,839	131	40,012	.....	.....
Russian	599	212,847	675	241,043	76	28,196	.....	.....
Spanish	575	483,159	582	477,972	7	.....	.....	5,187
Swedish	1,900	708,966	1,954	727,422	54	18,456	.....	.....
United States	136	199,220	90	143,396	.....	.....	46	55,824
Other countries	132	113,388	176	122,746	44	9,358	.....	.....
Total	57,688	31,805,459	59,032	32,984,393	1,344	1,178,934	.....	.....

Number and tonnage of British and foreign vessels (sailing and steam) entered with cargoes and in ballast at the principal ports in the United Kingdom from and to foreign countries and British possessions.

Port.	1886.		1887.		Increase over 1886.		Decrease from 1886.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Cardiff	3,511	2,393,786	3,620	2,536,129	109	142,343	.....	.....
Dublin	360	207,100	380	240,459	20	23,359	.....	.....
Glasgow	891	913,037	939	972,032	48	58,995	.....	.....
Hull	2,844	1,673,783	3,106	1,816,296	262	142,513	.....	.....
Leith	1,429	655,147	1,303	636,521	.....	.....	126	18,626
Liverpool	4,367	5,017,815	4,477	5,186,393	110	168,578	.....	.....
London	10,305	6,810,647	10,457	6,880,187	152	69,540	.....	.....
Newport	1,447	885,331	1,575	950,743	128	65,412	.....	.....
Southampton	1,781	841,032	1,733	809,162	.....	.....	48	31,870
Sunderland	1,564	707,977	1,538	748,182	.....	40,205	26	.....
Swansea	1,470	541,295	1,462	532,899	.....	.....	8	8,396
Tyne ports	5,414	2,753,425	4,653	2,368,282	.....	.....	761	385,143
Total	35,383	23,410,375	35,243	23,677,285	.....	266,710	140	.....

Number and tonnage of British and foreign vessels (sailing and steam) cleared with cargoes and in ballast at the principal ports in the United Kingdom from and to foreign countries and British possessions.

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Port.	1886.		1887.		Increase over 1886.		Decrease from 1886.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Cardiff	5,390	4,174,950	5,925	4,714,247	535	539,297	.....	.....
Dublin	130	68,907	145	88,702	15	19,795	.....	.....
Glasgow	1,237	1,369,622	1,385	1,464,326	148	94,704	.....	.....
Hull	2,374	1,324,585	2,769	1,535,238	395	210,653	.....	.....
Leith	936	472,476	938	502,068	2	29,592	.....	.....
Liverpool	4,029	4,714,654	4,005	4,758,525	.....	43,871	14	.....
London	7,755	5,215,984	8,094	5,284,149	339	68,165	.....	.....
Newport	1,953	1,279,131	2,185	1,482,436	232	203,305	.....	.....
Southampton	1,665	752,050	1,648	749,739	.....	.....	17	2,311
Sunderland	1,717	891,899	1,879	1,000,278	162	108,379	.....	.....
Swansea	1,916	726,511	1,921	746,459	5	19,948	.....	.....
Tyne ports	7,688	4,242,076	6,608	3,665,990	.....	.....	1,080	576,086
Total	36,780	25,232,845	37,502	25,992,157	722	759,312	.....	.....

AGRICULTURE.

The returns for the United Kingdom show an increase in the total area under cultivation of 2,445 acres. Corn and green crops have each increased. Rotation grasses and permanent pasture both show a decrease. Cattle and sheep have each decreased, while pigs are greater in number.

The cold and wet spring and summer were disastrous to the corn growers. The extent to which Russia last year displaced the United States as a supplier of wheat to this country is shown by the following figures:

Country.	Quantity.		Value.	
	1888.	1887.	1888.	1887.
	Cwts.	*Cwts.*		
Russia	21,369,000	5,523,000	$40,490,000	$9,955,000
United States	14,647,000	30,504,000	28,420,000	59,930,000

The changes which these figures show are due to the fact that while the Russian crop was exceptionally large the American crop was below the average. In addition to the decline in wheat the imports of flour from the United States were also upon a decidedly smaller scale. Owing partly to an improved demand for meat and partly to the abundance of feed, the value of cattle and sheep rose considerably during the summer. It has been estimated that cattle sold on an average during the year at $10 each and sheep at $2 to $2.50 each more than in 1887.

The following tables give the total amount of land under cultivation and the total number of live stock in the United Kingdom for 1888 compared with 1887:

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Acreage.	1888.	1887.	Increase.	Decrease.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Corn crops	9,785,697	9,735,400	50,297	.....
Green crops	4,729,191	4,716,679	12,512	.....
Clover, etc., under rotation:				
For hay	2,934,783	2,975,094	.....	40,311
Not for hay	3,044,568	3,051,852	.....	7,284
Flax	115,795	133,904	.....	18,109
Hops	58,494	63,709	.....	5,215
Small fruit	36,941	(*)	36,941	.....
Bare fallow	473,116	498,992	.....	25,876
Total of arable land	21,178,585	21,175,630	2,955	.....
Total of permanent pasture:				
For hay	6,380,013	6,077,660	302,353	.....
Not for hay	20,318,216	20,621,079	.....	302,863
Total cultivated area	47,876,814	47,874,369	2,445	.....
Total area of United Kingdom	77,799,793	77,799,793	.....	.....

*Not separately distinguished.

Live stock.

Stock.	1888.	1887.	Increase.	Decrease.
	No.	*No.*	*No.*	*No.*
Horses	1,936,702	1,936,925	.....	223
Cattle	10,268,600	10,639,960	.....	371,360
Sheep	28,938,716	29,401,750	.....	463,034
Pigs	3,815,643	3,720,957	94,686	.....

The following table gives the number, total value, and average value per head of home-bred horses exported from the United Kingdom to each foreign country and British possession in each of the years 1886 and 1887:

Country.	1886.			1887.		
	Number.	Total value.	Average value per head.	Number.	Total value.	Average value per head.
Argentine Confederation	115	$70,065	$609	313	$224,435	$718
Austria	.....	.....	.....	2	500	250
Belgium	1,760	377,035	214	2,155	464,125	215
Brazil	24	22,025	913	58	40,265	694
Cyprus	.....	.....	.....	1	350	350
Denmark	4	1,275	318	5	750	150
Egypt	2	800	400	4	1,300	325
France	498	154,420	310	396	158,575	400
Germany	451	91,020	202	645	148,930	231
Greece	.....	.....	.....	3	1,200	400
Holland	1,500	283,490	188	1,455	315,145	216
Italy	.....	.....	.....	6	3,400	566
Japan	3	6,000	2,000	.....	.....	.....
Java	.....	.....	.....	3	1,050	350
Norway	.....	.....	.....	1	125	125
Portugal and Portuguese possessions	26	16,910	650	81	27,900	715
Russia	38	23,380	615	5	1,225	245
Spain	2	900	450	13	4,675	359
Sweden	10	4,500	450	11	4,950	450
United States	1,173	360,020	307	1,745	338,770	194
Uruguay	7	5,100	728	38	25,125	661
Venezuela	2	1,600	800	.....	.....	.....
Total, foreign countries	5,615	1,418,540	252	6,940	1,792,795	258
Australasia:						
New South Wales	4	6,850	1,712	7	15,500	2,214
Queensland	4	3,000	750	2	3,000	1,250
South Australia	2	1,100	550	1	550	550
Victoria	31	38,800	1,251	4	4,125	1,031
Western Australia	1	800	800	.....	.....	.....
New Zealand	.....	.....	.....	1	3,750	3,750
Bermudas	2	105	52	.....	.....	.....
Canada	1,589	554,415	349	2,389	862,795	361
Cape of Good Hope	1	2,000	2,000	19	13,300	700
Ceylon	2	925	462	2	1,300	650
Channel Islands	57	5,940	104	49	6,080	124
Gibraltar	3	1,725	575	7	4,000	571
Guiana (British)	.....	.....	.....	1	625	625
Honduras (British)	3	1,250	417	.....	.....	.....
India:						
Bengal	.....	.....	.....	1	200	200
Bombay	7	6,975	996	26	23,175	891
Madras	1	500	500	.....	.....	.....
Natal	1	500	500	.....	.....	.....
West Indies (British)	3	1,800	600	14	5,785	413
Total British possessions	1,711	626,685	366	2,523	944,185	374
Grand total	7,326	2,045,225	279	9,463	2,736,980	289

The following table gives the number, total value, and average value per head of foreign-bred horses exported from the United Kingdom to each foreign country and British possession in the years 1886 and 1887:

Country.	1886.			1887.		
	Number.	Total value.	Average value per head.	Number.	Total value.	Average value per head.
Brazil	.....	.....	.....	3	$3,100	$1,033
Canada	33	$15,000	$454	.....	.....	.....
Denmark	6	205	34	1	30	30
France	1	200	200	13	2,300	177
United States	102	19,825	194	342	66,580	194
Total	142	35,230	248	359	72,010	200

The following tables show the acreage, estimated total produce, and estimated average yield per acre of wheat, barley, oats and maize, in the United Kingdom and in certain foreign countries and British possessions in the years 1885, 1886, 1887:

Acreage in English statute acres.

Countries.	Wheat.			Barley.		
	1885.	1886.	1887.	1885.	1886.	1887.
Australasia [a]	1,531,916	1,718,470	2,060,244	127,430	73,347	84,163
Austria-Hungary. Austria	2,949,325	2,899,555	.....	2,881,048	2,761,460	.....
Austria-Hungary. Hungary.	6,769,507	6,827,154	6,858,155	2,583,296	2,579,222	2,480,124
Canada [b]	2,042,078	1,848,308	1,814,698	650,062	805,343	823,456
France	[c] 17,183,210	[c] 17,181,733	.....	2,360,371	2,338,349	.....
Germany	4,727,138	4,734,083	4,741,615	4,296,625	4,276,756	4,275,869
Holland	209,364	.....	.....	122,512	.....	.....
India	27,392,742	26,735,484	26,854,882	.....	.....	.....
Sweden	[d] 1,073,230	[d] 1,079,331	.....	[e] 2,604,196	[e] 2,647,435	.....
United Kingdom [f]	2,549,335	2,355,451	2,384,505	[g] 2,436,823	[g] 2,423,060	[g] 2,247,583
United States	34,189,246	36,806,184	37,641,783	2,729,359	2,652,957	.....

Countries.	Oats.			Maize.		
	1885.	1886.	1887.	1885.	1886.	1887.
Australasia [a]	590,650	620,451	578,311	[h] 209,136	[h] 227,595	[h] 250,996
Austria-Hungary. Austria	4,517,746	4,614,316	.....	908,113	895,526	.....
Austria-Hungary. Hungary.	2,564,376	2,601,975	2,582,615	4,631,993	4,727,973	4,515,447
Canada [b]	1,700,771	1,782,931	1,837,639	[i] 167,831	[i] 156,494	[i] 163,893
France	9,113,381	9,228,152	.....	[j] 1,506,962	[j] 1,481,318	(j)
Germany	9,328,789	9,402,141	9,411,303	.....	.....	.....
Holland	282,951	.....	.....	.....	.....	.....
United Kingdom [f]	4,269,359	4,403,579	4,403,044	.....	.....	.....
United States	22,783,630	23,658,474	25,920,906	73,130,150	75,694,208	72,392,720

[a] Exclusive of South Australia.
[b] Provinces of Ontario and Manitoba only.
[c] Including spelt.
[d] Including rye.
[e] Including oats and mixed corn.
[f] Exclusive of Channel Islands and Isle of Man.
[g] Including bere.
[h] New South Wales, Victoria, Western Australia, and Queensland only.
[i] Province of Ontario only.
[j] Including millet.

Estimated total produce in English imperial bushels.

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Country.	Wheat.			Barley.		
	1885.	1886.	1887.	1885.	1886.	1887.
Australasia *a*	17,096,480	25,208,828	28,575,661	2,561,149	1,682,301	1,955,326
Austria-Hungary. Austria	46,793,120	43,267,400	.....	50,448,393	51,611,340	.....
Austria-Hungary. Hungary	119,296,040	99,674,944	141,407,195	52,638,328	36,695,676	53,998,222
Belgium	16,640,770	16,572,476	.....	5,547,124	3,567,509	.....
Canada *b*	37,597,342	33,309,628	32,425,452	17,866,948	20,476,370	19,060,061
Denmark	5,325,924	5,006,644	5,798,823	22,346,102	23,293,039	22,113,047
France	*c* 302,120,120	*c* 295,039,475	.....	47,892,457	49,206,152	.....
Germany	95,479,888	97,946,604	103,984,867	99,649,231	103,024,042	97,218,616
Holland	6,138,544	.....	.....	5,305,743	.....	.....
India	288,938,496	238,585,947	266,882,112	.....	.....	.....
Italy	106,861,122	109,448,633	.....	8,420,217	8,674,264	.....
Russia *d*	172,378,173	156,546,447	269,085,104	97,169,685	129,739,604	162,498,202
Sweden	3,796,992	3,685,176	4,192,488	13,152,312	15,568,848	14,698,656
United Kingdom *e*	79,635,769	63,347,885	76,224,940	*f* 85,721,632	*f* 78,309,607	*f* 69,948,266
United States	346,201,157	443,248,618	442,386,780	56,576,927	57,612,296	.....

Country.	Oats.			Maize.		
	1885.	1886.	1887.	1885.	1886.	1887.
Australasia *a*	14,383,585	17,420,838	15,893,373	*g* 5,992,647	*g* 5,770,199	*g* 6,905,328
Austria-Hungary. Austria	91,821,537	109,257,929	.....	19,272,165	18,607,820	.....
Austria-Hungary. Hungary	52,763,780	53,293,479	59,599,174	105,728,989	81,860,699	71,441,263
Belgium	24,952,416	28,390,260	.....	.....	.....	.....
Canada *b*	60,763,523	62,138,485	57,113,338	.....	.....	.....
Denmark	31,777,409	32,761,639	29,444,099	.....	.....	.....
France	235,208,119	245,544,010	.....	*h* 26,827,710	*h* 26,324,117	.....
Germany	245,398,841	274,420,263	243,084,642	.....	.....	.....
Holland	12,635,697	.....	.....	.....	.....	.....
Italy	15,255,350	14,352,451	.....	73,010,501	75,190,585	.....
Russia *d*	376,486,153	551,500,062	599,419,912	16,704,727	20,454,650	12,579,177
Sweden	50,297,832	53,352,000	54,784,872	.....	.....	.....
United Kingdom *e*	160,440,907	169,376,088	150,789,416	.....	.....	.....
United States	610,178,667	605,064,834	639,464,691	1,877,020,015	1,614,556,781	1,411,670,913

a Exclusive of South Australia.
b Provinces of Ontario and Manitoba only.
c Including spelt.
d Russia in Europe, including Poland.
e Exclusive of Channel Islands and Isle of Man.
f Including bere.
g New South Wales, Victoria, Western Australia, and Queensland only.
h Including millet.

Estimated average yield per acre in English imperial bushels.

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Country.	Wheat.			Barley.		
	1885.	1886.	1887.	1885.	1886.	1887.
Australasia *a*	11.16	14.67	13.87	20.10	22.94	23.23
Austria-Hungary... Austria	15.87	14.92	.....	17.51	18.69	.....
Austria-Hungary... Hungary	16.29	14.60	20.62	20.38	14.23	21.77
Canada *b*	18.41	18.02	17.87	27.48	25.43	23.15
France	*c* 17.58	*c* 17.17	.....	20.29	21.04	.....
Germany	20.20	20.69	21.93	23.19	24.09	22.74
Holland	29.32	.....	.....	43.31	.....	.....
India	10.55	8.92	9.94	.....	.....	.....
United Kingdom *d*	31.24	26.89	*e* 31.97	*e* 35.18	*e* 32.32	31.12
United States	10.13	12.04	11.75	20.73	21.72	.....

Country.	Oats.			Maize.		
	1885.	1886.	1887.	1885.	1886.	1887.
Australasia *a*	24.35	28.08	27.48	*f* 28.65	*f* 25.35	*f* 27.51
Austria-Hungary... Austria	20.32	23.68	.....	21.22	20.78	.....
Austria-Hungary... Hungary	20.58	20.48	23.08	22.83	17.31	15.82
Canada *b*	35.73	34.85	31.08	.....	.....	.....
France	25.81	26.61	.....	*g* 17.80	*g* 17.77	.....
Germany	26.31	29.19	25.83	.....	.....	.....
Holland	44.66	.....	.....	.....	.....	.....
United Kingdom *d*	37.58	38.46	34.25	.....	.....	.....
United States	26.78	25.57	24.67	25.67	21.33	19.50

a Exclusive of South Australia.
b Provinces of Ontario and Manitoba only.
c Including spelt.
d Exclusive of Channel Islands and Isle of Man.
e Including bere.
f New South Wales, Victoria, Western Australia, and Queensland only.
g Including millet.

FISHERIES.

The general result for the United Kingdom, and allowing for Scotch and Irish salmon, is as follows:

Division.	Fish landed.	
	Weight.	Value.
	Tons.	
England and Wales	301,000	£20,515,000
Scotland, excluding salmon	252,000	6,985,000
Scotland, salmon	.....	1,405,000
Ireland, excluding salmon	45,000	1,580,000
Ireland, salmon	.....	1,465,000
Total	598,000	31,950,000

Comparing the annual value of the sea fisheries of the countries where total values are given, viz.: Norway (1886), $6,190,000; Holland, about the same as Norway; France (1885), $18,545,000; Canada (1886), $19,460,000; United Kingdom (1887), $31,950,000, Mr. Giffen, of the English Board of Trade, says: "The sea fisheries of the United Kingdom appear to be of greater value than the sea fisheries of any other country which publishes tolerably complete records, and probably of greater value than those of any other country in the world."

Comparison can not be made with the United States, as there does not appear to be any annual statistics of the fisheries of the United States as a whole, and no details of such fisheries in any form that could be compared with those given. The only general statement is one contained in the census of 1880, which does not include particulars as to the kinds of fish captured, nor state the value as landed, distinctly and separately.

The following tables show the quantity, value, and average price of fish landed on the English and Welsh and Scotch coasts in 1886 and 1887:

Comparative statement showing the total quantity, value, and average price of fish landed on the English and Welsh coasts in 1886 and 1887.

Description.	1886.		1887.		Average price.	
	Quantity.	Value.	Quantity.	Value.	1886.	1887.
	Cwts.		*Cwts.*		*Per cwt.*	*Per cwt.*
Turbot	59,850	$613,325	63,166	$923,310	$15.26	$14.61½
Soles	98,078	2,137,260	85,316	1,947,070	21.79	22.82
Prime fish, not separately distinguished	*370,014	*1,845,445	*115,850	*1,843,370	4.99	15.90½
Total prime fish	527,942	4,896,030	264,332	4,713,750	9.27	17.83
Salmon	15,066	477,465	17,110	479,410	31.68	28.02
Cod	248,197	963,550	256,155	864,760	3.88	3.37
Ling	57,870	192,245	75,015	240,510	3.32	3.20
Haddock	*1,243,325	*2,210,740	*1,545,604	*2,729,230	1.77½	1.76½
Mackerel	265,290	888,720	290,630	833,045	3.34½	2.86
Herrings	1,973,637	2,346,830	1,605,140	2,208,960	1.18	1.37
Pilchards	353,334	212,435	66,625	106,895	.60	1.60
Sprats	148,318	69,250	118,040	63,490	.46	.53½
All other, except shell-fish	1,519,454	6,183,130	1,236,626	6,654,740	3.91	3.70½
Total	6,412,433	18,440,395	3,688,079	18,894,790	2.87	3.13
Shell-fish:	*No.*		*No.*		*Per 100.*	*Per 100.*
Lobsters	452,097	95,060	517,706	118,280	21.03	22.84½
Crabs	2,863,359	196,310	4,080,637	249,315	6.87	6.10½
Oysters	45,554,000	675,280	53,577,000	816,275	1.47	1.52½
	Cwts.		*Cwts.*		*Per cwt.*	*Per cwt.*
Other	289,009	377,830	343,720	438,635	1.30¾	1.27½
Total	.....	1,344,980	.....	1,622,505	.....	.....
Total value	.....	19,785,375	.....	20,517,295	.....	.....

*There was an error in the classification in 1886, by which a certain quantity of haddocks were included with "other prime fish."

Comparative statement showing the total quantity, value, and average price of fish landed on the Scotch coasts in 1886 and 1887.

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Description.	1886.		1887.		Average price.	
	Quantity.	Value.	Quantity.	Value.	1886.	1887.
	Cwts.		*Cwts.*		*Per cwt.*	*Per cwt.*
Turbot	3,765	$48,555	5,285	$72,125	$12.89	$12.64
Soles	7,584	46,885	11,735	66,955	6.17½	5.70
Cod	343,834	627,880	383,039	639,880	1.82½	1.66
Ling	131,701	238,660	100,593	175,180	1.82	1.75
Haddock	670,972	1,634,415	751,471	1,670,165	4.43	2.21½
Mackerel	2,893	9,440	2,697	8,155	3.26	3.02
Herrings	3,103,284	3,613,270	3,217,361	3,207,860	1.16	1.00
Sprats	21,988	18,595	98,260	27,855	.84	.28
Sparling	176	2,120	190	2,040	12.04	10.74
Torsk (tusk)	9,701	8,835	10,884	8,230	.90½	.75½
Saith (coal fish)	105,683	77,910	109,795	77,250	.74	.69½
Whiting	75,021	144,760	78,719	133,665	1.92	1.69
Halibut	29,778	113,005	18,992	81,625	3.79	4.29½
Flounder (place and brill)	81,134	251,155	96,897	299,220	3.09	3.10
Eel	7,230	21,135	8,506	24,050	2.91½	2.82
Skate	51,643	52,280	45,293	47,535	1.01	1.05
All other (except shell-fish)	71,758	108,055	104,412	110,225	1.50½	1.05½
Total	4,718,145	7,016,955	5,043,529	6,651,970	1.48	1.31½
Shell-fish:	*No.*		*No.*		*Per 100.*	*Per 100.*
Lobsters	777,700	152,565	655,600	129,285	19.61	19.71
Crabs	2,365,600	66,935	2,245,100	61,520	2.82½	2.73
Oysters	295,700	6,480	213,200	4,850	2.18½	2.27
	Cwts.		*Cwts.*		*Per cwt.*	*Per cwt.*
Mussels	257,022	72,195	276,086	76,905	.28	.27½
Clams	12,236	8,875	17,476	11,665	.71½	.66
Other shell-fish	60,999	57,290	55,485	48,620	.93	.87
Total	.....	364,340	.....	332,845	.....	.....
Total value	.....	7,381,295	.....	6,984,815	.....	.....

Number of boats and men and boys employed in sea fisheries in the United Kingdom.

Division.	Boats.	Men and boys.
England	8,390	46,743
Scotland	12,168	49,147
Ireland	6,765	25,404
Isle of Man	387	2,883
Channel Islands	260	1,321
Total	27,970	125,498
Total 1886	28,754	124,604
Increase	.....	894
Decrease	784	.....

MINES.

As evidence of the improved condition of trade in this country it will be observed that the mineral production of 1887 exceeded that of 1886 by $14,674,245 in value. The increase in the output of coal was 4,601,330

tons, valued at $4,734,500, and of pig-iron 550,000 tons, in value $7,500,000. Although the production of tin was 30 tons less than in 1886, the value was $526,000 greater.

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Quantity and value of coal and metals produced in the United Kingdom.

Description.	1887.		1886.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
Coal	162,119,812	$195,464,150	157,528,482	$190,729,650
Pig-iron	7,559,518	88,824,330	7,009,754	79,443,875
Fine copper	889	214,250	1,472	327,315
Metallic lead	37,890	2,434,430	39,482	2,613,250
White tin	9,282	5,243,165	9,312	4,727,910
Zinc	13,042	1,047,980	8,989	705,675
Silver from lead	*320,345	297,820	*325,427	315,255
Other metals	.....	1,050	.....	.....
Total	.....	293,527,175	.....	278,852,930

* Ounces.

BANKRUPTCY.

The total number of receiving orders made during the year 1887, not including those rescinded before being proceeded with, was 4,839, as compared with 4,816 in 1886, the increase being 23, or about one-half per cent. The estimated liabilities have increased from $39,569,355 to $44,679,125, or nearly 13 per cent., but the estimated assets have decreased from $14,275,800 to $13,335,810, or nearly 7 per cent. The percentage of assets to liabilities has fallen from 36.1 per cent. to 29.8 per cent. The total amount of annual loss to creditors in England and Wales through bankruptcy proceedings for the year 1887 is estimated at $35,574,525, against $29,599,010 in the previous year, showing an increase of $5,975,515.

The following table gives the number of bankruptcies, liquidations or schemes, and compositions, with the amount of liabilities and assets for the years 1885–'87:

Statement of the number of bankruptcies, liquidations, and compositions, with the amount of liabilities and assets for the years 1885–'87.

Cases.	1885.	1886.	1887.
Number of cases:			
Bankruptcies	3,965	4,566	4,681
Liquidations	78	61	31
Compositions	290	189	127
Total	4,333	4,816	4,839
Liabilities:			
Bankruptcies	$37,484,060	$33,364,335	$40,643,970
Liquidations	3,737,855	2,961,765	2,280,195
Compositions	3,967,030	3,243,255	1,754,960
Total	45,188,945	39,569,355	44,679,125

Statement showing the bankruptcies, liquidations, etc. — Continued.

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Cases.	1885.	1886.	1887.
Assets:			
Bankruptcies	$12,078,090	$10,506,490	$11,838,240
Liquidation	1,918,020	2,409,875	855,385
Compositions	1,469,645	1,359,435	642,185
Total	15,465,755	14,275,800	13,335,810

NOTE.—Percentage of total assets to total liabilities in 1885, 34.2 per cent.; in 1886, 36.1 per cent.; in 1887, 29.8 per cent.

Statement showing the estimated annual loss arising to creditors in England and Wales through bankruptcy proceedings in 1885, 1886, and 1887.

Annual loss.	1885.	1886.	1887.
Assets:			
Liquidation	$1,918,020	$2,409,875	$855,385
Bankruptcies	12,078,090	10,506,490	11,838,240
Total	13,996,110	12,916,365	12,693,625
Amount after deduction of one-third for expense of realization	9,330,740	8,610,910	8,462,415
Compositions	1,469,645	1,359,435	642,185
Total assets for dividends	10,800,385	9,970,345	9,104,600
Liabilities	45,188,945	39,569,355	44,679,125
Net estimated loss to creditors	34,388,560	29,599,010	35,574,525

Statement showing the number of receiving orders gazetted in the undermentioned trades and occupations during the years 1886 and 1887.

Trades and occupations.	1887.	1886.
	No.	*No.*
Total gazetted	4,838	4,859
Number gazetted in principal trades and occupations:		
Publicans and hotel keepers	342	331
Grocers, etc.	337	365
Farmers	295	332
Builders	269	255
Boot and shoe manufacturers and dealers	152	187
Bakers	108	104
Drapers, haberdashers, etc.	119	125
Butchers	101	81
Tailors, etc	91	132
Jewelers, watch-makers, etc.	90	69
Decorators, painters, plumbers, etc	87	100
Agents, commission and general	83	80
Coal and coke merchants and dealers	66	55
Auctioneers	57	51
Carpenters and joiners	54	70
Cabinet-makers and upholsterers	53	40
Corn, flour, seed, etc., merchants and dealers	52	52
Iron-mongers	52	46
Clerks, commercial and general	44	55
Provision merchants, etc.	44	44
Tobacconists, etc	42	23
Merchants	41	33

Statement showing the number of receiving orders gazetted, etc.—Continued.

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Trades and occupations.	1887.	1886.
Number gazetted in principal trades and occupations—continued.	*No.*	*No.*
Fish-mongers, poulterers, etc.	39	50
General dealers	38	29
Green-grocers, fruiterers, etc.	37	51
Dairymen, etc.	35	20
Printers and publishers	34	33
Solicitors	34	46
Fishing-net and smack owners and masters	32	22
Stone-masons	31	24
Clothiers, outfitters, etc.	31	34
Engineers and founders, etc.	30	51
Gardeners, florists and nurserymen	30	16
Millers	30	21
Confectioners	30	38
Furniture dealers and makers	30	30
Saddlers and harness-makers	29	29
Chemists, druggists, and chemical manufacturers	29	36
Travelers, commercial	25	36
Blacksmiths	24	19
Accountants	24	10
Lodging-house keepers	23	20
Carriers, carmen, lightermen and haulers	23	30
Wheelwrights	23	15
Timber merchants	22	29
Stationers	21	18
Restaurant, coffee and eating house keepers	21	15
China, glass, earthen ware, etc., dealers	21	24
Contractors	21	22
Carriage, etc., builders	20	25
Milliners, dress-makers, etc.	19	29
Iron founders	19	2
Curriers, tanners and leather merchants	19	19
Hosiers, glovers, etc.	19	12
Wine and spirit merchants, etc	19	21
Bookbinders and sellers	17	16
Hatters	17	21
Cattle and pig dealers	17	13
Fancy goods manufacturers and importers	17	21
Hair-dressers	17	11
Architects and surveyors	16	20
School-masters and school-mistresses	16	25
Warehousemen	16	13
Oil merchants	16	3
Clerks in holy orders	16	20
Brokers, ship and insurance	15	12

REVENUE.

The gross public revenue for the year ending March 31, 1888, amounted to £449,011,270, and the expenditure to £437,118,225, leaving a surplus of £11,893,045. The expenditure was less than in the year ending March 31, 1887, by £12,865,535, and the income by £4,852,520. The smaller expenditure was brought about by the reduction of the charge for the national debt of £8,700,000; army, £2,000,000; and navy, £5,000,000; the lesser receipts by a reduction on the duty of tobacco producing £2,500,000 less than in the previous year, and in the income tax producing £10,000,000 less in the year.

There was a decrease in the amount of revenue received from customs of $2,776,895, but an increase in the revenue from excise of $2,063,185, and from stamps of $6,383,085.

The following table gives the gross amount of revenue collected from the customs, excise, and stamps in 1887–'88:

Customs revenue.	Amount.
Tea	$23,066,560
Coffee	937,810
Spirits, foreign and colonial	21,121,735
Wine	5,424,820
Tobacco and snuff	43,569,720
Currants, raisins, and dried fruits	2,693,660
Other imported articles	880,350
Miscellaneous receipts	202,725
Total	97,897,380
Excise revenue.	
Spirits	65,141,015
Beer	43,557,665
Licenses	17,811,270
Railways	1,574,965
Coffee mixture labels and chicory	23,005
Other receipts	19,680
Total	128,127,600
Stamp revenue.	
Deeds and other instruments	11,928,010
Probate duty	22,983,100
Legacies and successions	18,225,310
Life insurances	217,775
Marine insurances	623,645
Bills of exchange, bankers' notes, etc.	3,927,180
Receipts and drafts	4,961,625
Other receipts	2,428,105
Total	65,284,750

Public revenues and expenditures of the United Kingdom for the year ending March 31, 1888.

Debit.		Credit.	
For funded and unfunded debt	£131,069,555	Customs	£98,150,000
Issues on account of friendly societies' deficiencies	50,000	Excise licenses	128,100,000
Civil list of civil charges	98,459,750	Stamps (inland revenue)	65,000,000
Army	90,835,980	Land tax	5,150,000
Navy	61,626,785	House duty	9,700,000
Localization of military forces	580,670	Property and income tax	72,200,000
Annuity under "Indian army pension deficiency act, 1885"	750,000	Post-office	43,250,000
		Telegraph service	9,750,000
		Crown lands	1,950,000
Total	383,372,740	Interest on advances for local works, and on purchase money of Suez Canal shares	1,212,396
Charges for collection of revenue	53,745,485	Stamps in lieu of fees	3,702,605
Balance in hand March 31, 1888	11,893,045	Receipts by civil departments, etc.	10,846,270
Gross total	449,011,270	Gross total	449,011,270

Amounts cleared at the London bankers' clearing-house.

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Year.	Amount cleared — On fortnightly stock exchange settling days.	On consols settling days.	On 4th of each month.	Total amount.
1883	$5,295,000,000	$1,275,000,000	$1,195,000,000	$29,645,000,000
1884	4,805,000,000	1,340,000,000	1,215,000,000	28,995,000,000
1885	4,675,000,000	1,245,000,000	1,110,000,000	27,555,000,000
1886	5,995,000,000	1,315,000,000	1,080,000,000	29,580,000,000
1887	5,730,000,000	1,485,000,000	1,280,000,000	30,385,000,000

Average minimum rate per cent. of discount charged by the Bank of England in each month for the last five years.

Month.	1883.	1884.	1885.	1886.	1887.
January	4½	3	5	3½	5
February	3½	3½	5	2½	4
March	3	3	3½	2	3½
April	3	2½	3½	2	2½
May	3½	2½	2½	2½	2
June	4	2½	2	2½	2
July	4	2	2	2½	2
August	4	2	2	2½	2½
September	3½	2	2	3½	4
October	3	2½	2	3½	4
November	3	4½	2½	4	4
December	3	5	3½	4½	4
Average for the year	3	2½	3	3	3½

NATIONAL DEBT.

The total amount of the national debt at the end of the financial years 1881–'88 was:

Financial years ended March 31—	Funded debt.	Capital value of terminable annuities.	Unfunded debt.	Total of National debt.
1881	$3,545,392,630	$174,942,175	$110,387,500	$3,830,722,305
1882	3,547,492,735	165,909,375	90,038,500	3,803,440,610
1883	3,563,494,970	137,854,380	70,927,000	3,772,276,350
1884	3,203,155,475	458,421,345	70,553,000	3,732,129,820
1885	3,200,909,480	430,578,290	70,165,500	3,701,653,270
1886	3,194,248,470	429,149,585	88,014,000	3,711,412,055
1887	3,188,188,200	405,615,740	87,589,500	3,681,393,440
1888	3,048,703,715	392,246,150	86,925,500	3,527,875,365

The remarkable financial transaction of the year was the act of Mr. Goschen, chancellor of the exchequer, converting the national debt from a series of 3 per cent. stocks into a consolidated stock, bearing for fourteen years from April 1, 1889, 2¾ per cent., and afterwards 2½ per cent.

The act provides for the creation of new stock, yielding dividends up to April 1, 1889 of 3 per cent., and thereafter 2¾ per cent. until April 1, 1903, and thereafter 2½ per cent. stock not to be redeemable at par value.

The whole of the old 3 per cent. stock which amounted to $2,963,091,420 on March 31, 1888, has been converted into the new stock with the exception of $211,625,865, which balance will probably be paid off by an issue of terminable annuities or by a fresh creation of new consols, so that the national debt will presently consist of one stock. The immediate relief to the exchequer will begin to be felt in the year 1889 by a reduction of interest on the debt amounting to $6,425,000 yearly.

POST-OFFICE.

The following table shows the estimated number of letters, etc., delivered in the United Kingdom during the twelve months ended March 31, 1888:

Description.	Number.	Increase per cent.	Average number to each person.
Letters	1,512,200,000	3.6	41
Post-cards	188,800,000	4.8	5
Books, packets, and circulars	389,500,000	5.6	10
Newspapers	152,300,000	.8	4
Total	2,242,800,000	3.8	60
Parcels	36,732,000	11.8	1
Grand total	2,279,532,000	3.9	61

Of the total number of letters, etc., delivered, about 85 per cent. were delivered in England and Wales (28 per cent. being delivered in the London postal district), 9 per cent in Scotland, and 6 per cent in Ireland.

Three hundred and ninety-six new post-offices were opened during the year.

The parcel post business has increased largely. The total number of parcels posted during the year was 36,731,786.

The following table gives a comparison between the business conducted in 1884–'85 (when it was established), and 1885–'86, 1886–'87, and 1887–'88:

Year.	Number of parcels railway-borne and road-borne.	Postage.			Average postage per parcel.	
		Gross amount.	55 per cent. on railway-borne parcels paid to railway companies.	Post-office share.	Gross.	Post-office share.
					Cents.	*Cents.*
1884–'85	22,910,040	$2,541,235	$1,282,860	$1,258,375	10.64	5.26
1885–'86	26,417,397	2,959,725	1,494,740	1,464,985	10.72	5.32
1886–'87	32,860,154	3,595,560	1,791,270	1,804,290	10.50	5.28
1887–'88	36,731,786	4,058,820	2,006,475	2,052,345	10.60	5.36

NOTE.—The charges for transmitting parcels were reduced in 1886.

It will be observed that the amounts earned by the railway companies were larger in the years 1884–'85 and 1885–'86, and smaller in 1886'87 and 1887'88, than those earned by the post-office. This change is due to the extension of the road-borne system of collecting and delivering parcels by wagons. A parcel service by coach between London and Brighton (a distance of 52 miles) was established in 1887, and this has been so satisfactory that it is intended to extend the system in other directions.

The number of letters, post-cards, parcels, etc., received in the returned letter office was 13,436,600, of which number 412,122 were unreturnable. There were 25,726 wholly unaddressed, 1,553 of which contained money, checks, etc., amounting to $35,555.

The number of accounts remaining open at the end of the year 1887 in the Post-office Savings Bank was 3,951,761, distributed as follows:

Division.	No.	Proportion to population.	Average balance due to each depositor.
England and Wales	3,653,232	1 to 8	$66.46
Scotland	139,681	1 to 29	39.80
Ireland	158,848	1 to 31	89.84

A peculiarity of the above is that while in Ireland the number of accounts open is only in the proportion of 1 to 31 of the population, the balance due to each depositor is much larger than in the other two sections of the Kingdom.

The gross revenue for the year was as follows:

Receipts.		Expenditure.	
Postage	$42,046,060	For postal service, including money and postal order business	$26,810,975
Commission:		For packet service	2,858,125
On money orders	667,230	For savings bank	1,442,090
On postal orders	799,395	For telegraphs	9,955,835
Value of unclaimed money orders	14,000	Total	41,067,025
Savings bank	1,836,115	Net revenue	14,256,700
Telegraphs	9,960,925		
Total	55,323,725		

RAILWAYS.

The general report of the board of trade on the traffic and working of railways for 1887 shows an improvement as compared with 1886, the net earnings, amounting to $169,400,550, being larger than they have ever been before. The increase in the receipts from passenger traffic was $1,500,000, and from goods traffic $5,000,000. The increase in the number of passengers carried was upwards of 8,000,000, and the increased weight of goods was over 14,000,000 tons. The working expenses show an increase of about

$2,500,000, but the total working expenses, amounting to $185,316,330 in 1887, compare favorably with those of 1886, there being a slight decrease in the expenditures per train mile. The decrease in the working expenses per train mile has been continuous for several years, amounting in the last ten years to 11 cents per train mile, or about 15½ per cent.

The increase of capital amounted to upwards of $88,000,000, the total nominal capital being $4,229,858,270. The average dividend on the total paid-up capital in 1887 was at the rate of 4.13 per cent., an increase of .05 per cent. compared with 1886.

The number of persons killed in the working of the railways was 919 and the number of injured was 3,590. Of these numbers, 121 killed and 1,297 injured were passengers, but of these only 25 were killed and 538 injured in consequence of accidents or collisions between trains. Of the remainder, 422 killed and 2,075 injured were officers or servants of the companies. Of suicides there were 70; of trespassers, 203 were killed and 114 injured; accidents at level crossings, 63 killed and 35 injured; other causes, 40 killed and 35 injured.

The amount of compensation paid by railway companies of the United Kingdom for personal injuries to passengers and for loss or damage of goods was as follows:

Division.	1886.		1887.	
	Passengers.	Goods.	Passengers.	Goods.
England and Wales	$750,040	$733,540	$742,425	$760,965
Scotland	70,485	68,365	55,565	65,000
Ireland	134,920	27,870	84,040	22,200
Total	955,445	829,775	882,030	848,165

Total length, paid-up capital, traffic, receipts, and working expenses of railways in the United Kingdom.

Division.	Length of line open at end of year.	Paid-up capital.			Number of passengers conveyed.
		Ordinary.	Guarantied preferential loans and debenture stocks.	Total.	
	Miles.				
England and Wales	13,825	$1,319,832,860	$2,192,939,155	$3,512,772,015	647,774,956
Scotland	3,079	170,870,205	363,929,605	534,799,810	66,432,617
Ireland	2,674	83,273,520	99,012,925	182,286,445	19,470,958
Total	19,578	1,573,976,585	2,655,881,685	4,229,858,270	733,678,531
Total 1886	19,332	1,526,010,410	2,615,710,860	4,141,721,270	725,584,390
Increase in 1887	246	47,966,175	50,170,825	88,137,000	8,094,141

Total length, paid-up capital, traffic, receipts, etc. — Continued.

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Division.	Weight of goods and minerals carried.	Gross receipts. From passenger traffic.	From goods traffic.	Average receipts from passenger and goods traffic per mile.	Miscellaneous.	Total.
	Tons.					
England and Wales	229,052,478	$130,383,820	$158,463,645	$00,895	$13,667,160	$302,514,625
Scotland	36,102,520	14,951,320	21,842,500	11,950	1,259,515	38,053,335
Ireland	3,771,886	7,531,295	6,400,350	5,210	217,275	14,148,920
Total	268,926,884	152,866,435	186,706,495	17,345	15,143,950	354,716,880
Total 1886	254,626,643	151,224,690	181,852,195	17,230	14,882,880	347,959,765
Increase in 1887	14,300,241	1,641,745	4,854,300	115	261,070	6,757,015

Division.	Working expenditures.	Net receipts.	Proportion of working expenditures to gross receipts.
			Per cent.
England and Wales	$158,821,020	$143,693,605	53
Scotland	18,868,085	19,185,250	50
Ireland	7,627,285	6,521,695	54
Total	185,316,330	169,400,550	52
Total 1886	182,591,235	165,368,030	52
Increase in 1887	2,725,095	4,032,520	

TRAM-WAYS.

The total length of line open in the United Kingdom in 1887 was 886 miles, an increase of 21 miles over 1886. The paid-up capital amounted to $64,536,000, and the gross receipts for the year to $14,011,620. The average return upon the capital expended was about 5¼ per cent., as against 5 per cent. in 1886. The following table gives the length, paid-up capital, traffic, receipts, and expenditures on tram-ways in the United Kingdom for 1887 compared with 1886:

Total length, paid-up capital, traffic, receipts, and working expenses of tram-ways in the United Kingdom.

Division.	Length of line open on June 30 of each year.	Paid-up capital on June 30. Share.	Loan and debenture.	Total.
	Miles.			
England and Wales	722	$38,877,950	$14,422,315	$53,300,265
Scotland	77	3,250,410	2,566,830	5,817,240
Ireland	87	4,751,390	668,005	5,419,395
Total for 1887	886	46,879,750	17,657,150	64,536,900
Total for 1886	865	45,523,400	16,424,120	61,947,520
Increase	21	1,356,350	1,233,030	2,589,380

Total length, paid-up capital, traffic, receipts, etc.—Continued.

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Division.	Number of passengers conveyed.	Gross receipts.	Working expenses.	Net receipts.
England and Wales	330,359,845	£11,303,735	£8,697,315	£2,606,420
Scotland	62,282,844	1,753,930	1,302,585	451,345
Ireland	23,875,734	953,955	712,110	241,845
Total for 1887	416,518,423	14,011,620	10,712,010	3,299,620
Total for 1886	384,157,524	13,151,690	10,107,780	3,043,910
Increase	32,360,899	859,930	604,230	255,700

POPULATION.

The return of the registrar-general of births, marriages, and deaths for 1887, completes fifty years of registration. The act establishing civil registration of births, deaths, and marriages came into operation July 1, 1837. The history of this act is of interest. It was not passed without considerable opposition, emanating chiefly from the clergy, among them being the then archbishop of Canterbury, who contended that the uneducated classes would be led by it to neglect baptism, but who were, probably, more particularly influenced by the fact that the fees payable for certificates of baptisms, burials, or marriages would henceforth be diverted from the guardians of the parish registers to the general register office, or the local registrars.

On the other hand, the medical and legal professions were both in favor of the measure. The anticipated benefits likely to result from the registration of the causes of death to the medical profession, in the language of a circular issued by the presidents of the Royal Colleges of Physicians and of Surgeons and the master of the Society of Apothecaries, was "a more accurate knowledge, not only of the comparative prevalence of various mortal diseases, as regards the whole of England and Wales, but also of the localities in which they respectively prevail, and the age, sex, and condition of life which each principally affects," and it was through knowledge thus obtained by the accumulation and classification of registered facts that the excess of mortality from certain forms of disease was almost invariably associated with certain ascertainable external conditions, and that sanitary reformers were able to devise remedial measures and bring them to bear on unhealthy localities with such precision as to give a fair chance of success. "But," the registrar-general says, "it may be pointed out that a far greater benefit than any foreseen by the medical authorities, as fairly to be anticipated from a system of registration, has in reality already been obtained from it, namely, an addition of more than two years to the average span of life of the inhabitants of England and Wales."

The act commended itself to the legal profession because of the facilities afforded in cases of uncertain or disputed inheritance, where it was necessary to trace back pedigrees and prove the occurrence of either births or deaths. In confirmation of this, it is pointed out that in 1887 there were no less than

37,168 searches in the registers kept in the general register office and 27,110 certificates issued, mostly for legal purposes, and that each of these searches cost the searcher, on the average, only ten minutes in time and 1*s.* (25 cents) in money, instead of "the immense delay and expense of going all over the Kingdom to find, in the majority of cases, the search to be after all unsuccessful," as an eminent lawyer said in the debate on the act.

The births registered in 1887 numbered 886,331, and were in the proportion of 31.4 to 1,000 persons living, the lowest rate recorded since registration was instituted.

The deaths numbered 530,758, a proportion of 18.8 to 1,000 persons living, the lowest death-rate yet recorded, the next lowest having been 18.9 in 1881.

The following table gives the registered causes of death:

Mortality from the several classes of diseases in 1887.

Causes of death.	Total deaths in 1887.	Rate per million living.							
		1887.	1886.	1885.	1884.	1883.	1882.	1881.	Mean, 1871–80.
Zymotic diseases	75,205	2,660	2,648	2,507	3,094	2,639	3,088	2,660	3,724
Parasitic diseases	824	29	35	30	38	39	37	39	57
Dietetic diseases	1,765	63	59	59	58	66	68	66	63
Constitutional diseases	89,404	3,166	3,330	3,276	3,404	3,407	3,395	3,328	3,594
Developmental diseases	43,933	1,555	1,618	1,598	1,574	1,632	1,558	1,582	1,674
Local diseases	274,537	9,720	9,915	9,908	9,543	9,890	9,591	9,348	9,980
Violence	18,125	642	626	625	651	675	669	697	736
Ill-defined and not specified causes	26,965	955	1,047	1,007	1,149	1,188	1,154	1,160	1,610
All causes	530,758	18,790	19,278	19,010	19,511	19,536	19,560	18,880	21,378

Estimated population of the United Kingdom, exclusive of the portions of the army, navy, and merchant service abroad.

Divisions.	1886.			1887.		
	Males.	Females.	Total.	Males.	Females.	Total.
England and Wales	13,562,621	14,307,965	27,870,586	13,745,868	14,501,283	28,247,151
Scotland	1,911,997	2,037,396	3,949,393	1,934,215	2,057,284	3,991,499
Ireland	2,396,630	2,492,868	4,889,498	2,371,040	2,466,273	4,837,313
Total	17,871,248	18,838,229	36,709,477	18,051,123	19,024,840	37,075,963

The marriages registered in 1887 numbered 200,518, giving a rate of 14.2 persons married to 1,000 living, the lowest rate recorded since civil registration began, with the exception of 1886, when it was 14.1. The following table gives the ages of 188,164 couples at time of marriage:

Ages of 188,164 of the men and women who intermarried in the year 1887.

[The table read vertically shows the number of wives at each age, with the ages of their husbands at marriage. Read horizontally it shows the number of husbands at each age, with the ages of their wives at marriage.]

Ages of husbands.	Ages of wives.																			Total husbands.
Years	15.	16.	17.	18.	19.	20.	21.	25.	30.	35.	40.	45.	50.	55.	60.	65.	70.	75.	80.	85 and upwards.	
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	.....	.....	1	18	3	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
17	2	3	18	24	6	4	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62
18	2	11	118	309	145	87	104	18	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	797
19	2	20	225	956	1,072	566	627	73	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,549
20	4	29	247	1,148	2,255	2,181	2,455	286	26	5	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,539
21	13	75	694	3,567	7,450	10,773	42,038	9,223	890	136	37	10	.....	.....	2	.....	.....	.....	.....	.....	74,908
25	3	32	209	813	2,012	3,362	23,592	21,123	3,681	691	134	28	3	1	.....	.....	.....	.....	.....	.....	54,684
30	3	13	43	153	284	603	5,173	7,096	4,521	1,395	375	74	17	2	.....	.....	.....	.....	.....	.....	19,752
35	1	3	11	42	85	130	1,336	2,623	2,311	2,023	754	234	33	6	3	.....	.....	.....	.....	.....	9,595
40	.....	.....	5	10	20	55	397	896	1,237	1,200	1,174	443	95	20	6	1	.....	.....	.....	1	5,560
45	.....	.....	4	3	9	17	166	365	579	801	824	743	225	62	18	1	.....	.....	.....	.....	3,817
50	.....	.....	2	1	3	5	63	155	284	386	529	593	433	131	39	11	2	.....	.....	.....	2,637
55	.....	.....	.....	.....	1	3	20	68	131	214	308	398	314	314	64	18	1	.....	.....	.....	1,854
60	1	.....	.....	2	1	2	18	45	60	93	191	195	291	234	206	42	4	3	.....	.....	1,388
65	.....	1	.....	.....	1	.....	8	11	28	35	63	102	123	112	93	73	5	1	.....	.....	655
70	.....	.....	.....	.....	1	.....	4	4	11	11	18	32	41	36	47	35	20	3	1	1	265
75	.....	.....	.....	.....	.....	.....	.....	1	1	5	9	11	5	7	10	13	3	4	.....	.....	69
80	.....	.....	.....	.....	.....	.....	1	.....	.....	1	1	.....	4	2	4	3	2	.....	.....	.....	18
85 and upwards	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1	1	2	.....	.....	1	1	.....	.....	8
Total wives	31	187	1,577	7,089	13,348	17,789	76,008	40,987	13,773	6,996	4,420	2,863	1,585	989	492	197	38	12	1	2	188,164

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Population, marriages, births, and deaths in the United Kingdom.

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Division.	Numbers.					Proportion per 1,000 of the population.		
	Estimated population.*	Marriages.	Persons married.	Births.†	Deaths.†	Persons married.	Births.	Deaths.
1886.								
England and Wales	27,870,586	193,071	392,142	903,760	537,276	14.1	32.4	19.3
Scotland	3,949,393	24,469	48,938	127,927	73,622	12.4	32.4	18.6
Ireland	4,889,498	29,594	41,188	113,927	87,292	8.4	23.3	17.9
Total	36,709,477	241,134	482,268	1,145,614	698,190	13.1	31.3	19.0
1887.								
England	28,247,151	200,518	401,036	886,331	530,758	14.2	31.4	18.8
Scotland	3,991,499	24,851	49,702	124,375	74,500	12.5	31.2	18.7
Ireland	4,837,313	20,945	41,890	112,400	88,585	8.7	23.2	18.3
Total	37,075,963	246,314	492,628	1,123,106	693,843	13.3	30.3	18.7

* In the middle of each year. † Exclusive of still-born.

Strength and mortality in the army, navy, and merchant service.

Class.	1886.			1887.		
	Strength.	Deaths.	Proportion of deaths per 1,000.	Strength.	Deaths.	Proportion of deaths per 1,000.
Army	203,805	2,813	13.8	209,574	2,006	9.6
Navy	46,770	322	6.9	48,410	403	8.3
Merchant service	204,470	3,546	17.3	202,543	.....	.....

EMIGRATION.

The total number of persons emigrating from the United Kingdom in 1887 to all parts out of Europe was 396,494, of whom 281,487 were of British and Irish origin. Deducting the number of immigrants—119,013 (85,475 of whom were of British and Irish origin)—it will be found that the net emigration was 277,481.

Of the total British and Irish emigration 60 per cent. were English, 12 per cent. Scotch, and 28 per cent. Irish. Of the whole number of British and Irish 72 per cent. went to the United States, 12 per cent. to the Australasian colonies, and 11 per cent. to British North America. Of the English emigration 63.6 per cent. and of Irish 87.6 per cent. was to the United States.

The following interesting table, compiled from the census returns of the United States, Canada and the Australian colonies by the board of trade shows the number of persons born in the United Kingdom, forming part of the population of the countries mentioned:

Table showing the number of persons born in the United Kingdom, forming part of the population of the undermentioned countries.

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Country.	Population.	Persons born in—			Total born in the United Kingdom.	Percentage of population born in the United Kingdom.
		England.	Scotland.	Ireland.		
United States	50,155,783	747,462	170,136	1,854,571	2,772,169	5.5
Canada	4,324,810	169,504	115,062	185,526	470,092	10.9
Australasia:						
New South Wales	751,468	110,674	25,079	69,192	204,945	27.3
Victoria	862,346	147,453	48,153	86,733	282,339	32.7
South Australia	286,211	59,151	10,637	18,246	88,034	30.8
Queensland	213,525	37,390	9,929	28,295	75,614	35.4
Western Australia	32,054	6,760	732	2,975	10,467	32.6
Tasmania	115,705	17,307	3,744	7,192	28,243	24.4
New Zealand	534,030	121,187	52,753	49,363	223,303	41.8

Number, nationality, and destination of passengers leaving the United Kingdom for places out of Europe in 1887.

Nationality.	To—					Total.	
	United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other places.	1887.	1886.
English	107,069	24,611	25,085	4,378	7,078	168,221	146,301
Scotch	25,373	3,612	3,847	463	1,070	34,365	25,323
Irish	69,084	3,802	5,251	68	696	78,901	61,276
Total British and Irish	201,526	32,025	34,183	4,909	8,844	281,487	232,900
Foreigners	92,994	12,381	1,015	749	1,433	108,572	94,370
Not distinguished	2,381	.....	.....	.....	4,054	6,435	3,531
Grand total	296,901	44,406	35,198	5,658	14,331	396,494	330,801

Number of persons arriving in the United Kingdom from places out of Europe.

Nationality.	Countries whence arrived.					Total.	
	United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other places.	1887.	1886.
British and Irish	58,343	6,848	10,258	3,086	6,940	85,475	80,018
Foreigners	29,790	186	334	538	1,200	32,008	28,474
Not distinguished	855	.....	.....	.....	675	1,530	387
Total	88,948	7,034	10,592	3,624	8,815	119,013	108,879

CRIMINAL STATISTICS.

There has been a continuous decrease in all parts of the Kingdom in the number of persons committed for trial during the last decade. In 1878 the total number was 23,477, or 1 in every 1,446 of the population; in 1887 the

number was 18,305, or·1 in every 2,025 of the population. This satisfactory diminution in crime is undoubtedly the result of the spread of education among the masses. This is particularly shown in the statistics giving the number of persons summarily proceeded against. The total number for England and Wales was 663,887, of which 134,501 were acquitted, 382,553 fined, and the remainder sentenced to short terms of imprisonment or sent to reformatories. Of all the prisoners, 43,366 of them could neither read nor write, 116,060 could read or read and write imperfectly, 3,575 could read and write well, and 115 were of "superior education." The cases of drunkenness show a continuance of the falling off observed in recent years, the number having decreased from 165,139 in 1886 to 162,772 in 1887.

In Ireland 47 per cent. of the women prisoners and 30 per cent. of the men were unable to read or write.

The total number of police in the United Kingdom in 1887 was 54,781, costing $28,285,140, an increase of 553 men and $921,525 compared with 1886. The proportion of police to the population was in England and Wales 1 in 735, in Scotland 1 in 1,026, and in Ireland 1 in 346.

Criminal returns.

Division.	Committed for trial.			Convicted.	Acquitted.
	Males.	Females.	Total.		
England and Wales	11,162	2,130	13,292	10,338	2,896
Scotland	1,952	367	2,319	1,809	549
Ireland	2,309	385	2,694	1,411	1,114
Total	15,423	2,882	18,305	13,558	4,559
Total in 1886	16,433	3,013	19,446	14,143	5,045
Decrease	1,010	131	1,141	585	486

Number of paupers (exclusive of vagrants) in receipt of relief in the United Kingdom on a certain day in 1887.

Census taken.	Adult, able-bodied.			All other paupers.			Total.		
	Indoor.	Out-door.	Total.	Indoor.	Out-door.	Total.	Indoor.	Out-door.	Total.
England and Wales, January 1, 1888	28,637	83,896	112,533	172,029	540,947	712,976	200,666	624,843	825,509
Scotland, May 14, 1887	.....	.....	58,683	.....	.....	33,388	.....	.....	92,071
Ireland, end of first week in January, 1888	7,866	.....	7,866	41,247	.....	41,247	49,113	64,834	113,947
Total	36,503	83,896	179,082	213,276	540,947	787,611	249,779	689,677	1,031,527
Total in 1886	33,436	83,911	176,245	209,569	529,282	772,766	243,005	673,144	1,008,962
Increase	3,067	.....	2,837	3,707	11,665	14,845	6,774	16,533	22,565
Decrease	.....	15	.....	.....	.....	.....	.....	.....	.....

NOTE.—The proportion of paupers to the total population was, in 1886, 1 to 36.7; in 1887, 1 to 39.

Amount expended in relief of the poor.

England and Wales	$40,883,840
Scotland	4,495,675
Ireland	6,841,650
Total	52,221,156

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Primary schools in the United Kingdom.

Divisions.	Number of schools inspected.	Number of children who can be accommodated.	Average number of children in attendance.	Number of children present at inspection.
England and Wales	19,154	5,278,992	3,527,381	4,192,514
Scotland	3,111	677,984	491,735	559,491
Ireland	8,112	1,071,768	515,388	550,839
Total	30,377	7,028,744	4,534,504	5,301,844
Total in 1886	30,138	6,908,488	4,405,799	5,147,991
Increase	239	120,256	128,705	153,853

Parliamentary grants.

England and Wales and Scotland	$20,057,320
Ireland	4,560,645
Total	24,617,965
Increase over 1886	1,431,005

Police, 1887.

Division.	Number of men.	Cost.
England and Wales	36,912	$18,559,665
Scotland	3,892	1,876,055
Ireland	13,977	7,849,420
Total	54,781	28,285,140

PATENTS.

The number of applications for patents in 1887 amounted to 18,051, an increase of 5 per cent. over 1886, and exceeded the number applied for in any previous year. The proportion of applications made by persons resident in the United Kingdom amounted to 76 per cent., from persons resident in the United States to 9 per cent., and from other countries to 15 per cent. Of the applications of the year 1886, 53 per cent. were proceeded with, as compared with 54 per cent. in 1885.

The following table shows the number of applications for patents from persons residing in the United Kingdom and in various countries and colonies in the years 1884 to 1887, inclusive:

Applications for patents, 1884-'87.

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From persons resident in—	1884.	1885.	1886.	1887.
England and Wales	12,356	11,254	12,049	12,618
Scotland	901	905	972	916
Ireland	254	208	232	257
Total United Kingdom	13,511	12,367	13,253	13,791
United States	1,181	1,382	1,447	1,632
Germany	890	869	871	961
France	788	701	728	762
Austria	151	156	146	165
Belgium	114	121	144	137
Switzerland	67	56	68	76
Canada	63	80	128	97
Sweden	42	41	40	47
India	40	26	38	28
Italy	38	36	38	31
Russia	38	41	30	35
Holland	31	29	22	33
Denmark	25	24	20	35
Victoria	19	22	25	39
Spain	17	23	25	21
New Zealand	16	25	31	38
New South Wales	14	15	18	24
Norway	8	7	11	7
Cape of Good Hope	7	10	3	2
Brazil	7	4	5	14
West Indies	6	5	9	4
Turkey	4	2	5	7
South Australia	4	5	2	10
Algiers	3	4	.....	2
Egypt	3	4	3	3
Natal	3	.....	1	.....
Newfoundland	2	5	2	1
Japan	2	1	1	5
Portugal	2	.....	6	2
Argentine Republic	2	2	4	1
Gibraltar	2	2	.....	.....
South America	2	6	10	1
Burmah	2	.....	.....	1
Mexico	1	.....	.....	1
Guatemala	1	2	2	2
Sicily	1	.....	2	.....
Asia Minor	1	.....	1	.....
British Guiana	1	1	.....	.....
Queensland	1	.....	2	6
Channel Islands	.....	12	6	9
Isle of Man	.....	6	6	5
China	.....	3	2	.....
Straits Settlements	.....	2	.....	1
Fiji	.....	1	.....	.....
Mauritius	.....	1	.....	1
Tasmania	.....	1	2	.....
Ceylon	.....	1	6	2
Roumania	.....	.....	1	.....
Java	.....	.....	2	1
Sandwich Islands	.....	.....	2	1
South Africa	.....	.....	8	5
Seychelle Islands	.....	.....	.....	1
West Africa	.....	.....	.....	1
Formosa	.....	.....	.....	1
West Australia	.....	.....	.....	1
Madeira	.....	.....	.....	1
Total applications	17,110	16,101	17,276	18,051

Statement of the total number of applications for patents, designs, and trade-marks in 1884-'87.

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Years.	Patents.	Designs.		Trade-mark.
		Single.	Sets.	
	No.	*No.*	*No.*	*No.*
1884	17,110	19,515	238	7,104
1885	16,101	20,388	337	8,026
1886	17,176	23,717	324	10,677
1887	18,051	25,734	309	10,586

HUMIDITY.

Mean relative humidity of the atmosphere for each month of the year ending September, 1888.

[Royal Observatory, Greenwich, W. A. M. Christie, esq., M.A., F.R.S.]

Month.	Mean relative humidity.*	Month.	Mean relative humidity.*
1887.		1888.	
October	82	March	81
November	89	April	80
December	85	May	69
1888.		June	78
		July	84
January	88	August	80
February	79	September	84

* Complete saturation = 100.

THOMAS M. WALLER,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
London, January 31, 1889.

TAXATION IN CHINA.

REPORT OF MINISTER DENBY, OF PEKING.

I call attention to some features of taxation in Peking, and incidentally in other parts of China, which present a contrast to systems elsewhere prevalent. The method of securing funds for the needs of the Government has been brought to its present form through many centuries, but it is probable that improvement in means of intercommunication will, in the near future, render necessary some fundamental changes.

The city of Peking is situated in the prefecture of Shun-Tien-Fu, that is, the region inclosing the imperial capital. It is divided into two *hsien*, or districts, viz., Wan-Ping Hsien and Ta-Hsing Hsien, comprising, roughly, the western and eastern portions of the city respectively. These two districts within the city, together with twenty-two districts and departments outside of Peking, including T'ung-Chou, Ch'angping Chou, Pa-Chou, San-ho hsien,

Wu-Ching hsien, etc., etc., make up the above-mentioned *fu*, or prefecture. All of these places pay, through their respective district or department magistrates, a land tax on arable land only, which tax goes, not to the provincial treasury at Pao-Tinh-Fu (the capital of this province), but to the imperial board of revenue at Peking. This tax varies when the land is held from the Emperor from that levied when within the domain allotted to a prince for his support, being larger in the latter case. Taxes vary also with the crop-producing quality of the soil from 10 cents to $1.50 an acre, the land in each district being returned by officers designated for the purpose as good or bad, high or low.

Inside the city of Peking there is no tax on land, houses, or personal property. Goods brought through the city gates pay a lekin tax but are exempt from taxation afterwards. The only tax on land and houses in Peking is the tax on the transfer of real estate, amounting to about 10 per cent. of the price paid. This tax is exacted on sales of property, whether in or out of the city, whenever the change of title is registered by the parties in the registry at the magistrate's yamên, and a red deed is given.* This exaction is said, however, not to be uniform, being reduced or evaded by official influence, etc. Transfer may be made by white deed without paying this tax, and, as the title still remains recorded in the original owner's name, this transaction resembles more mortgage with transfer of the property than sale. In the city there is a tax on shops resembling license fees. A pawn-shop pays 50 taels per annum; manufacturers of wine, 48; other shops less, the sum varying according to the size of the establishments. Peddlers and others having no fixed place of business pay nothing. Carters, donkey drivers, etc., pay a charge of 1 cash ($\frac{1}{10}$ of 1 cent) for each passenger they carry, which sum goes to the police for the repair and lighting of streets. This, however, is more a "squeeze" than a tax.

Outside of Peking Chinese subjects (not bannermen) are liable to be called on to perform military duties, such as repairing roads, conveying chairs, etc., on the Emperor's visits to the eastern tombs or other places. This may be avoided by the payment of a small tax for each person and each horse. In other parts of China this duty takes the form of devoting a certain number of days to assisting in the shipment of tribute rice, salt, etc. The requisition for men for these purposes is usually met by each locality furnishing its quota of men, who are paid by all liable to serve.

All moneys spent on public account in Peking come from the imperial treasury, and this expenditure is not limited to funds raised by taxation from the city itself. This résumé of taxation in Peking shows that the bulk of the people pay no taxes whatever. The man who owns his house and lot, his implements of labor, enjoys his earnings without toll or deduction. How different this condition is from that in cities where sometimes 3 per cent. on a high valuation is exacted for public purposes. In China the chief tax

*Deeds of this character are always written on red paper, the following on white paper. Hence the names "red" and "white" deed.

is on land; there is no tax on personality. The land tax, the salt monopoly, lekin, foreign and native customs duties, and the proceeds of sales of honors and offices make up the revenue of the State.

To the absence of taxation of the body of the people may well be ascribed the permanence of the Government and the tranquility and contentment of the Chinese race. The lesson of taxation in China might be profitably studied by the civilized world.

CHARLES DENBY,
Minister

LEGATION OF THE UNITED STATES,
Peking, December 29, 1888.

FOOD PRICES AND WAGES IN STOCKHOLM.

REPORT OF MINISTER MAGEE, OF STOCKHOLM.

His Majesty in his address from the throne, at the opening of the Diet a few days since, congratulated the country on the harvest for the year 1888. Since then I have received the annual crop statistics, published by the Bureau of Agriculture.

I find from an examination of this book that the results of the year are not as encouraging as in former years. There has been a decrease both in quality and quantity of agricultural products, while prices are higher than in the ten years preceding that of 1888. The principal food product of the Swedish farmer is potatoes, and taking the average product of this crop for the past ten years there has been a falling off over that of any year from 1878 to 1888 of 3,378,100 hectoliters, while the quality has been very inferior. There was an increase in small grains, but not a very appreciable one. It does not appear that there was any greater average in cultivation than in former years. The enhanced price is due to the tariff laws enacted last winter.

I have made considerable inquiry as to the effect of these laws upon the price of food supplies as well as to what extent they have increased the demand for labor or appreciated its cost. The result is that every article entering into the domestic economy—all food supplies—has been increased from 20 to 50 per cent. In support of this conclusion, perhaps as reliable testimony as could be furnished, is the budget for the year 1889 of the minister of war. In that he has asked an increase of 10 öre per day, equal to 20 per cent. per man, for subsistance for the army. The aggregate of this increase in American money is $338,000. The same ratio of increase must be met in all other of the govenmental departments. No increase in salary or pay is proposed, or, if proposed, could be carried. As it is in the army and navy, so it is in civil life. The cost of living has increased, and this increase is due solely to the tariff laws. There has been no corresponding benefit, wages have not increased, or employment been more general. The increased cost of living with no proportionate increase in price of labor

has enforced the greatest economy with the people, a people whose habits of daily life, so far as expenditure goes, were as low as subsistence could be reduced apparently. Now the more puzzling problem is how the poorer classes meet this additional charge. It can only be by consuming less, and this means an increase of assisted poor.

I give you the result of my observations without comment upon this unhappy condition of the laboring and lower classes of society. There is one other phase equally unfortunate, and that is the increase of the socialistic sentiment. Two years ago the police reported less than five hundred socialists in Stockholm. Between four and five thousand met on the 20th of January in a public meeting.

RUFUS MAGEE,
Minister.

LEGATION OF THE UNITED STATES,
Stockholm, February 12, 1889.

COMMERCE AND TRADE OF GERMANY.

REPORT OF COMMERCIAL AGENT SMITH, OF MAYENCE.

GENERAL SITUATION.

On the whole business was better in 1888 than in 1887; in fact, it would appear to have been the most satisfactory year the business men of Germany have had for a series of years. The long depression which had prevailed from 1882 seems to have reached its end in 1888, and Germany looks upon the opening year with confidence in the future and an expectation of increased activity in all branches of industry.

The economical situation is healthier, and therefore much better. For a number of years Germany has been putting forth great efforts to assume among the nations of the earth a commercial position corresponding to its military station. In this effort it has reduced profits to a minimum and worked often even at a loss, but on the whole has been developing and prospering. To gain commercial supremacy it has sought trade relations with remote parts, founded colonies, and subsidized steam-ship lines. Severe competition, small profits, and depressed markets have dispirited its producing classes, but in 1887, after the fear of war had subsided, an improved business feeling set in and a great industrial activity manifested itself, which continued throughout 1888. According to one of the leading newspapers of the country there has not been since the establishment of the Empire in 1870–'71 any year exhibiting so comprehensive and enduring an upward industrial movement as 1888. But the crops of the year were all poor, and the vintage in quality was almost a complete failure, and mourning spread its black pall over the land for two emperors.

In population, in resources, and in national consciousness the country is ever growing greater and stronger. The humblest subject now feels the glow of imperial nationality within him, and this feeling of rejuvenated

patriotism is creating all things anew in the land. Germany, under the new conditions brought about by the events of 1870–'71, although compelled during the years of peace since elapsed to maintain a burdensome military establishment, has steadily prospered and developed; and in all directions are the signs of this development and progress to be seen in social, economical, and political conditions. Its effects are visible everywhere—in the home, the school, the workshop, the public gathering, and the State; but all is dominated by the military spirit.

ARMY AND NAVY.

The army has been well looked after in the past, but the navy has not been so well cared for. This neglect it is proposed now to remedy to some extent. With the desire for colonial empire and extensive commercial relations with the world at large comes naturally a longing for a fitting naval establishment becoming one of the greatest military power of the times; and with this end in view it is proposed to reorganize the German navy and place it on a more formidable footing than it at prerent occupies. For this purpose the Reichstag is expected to appropriate about $27,000,000 for the building of twenty-eight new ships of war; not to be appropriated in a lump sum, but to be made in instalments, running from 1889–'90 to 1894–'95. The vessels, it is understood, shall consist of four iron-clads of the latest construction, costing about $875,000 each; nine iron-clads for coast defense at the same price; seven protected cruiser-corvettes, costing about $1,375,000 each; four unprotected cruisers at $400,000 each; two dispatch boats at $250,000 each, and two torpedo-boats at $300,000 each.

These additions to the German navy are represented to be imperatively necessary, apart from vessels now being built, if Germany is going to occupy any kind of a naval position, be able to protect her interests abroad, and make a naval alliance with her desirable. Germany, it is said, does not at the present time possess a single vessel of war answering all modern requirements. The iron-clads will not be so large as those of Italy, as the depth of water on the German coasts will not admit of it.

COMMERCIAL MARINE.

The commercial marine of the Empire is constantly growing, and shipbuilding has been going on actively during the past year; in fact, the shipyards have more than they can do, and the large number of vessels soon to be required by the Government will give still greater impetus to them. The great transatlantic lines of steamers are increasing the number of their vessels, and new lines of steamers are being organized for communication with distant ports.

The number and capacity of the German river and sea-going vessels experienced during the year a very great increase, but they are still not sufficient for present needs. New vessels are being built and steamers are in course of construction for both Hamburg and Bremen shipping companies.

At Hamburg the export trade is represented to be so active that difficulty is experienced, from press of freight, in getting goods loaded at the proper time. The increase in the shipping trade there has been so great that the chamber of commerce has recommended that the quays of Hamburg be further extended. Work has already been begun on wharf sheds for eighteen more vessels, and the Hamburg and American Packet Line Company, it is said, is going to erect 250 yards of roofed quays. In 1885 the number of vessels arrived at Hamburg was 6,790, with a total registered tonnage of 3,704,000; in 1888 they amounted to 7,524, with a total registered tonnage of 4,355,000. The departures in 1885 amounted to 6,798 ships, with a total registered tonnage of 3,712,000, and in 1888 to 7,515 ships, with 4,347,000 registered tons. Sailing vessels are gradually giving place to steamers, as is apparent from this—that in 1885 of the 6,790 vessels arrived, with a registered tonnage of 3,704,000, 3,732 were steamers, with a tonnage of 1,683,000, while in 1888, of the 7,524 arrived, with a tonnage of 4,355,000, 5,214 were steamers, with a tonnage of 3,722,000.

EXPORTS AND IMPORTS.

The export trade was made active by the improved condition of transmarine countries in consequence of a better disposal of their products in the preceding year, and in part to large loans made in Europe by these countries. Factories working for the export trade were busily employed during the whole year, and were able to raise prices somewhat. The import trade was also favorable, but statistics of the export and import trade of the Empire are not at hand to show the trade of Germany with the world at large during the year.

IMPROVEMENT OF THE WESER.

At Bremen the Lower Weser is being improved for the purpose of admitting vessels of large draught to the port, and it is expected that the improvement, which will be finished in 1891, will be of much benefit, and enable vessels drawing 16 to 20 feet to enter the port. This work has been going on since 1887, and has already improved the river to such an extent that vessels drawing 10 feet can go up to Bremen. The port dues are only 3 pfennigs a cubic meter.

NEW STEAM-SHIP LINES.

(1) *Hamburg to Calcutta.*—According to the Börsenhalle of Hamburg the establishment of a direct line of steamers between Hamburg and Calcutta has become assured. Several large shipping firms in Hamburg have subscribed about $900,000 for the purpose, and certain banks have taken $450,000 more. Other shares to the amount of $500,000 will be issued later on. Business is to be begun with six steamers, and as the German ship-yards have now on hand more than they can do, some large steamers will probably be brought from England.

(2) *Bremen to Bombay and Calcutta.*—At Bremen a line is to be opened to run between Bremen, Bombay, and Calcutta. The Hansa Ship Company, of Bremen, at a general meeting held in the early part of December, unanimously agreed that its stock should be increased $500,000, and bonds be issued to the amount of $375,000 to start the line, which, I believe, is to be opened some time during the present month, with steamers already belonging to the company. Five new steamers are reported to have been ordered of English and German builders.

(3) *Hamburg to West Africa.*—At Hamburg it is proposed to found another direct line of steamers (the second) to the west coast of Africa. It is the intention to build five new steamers for the purpose (of 2,750 registered tons) to go 10 knots an hour, and with them to establish two lines, one by way of the Canary Islands, Sierra Leone, and the gold coast to Lagos; the other by way of Cameroon, Old and New Calabar, Bonny, Bross, Benin, and Niger to Lagos. On the return voyage the steamers of both lines are to touch at Havre. It is thought that the five steamers can be built for $500,000, and that a working capital of $50,000, with the outlay of the $500,000 for the new vessels, will be all that will be necessary to insure the success of the enterprise. To raise this money it is proposed to issue stock to the amount of $375,000 and bonds at 4½ per cent. to the amount of $175,000. The promoters of the enterprise think that a profit of 10 per cent. can be made on the capital invested. The Woermann line has so far paid no dividend.

BREMEN AND HAMBURG IN THE CUSTOMS UNION.

Any reference to the foreign commerce of Germany would be incomplete without mention of the fact that during the year the two great ports of the Empire—Bremen and Hamburg—have been incorporated into the German Customs Union, and thus the anomaly has been done away with of these important ports being independent of the General Government in customs matters and free ports of entry, while the country at large had a customs tariff. The entrance of these old free ports into the German Customs Union is another step in the direction of national consolidation, and will be of much advantage to the country at large. The construction of customs buildings and other public works connected with the conversion of them into customs ports has given employment to a large number of working people.

RAILWAYS.

Those great arteries of internal trade, the railways, showed during the year a marked increase in traffic. The German railways in the latter part of 1888 received more freight than they could carry with promptness. The general industrial improvement which occurred during the year increased traffic to such an extent that a great lack of means of transportation became manifest, and cars had to be borrowed from foreign parts to enable the railways to meet the demands made upon them, and the construction of an unusually large amount of rolling stock has become necessary.

The increased traffic is well shown by the receipts of the Prussian State Railways, which amounted to 37,843,000 marks (about $9,000,000)* more during the first eight months of the German fiscal year 1888–'89—that is, from April 1 to December 1—than during the same months of the year 1887–'88. This is all the more surprising, as in the estimates for 1888–'89 the railway receipts were put at 14,000,000 marks (about $3,500,000) less than they amounted to in 1887–'88. For the present fiscal year, therefore, the Government has so far got from the railways 52,000,000 marks (about $13,000,000) more than it anticipated. About five-eighths of the gain in November was due to an augmented carriage of freight.

There were not as many miles of railroad constructed in 1888 as in 1887. In the latter year there were 1,335 kilometers (829 miles) of new railroad constructed, but in 1888 only 1,055 kilometers (572 miles) were laid by the State, and 132 kilometers (82 miles) by private enterprise. The new lines were all branch roads.

FINANCIAL TRANSACTIONS.

The Bourse is always keenly sensitive to weal or woe in the business world, and rises and falls with the general industrial and commercial situation. It is significative, therefore, of improved business when high prices rule on the exchange. A rising market characterized the past year, and a great deal of business was done on the exchange, much more than in the preceding year. The public did a great deal of speculating during the year, and as people happened to speculate in a rising market they made considerable gain. Most of the railway shares on the Berlin exchange, both foreign and domestic, showed a great rise, and Government securities advanced as a rule. Bank and general stocks went up also a good deal.

The Bourse at present is strong and buoyant, and all sorts of securities, as a general thing, are quoted higher than at the close of 1887; and it is expected that the banks and stock companies will pay larger dividends than they did a year ago.

The money market appears not to have been in as favorable a state for the Bourse in 1888, especially in the latter half of the year, as it had been; but not because money had become scarcer, for the fall in the general rate of interest, which has been noticeable for some years past, still went on, and the general rate is so low that Prussian 3½ per cents are quoted above par. This cheapness of money has led the State and a large number of commercial and industrial concerns to convert their bonds into others paying less interest, and even the smallest towns, when they have a few thousands to borrow, take advantage of the low rate of interest to pay not more than 3½ per cent. on loans. The rate of interest seems to be dropping all the time. In the open market money was abundant at a very low rate during the first three quarters of the year, and throughout was cheaper than in the preceding year. The average general rate of discount of the German Bank

* Throughout this report the commercial agent estimates the marks in "round numbers," at the rate of about 25 cents to the mark. The actual value of the mark is 23.8 cents.

was 3.32 per cent., against 3.41 in 1887, and the private rate was about 2.25 per cent. in 1888, against 2.40 in 1887. In the market itself, where money is always to be got lower than at the bank, the average private discount was still lower.

The average general rate of discount at the German Bank since 1880 has been as follows:

	Discount.		Discount.
1880	4.24	1885	4.12
1881	4.42	1886	3.25
1882	4.54	1887	3.40
1883	4.05	1888	3.09
1884	4.00		

Large demands were made on Europe for money during the year by transmarine countries, principally on account of loans negotiated in Germany as well as in England and France; but while the Bank of England and the Bank of France, on the 15th of December, 1888, showed £1,740,000 and 105,000,000 francs less gold coin on hand, respectively, than at the same date in 1887, the German Bank had 882,000,000 marks ($220,500,000) of coin on hand, against 794,400,000 ($198,500,000) in 1887. On the middle of December, 1885, the amount was only 555,000,000 marks ($738,750,000). While compelled to make large payments in coin, the bank has been able not only to maintain but to increase its amount of coin on hand.

For a long time there have not been so many securities placed upon the German market as during the past year, especially bonds of foreign states and industrial securities. For some years past Germany has been a very receptive market for foreign securities, because higher rates of interest are got on them than on home paper, although a greater risk is run; and for years to come the savings of the people will probably be largely invested in this way in behalf of foreign undertakings. This activity was further stimulated by the attacks made on Russian securities during the year by a certain part of the press of the Empire in continuation of the crusade made upon them in the preceding year, and either this fact or else the high price of the new bonds and their lower rate of interest led many to get rid of their Russian securities and put their money into other paper.

Speculative paper, with fixed interest, is in great favor with capitalists, but more noticeable during the year was the disposition of the public to buy stocks paying dividends, because the railroad traffic was seen to be extraordinarily large, banking business lucrative, and industrial improvement manifest in most branches of industry.

NEW STOCK COMPANIES.

A great deal of new industrial stock was put upon the market; in fact, to such an extent that it recalled, it is said, the activity and speculation displayed at the close of the war with France and the establishment of the German Empire, except that last year it was more the enlargement of old

and tried establishments, while then it was the establishment of new and uncertain ones. At the time of the establishment of the Empire there was a great deal of wild speculation indulged in and much loss in consequence, which the German people have not yet forgotten. Then, again, such wild speculation is no longer possible to so great an extent, as the watering of stock is now made difficult by the present Imperial law.

The incorporated stock company form of doing business is increasing all the time and becoming more general. Thereby people of small means have an opportunity to invest their savings in industrial enterprises. The small establishments are all the time being pressed more and more to the wall by the big concerns, and the small capitalist is more disposed to invest his money in stocks of large establishments than risk it in doing business on his private account. There is a good deal of buying of such stock, therefore, by the public, and prices are high in consequence.

The number of new stock companies formed in Germany in 1888 is put at one hundred and eighty-four with 193,690,000 marks' ($48,000,000) worth of capital stock, eight being banking companies, with 30,740,000 marks ($7,600,000) of stock; forty-one breweries, with 28,690,000 marks ($7,150,000) of stock; six for mining, smelting, or salt working, with 20,230,000 marks ($5,500,000) of stock; eleven for working in stone or earth, with 18,370,000 marks ($4,600,000) of stock; eighteen for working in metals or on machines, with 18,000,000 marks ($4,500,000) of stock; four railway companies, with 11,300,000 marks ($2,800,000) of stock; ten transportation companies, with 16,170,000 marks ($4,000,000) of stock; seven in the textile industry, with 8,160,000 marks ($2,000,000) of stock, etc. Nearly all these, almost without exception, were organized upon old enterprises.

An interesting survey of the number and capital stock of new stock companies created since 1883 is furnished by the following exhibit:

Year.	Number.	Capital.	
		Marks.	*Dollars.*
1883	192	176,030,000	44,000,000
1884	153	111,240,000	27,800,000
1885	70	53,170,000	13,290,000
1886	113	103,940,000	25,980,000
1887	168	128,410,000	32,100,000
1888	184	193,690,000	48,420,000

SPECULATION IN GRAIN, ETC.

There was a good deal of speculation in grain and coffee during the year, which led, in the case of the latter, to wild movements in prices, resulting in a number of heavy failures. There was a decided fall in the price of tin, and copper also showed some decline.

RUSSIAN LOAN.

Large quantities of Russian Government bonds have been held by the Germans, and for the past year or two efforts have been made by a certain and influential part of the German press to discourage the people from hold-

ing them, on the ground that Russia is always on the verge of bankruptcy, is venturesome in its politics, the subject of internal disorder, and the prey of corrupt officials; and that in the event of unfriendly relations ever existing between the two countries Russia could repudiate her obligations to the people of Germany and thus inflict on the Empire a most grievous wound. When, therefore, the Russian 5-per cent. loan of 1877, payable in March, 1889, came lately to be converted into a new loan at 4 per cent., the journals in question endeavored to influence the people from taking the new bonds. A large part of the 1877 bonds held by the Germans were given up, instead of being exchanged for the new issue, but whether this was due to the admonitions of the newspapers, or because the new bonds were regarded as too high in price, it is difficult to say. Most of the new loan seems to have been taken in France.

THE IRON INDUSTRY.

For some years the German iron trade has been in a depressed state, but it did better last year. There was less exportation than in 1887, but combinations formed among the workers in iron and steel the year before for a limitation of production eased the market and led to better prices. Coal and ore were higher in price, and consequently the raw materials used in finished articles were dearer.

In the Rhenish-Westphalian iron market a stronger feeling is manifested than formerly, and prices, in consequence, have not only become firmer but show a rising tendency. Raw iron, especially, is looking up. The trade in puddle-iron has materially improved. In Thomas iron there is an increasing consumption, and the price has been raised. Prices for spiegel iron have risen, and there is not only an increased demand for it at home, but larger orders from abroad. In Bessemer iron the trade is inactive, and there is a prospect of a lessened market. The demand for foundry iron is daily increasing, and the foundries are represented to be very busy. For rolled wire the market is unfavorable, and the mills have been obliged to limit production. In fine plate trade is shown by becoming better, but there has not been sufficient improvement to make business profitable. The market for coarse plate and boiler plate is good. The steel and iron works and machine-shops engaged in making cars and railway materials and small iron-ware are pretty busily employed, as are the foundries and boiler-makers.

The following exhibit shows prices per tonne (2,204 pounds) at the works at the end of December 1888 and 1887 respectively:

	December, 1888.	December, 1887.
Spiegel iron (10 to 12 per cent. of manganese)	$13.32 to 13.56	11.90 to $12.13
Bessemer iron	12.85	12.13
Puddling iron	12.25	11.90
Foundry iron No. 1	14.04 to 14.51	13.56
Foundry iron No. 2	13.32 to 13.56	12.85
Foundry iron No. 3	12.37 to 12.85	11.90 to 12.13
Bar iron (good quality)	29.75 to 30.22	29.03 to 29.75
Boiler plate No. 1	40.46	38.08
Boiler plate No. 2	35.70	35.70

At the close of 1887 the prices of iron had already risen somewhat. According to the published statistics of the German Iron and Steel Men's Union the amount of raw iron produced in Germany, including Luxemburg, from January 1, 1888, to December 1, 1888, amounted to 3,874,618 tons, against 3,547,497 during the corresponding period of 1887.

COAL AND COKE.

At the mines in Westphalia there is great activity in coal and coke, and about 1,000 wagon-loads* more a day were being delivered at the close of the year than at the corresponding time in 1887. Prices were strong and on the rise, and the mines have been doing a first-rate business.

From Silesia the report also is that there is a very active demand for coal. The demand has been greater than the ability of the railroads to transport.

TEXTILES.

In woven stuffs business was more encouraging, especially among the cotton-mills and jute factories.

The weavers are suffering from very depressed prices, which are alleged to be due to a material rise in the price of yarn and materials, as well as to increased costs of manufacture, so that a rise in the price of woven cloths is absolutely necessary, and an effort is being made to bring this about by combinations among the weavers.

For velvets there is a better outlook. It is thought that there will be less demand for, and less production of the light and cheap plushes, and that even the finer kind of plushes will be replaced this year for dress purposes by finer velvets. Velvet, it is affirmed, is going to be soon much more used than it has been. This will reanimate the trade and give employment to a large number of hand weavers, who have been for a long time with little or nothing to do. Raw silk is now so low in price that it is said that the sale of the fine Croise velvets will no longer be confined to the rich, but will rapidly extend to the people of moderate means. Plushes are made extraordinarily cheap and keep a hold on the market on this account. Plush is being made so poor in quality that it is said it could hardly be made worse. It is even competing with what is known as cotton plush.

CEREALS.

The increased duties imposed on grain in 1887—from 71 cents to $1.19 on wheat and rye, 35 to 95 cents on oats, 35 to 53 cents on barley, and 23 to 47 cents on maize, per 100 kilograms (220 pounds)—and the inferior crops of the past year have, of course, led to an increase of prices. The grain harvest in Germany, as well as in other countries, the past summer was unsatisfactory, and an increased importation became necessary at higher prices and higher rates of duty. From July to November there was a decided rise in prices, which reached its highest point in November and then commenced

*A wagon-load is 10 tons.

to fall. Nevertheless the year 1888 closed with the prices for wheat about 2½ marks (50 cents) higher than at the beginning of the year, and for rye about 2 marks (50 cents) higher per 100 kilograms (220 pounds).

From the publications of the Imperial bureau of statistics at Berlin it appears that the average price of rye at Berlin in October, 1887, the month before the increased duty went into operation, was 111.30 marks per tonne (2,204 pounds), while in October, 1888, it was 159.48 marks. This was a decided rise, being an increase of about 44 per cent. For the Leipsic market the average price for October, 1888, is put at 172.78 marks per ton, against 124.50 marks in 1887. This was a rise of about 40 per cent. With respect to wheat, the official report is that its average price was 187.42 marks per tonne at Berlin in October last, against 150 marks in October, 1887, or a rise of 25 per cent. Mannheim is, I believe, the great wheat market for southern Germany, and here the average price in October, 1888, for superior wheat is given at 223.30 marks, against 183 marks in 1887. In oats there was a rise at Berlin during the period in question of 60 per cent. In barley and maize prices also advanced, but not to the extent manifested in wheat, rye, and oats.

So far as officially ascertained, up to the middle of October there was 15½ per cent. less of spring wheat harvested in 1888 than in 1887, 18.7 per cent. less of spring rye, 6.7 per cent. less of summer barley, 19 per cent. less of peas, 17.6 per cent. less of potatoes, 47 per cent. less of hops, and altogether in spring wheat and spring rye 23,286,400 double centners (a double centner is 221 pounds) less than in 1887. Among grains only oats showed an increase over the product of the preceding year, amounting to 5.6 per cent. The increased price for grain has, of course, sent up the price of bread. Black bread costs about 1 cent more per loaf of 4 pounds.

THE BEET SUGAR INDUSTRY.

The beet root crop amounted to less than in the preceding year. On the first of August of the past year the new sugar law went into effect, by which the tax upon roots was reduced from 1.70 marks (42 cents) per hundred kilograms (220 pounds) to 80 pfennigs (20 cents), and the export drawback allowed, from 17.25 marks ($4.31) a hundred kilograms of raw sugar having at least 90 per cent. of polarization to 8.50 marks ($2.12), and a new consumption tax of 12 marks ($3) a hundred kilograms introduced on sugar of all kinds consumed in the Empire. This latter tax, it is thought, will yield the Government about $12,000,000 on about 4,000,000 double centners of sugar (a double centner is 221 pounds), which is about the amount consumed in the empire. The export bounty is 8.50 marks ($2.12) on raw sugar containing at least 90 per cent. of sugar, 10 marks ($2.50) on refined sugar containing at least 90 per cent. of sugar and not more than 98 per cent., and 10.55 marks ($2.63) on sugar containing at least 99½ per cent. of sugar.

In 1868 a law was passed fixing a tax on beet roots and providing for a drawback on exported sugar. At that time it took 12½ hundred-weight of beet

roots to give 1 hundred-weight of sugar, and on this basis the tax was imposed, so as to give the Government ten marks ($2.50) on each hundred-weight of sugar; and on the sugar when exported a drawback of 9.40 marks ($2.35) was allowed. This afterward turned out to be a very advantageous arrangement for the sugar manufacturers, as improved processes of manufacture took place by which 1 hundred-weight of sugar was obtained from 9 hundred-weight of roots, and sugar was even got from molasses, which the law of 1868 did not tax at all. The sugar manufacturers, therefore, instead of paying a tax of 10 marks ($2.50), as contemplated by law, paid only 7.80 marks ($1.95) a hundred-weight, and on exporting the sugar got a drawback of 9.40 marks ($2.35) a hundred-weight, thus receiving a nice bounty. All this was very fine for the manufacturers, but very disadvantageous to the imperial exchequer. In 1883, and again in 1886, an effort was made to regulate the matter somewhat by laws passed in those years; but the knife was not sufficiently well applied, and it became necessary to pass still another law on the subject, which went into effect on the 1st of August, 1888.

On the sugar consumed in the Empire, say about 3,500,000 double centners annually, the Government received a tax of about $15,000,000, to collect which cost about $1,500,000, and the actual loss to the imperial exchequer by the drawback allowed on exported sugar amounted to about $9,000,000 to $9,500,000. Thus the Government got from the sugar tax in net receipts only $3,500,000 to $4,500,000. The lion's share went in indirect bounty to the manufacturers. Under the present law the manufacturers will still get an export premium of about 2½ marks per double centner, or about $4,000,000 for the whole amount annually exported.

THE WINE TRADE.

In my annual report for 1887 I said that great dissatisfaction existed among wine merchants over the application to wine of the law of 1879 respecting the adulteration of foods and drinks, on the ground that the law was not precise enough in its definition of adulteration, and left harmless and necessary manipulation as subject to legal process as willful and injurious adulteration. During the past year the trade has kept up its agitation for a special law defining and limiting what is permissible and what is not; but although the subject is before the Reichstag it has not yet obtained any legislation. The wine of Germany in some years, as in the present one, for instance, is to a large extent so sour as to be undrinkable without improvement with sugar. The wine dealers all sugar freely, when necessary, and otherwise improve the wine, but are not justified by law in doing so, and what they want is a statute on the subject which will permit manipulation, so far as not absolutely injurious to health, without having to label the doctored product treated wine. The chamber of commerce at Mayence in a communication to the Reichstag on the 30th of the last month formulated its desires as follows: (1) That the manufacture, as well as the sale, of made wine — that is, of wine fixed up in what is known as the cold way — be en-

tirely prohibited; (2) that the addition of pure sugar to wine so long as it remains "must" be allowed; and (3) that the law relating to the adulteration of foods and drinks be amended to this end.

The vintage of 1888 was very unsatisfactory, and the wine obtained was so poor in quality and so sour that very free sugaring has been necessary to render it at all palatable. The summer was very unpropitious for the grape, and in fact for all crops, being very cool and rainy, and the farmers and fruit growers had an unsatisfactory year. They got rain almost day after day for a long period, and their crops suffered seriously in consequence. In quantity the vintage was quite respectable, being better in this respect than in 1887, 1886, or 1885. An extended report on the vintage was made by me to the Department on the 3d ultimo.

BEER BREWERIES.

The beer breweries of Germany appear to be in a prosperous state, and a large number of them have been converted into stock companies. In the last six years one hundred and eleven stock brewing companies have been organized, with a gross capital of 85,910,000 marks ($21,475,000). Most of these were old breweries, whose owners took advantage of the favorable market for brewing stock to convert their establishments into stock concerns, and thereby made much profit; but a large increase of brewing capital and an enlarged production have necessarily attended these changes.

The ease with which beer can nowadays be shipped in all directions incites the large breweries to reach out for an extended market, and the products of certain breweries of repute are now met with all over the Empire. The superiority of the beers of the large breweries, and their cheapness, makes competition difficult for the small breweries, and they are being forced out of the market. Great quantities of bottled beer are sent out in every direction by the large breweries, and the exportation to foreign countries has become of much importance, especially of beer bottled on the Pasteur principle and the exportation is growing all the time. Bavaria is, and will doubtless remain, the great source of supply for good beers, and the products of its breweries are in great and increasing demand all over the Empire.

Germany during the German fiscal year 1887–'88 imported 142,422 hectoliters of beer, against 135,164 in 1886–'87, and exported 1,064,236 hectoliters in 1887–'88, against 1,070,993 in 1886–'87 and 1,249,697 in 1885–'86; but the entire production in the Empire increased from 45,068,030 hectoliters in 1886–'87 to 47,094,377 in 1887–'88 (hectoliter = 26.417 gallons). As there was a decreased exportation and increased importation, it is naturally to be concluded that the consumption of beer in the Empire increased in 1887–'88 over 1886–'87, and the Government reckons that there were on an average 98 liters (102.9 quarts) of beer consumed by each person in the Empire in 1887–'88, against 82.8 liters (86¾ quarts) in 1871. During the last six years the consumption of beer per capita has gradually increased from 84.8 liters (89 quarts) to 98 liters (102.9 quarts) per head.

Exclusive of Bavaria, Wurtemberg, Baden, and Alsace-Lorraine, there were 9,639 breweries in operation in Germany in 1887–'88, against 9,708 in 1886–'87, or 69 less. These breweries turned out altogether 27,475,846 hectoliters of beer, or an increased production of 3.4 per cent. In the manufacture of this beer were used 5,354,779 double centners of barley malt (181,110 double centners more than in 1886–'87), 148,385 double centners of wheat malt (6,632 double centners less than in 1886–'87), 739 double centners of other grain (218 less than in 1886–'87), 9,684 double centners of rice (2,881 more than in 1886–'87), 3 double centners of starch flour, etc., 25,434 double centners of sugar (4,239 more than in 1886–'87), 2,358 double centners of sirup (255 less than in 1886–'87), and 5,133 double centners of other surrogate (94 more than in 1886–'87).

In the whole German Empire, excluding the free cities of Bremen, Hamburg, and Lübeck, but including the duchy of Luxemburg, there were 47,094,377 hectoliters (1,244,233,000 gallons) of beer produced in 1887–'88, of which Bavaria alone manufactured more than one-fourth, against 45,068,030 hectoliters (1,190,696,000 gallons) in 1886–'87, and a consumption of 46,172,563 hectoliters (1,219,879,000 gallons), or 98 liters (102.9 quarts) per capita, against 94.6 liters (99⅓ quarts) in 1886–'87.

On beer the German Government receives about $6,000,000 in taxes, Bavaria about $8,000,000, Wurtemberg about $2,175,000, and Baden about $1,200,000. These states are independent of the General Government in the taxation of beer, and have their own systems.

Improved methods of manufacture enable the breweries to obtain more beer from the materials used than formerly without lowering the quality of the beer.

FOOD PRICES.

The average prices in Hesse, according to the statistics of the Hessian government, of the leading articles of food, etc., during the first ten months of 1888 were as follows, compared with 1887:

	1888.	1887.
Wheat, per 100 kilograms	$4.44	$4.23
Rye, per 100 kilograms	3.52	3.42
Barley, per 100 kilograms	3.66	3.61
Oats, per 100 kilograms	3.41	3.09
Hay, per 100 kilograms	1.76	1.46
Straw, per 100 kilograms	1.25	1.13
Potatoes, per 100 kilograms	1.23	1.28
Peas, per 100 kilograms	5.78	6.08
Beans, per 100 kilograms	6.80	6.37
Beef, per kilogram	.31	.29
Veal, per kilogram	.27	.25
Mutton, per kilogram	.26	.25
Pork, per kilogram	.29	.27
Wheat flour, per kilogram	.08	.08
Rye, per kilogram	.06	.06
Rye bread, per kilogram	.05	.05
Butter, per kilogram	.46	.45

	1888.	1887.
Coffee, per kilogram	.72	.72
Eggs, per ten	.14	.14
Milk, per liter	.04	.04
Petroleum, per liter	.05	.05
Pit coal, per ton	4.15	4.10

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EXPORTATION FROM MAYENCE DISTRICT.

The exportation from the Mayence consular district to the United States during the year ended December 31, 1888, compared to 1887, was as follows:

	1888.	1887.
Agate-ware and jewelry	$240,229.92	$219,713.44
Aniline colors and chemicals	291,708.70	248,697.78
Cement	137,380.88	102,923.90
Clay pipes	11,186.26	9,168.66
Glue	46,576.89	45,856.60
Hops	163,408.79	99,017.60
Leather	229,830.61	138,687.83
Preserved fruits and vegetables	14,288.68	11,035.25
Straw pulp	44,580.96	19,181.07
Sundries	28,087.53	54,590.75
Wine and brandy (very little brandy)	661,248.53	743,162.17
Total	1,868,527.75	1,692,035.05

GERMAN PATENT LAW.

In my last annual report I mentioned that the German patent law had long been in need of a thorough revision, and that the Government was busy with the task of overhauling it. No legislation has been enacted in the matter, but it is said that a bill on the subject will be presented by the Government to the Reichstag during the pending session. The present law is very unsatisfactory to inventors.

JAMES H. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Mayence, January 12, 1889.

CATTLE AND DAIRY FARMING IN NEW SOUTH WALES.

REPORT OF CONSUL GRIFFIN, OF SYDNEY.

The recent introduction of the Cooley system of setting milk, together with many other American appliances used in the manufacture of butter and cheese, has given quite an impetus to dairy-farming in New South Wales. The absurd quarantine laws of the colony in prohibiting the importation of cattle except from other portions of Australasia have operated very seriously against anything like an improvement in the condition of the cattle. The people have noticed that their stock has deteriorated, and are agitating the removal of the restrictions. An intercolonial stock conference assembled on

September 27, 1886, at which delegates from all the Australasian colonies except Western Australia were present. A resolution was passed almost unanimously to the effect that the time had arrived when the prohibition on the importation of cattle could be safely removed, under proper restrictions, and earnestly requested the various governments of Australasia to give effect to the resolution, but not one of the colonies has as yet complied with the request.

The absurdity of the prohibition was shown at the conference by directing attention to the admission of cattle from the colonies where diseases existed and refusing admission from colonies that enjoyed absolute immunity from such diseases. New Zealand was the last colony to adopt the prohibition, and the result is that she had, for a considerable period, an immense advantage over the other colonies. New Zealand, by keeping her ports open, was enabled to improve the condition of her herds with blooded animals from foreign countries. The advantage enjoyed by New Zealand is now disappearing, and unless the restrictions against imported stock are removed her cattle will soon be in no better condition than those in other parts of Australasia.

Mr. Meredith, a member of the Sydney conference, read a very interesting and valuable paper before that body, in which he attributed the great progress made by the United States in raising cattle to the uninterrupted importation of blood-stock from other countries. He was very decided in the opinion that the condition of cattle in America was far better than that of Australia, and he argued that what had been done in the United States could be done in Australia. He said: "We must be prepared in the future for a keen competition in the butter and cheese export trade. The United States is rapidly developing a variety of breeds of dairy cattle as most suitable to the different states. For developing an extensive dairying business in these colonies it will be absolutely necessary to build up herds of various kinds or grades, and at present we have not the material to begin with."

The subject of the repeal of the laws against the importation of cattle is being strongly advocated by the press, and it is thought that before the close of the present year the various governments will permit cattle to be landed upon inspection from non-infected ports. No inconsiderable part of Australia is well adapted to cattle raising. Here there are no heavy snows. The spring, autumn, and winter are the pleasantest parts of the year. The summers are disagreeable on account of the intense heat, but for about nine months of the year no fault can be found with the Australian climate, except in seasons of drought. In the more elevated places, such as on the high table-lands of Glen Innes, sharp white frosts appear in the winter, but they are soon dispelled by the sunshine. Snow is not found to any depth in but one part of the colony, viz, that around Mount Kosciusco, and even there it is the exception and not the rule. Last winter proved the exception, and snow fell in large quantities, necessitating the use of snow-shoes. The rivers were also frozen hard enough to admit of skating, the first time for many

years in the history of the colony. In the coast districts winters pass with scarcely an appearance of frost, and especially on the northern coast line. Grass grows all the year round, and usually there is an abundance of natural food.

THE ILLAWARA DISTRICT.

Some of the finest dairy-farms in Australia are located in the celebrated Illawara district. The district is one of the most beautiful and romantic in the colony. It consists of vast tracts of undulating hills and rolling grass lands between the mountains and the sea. It contains the electorates of Illawara and Kiama. It commences at the coal cliffs, about 30 miles from Sydney, and extends 60 miles southward to Shoalhaven. The district is thickly populated, and contains the beautiful and rapidly-growing towns of North Illawara, Wollongong, Central Illawara, Shellharbour, Port Kembla, and Bulli.

The geological formation is generally carboniferous, with granite and basalt cropping out. One of the chief attractions of Illawara is the beautiful lake of that name, 9 miles long and 3 broad, surrounded by hills from 400 to 500 feet in height. A part of the district is broken by the wild lands of Dromedery, where the mountains jut out into the sea, but beyond the wild lands the country assumes an undulating character again, especially about Bega, 250 miles southwest of Sydney, and extending all the way to the fertile table-lands of Manara. The lands in the southwestern portion of Illawara are fully as fertile as those around Wollongong, so often described as the garden of Illawara.

Wollongong, the chief town of the district, is situated about 64 miles south of Sydney, in latitude 34° 20′ S. and longitude 150° 55′ E. It has a population of about 10,000. The harbor is the most important on the south coast, and the third as to shipping and tonnage in the colony. The coal trade is the chief industry, and next to that comes dairy-farming. Indeed, as to the latter, it may be said that by far the greater part of the colonial market is supplied with butter and other dairy produce from Wollongong. The average annual export of butter from Wollongong is about 15,400,000 pounds. Between five and six hundred kegs are frequently shipped weekly. The harbor has recently been improved and the wharfage facilities increased. The ease with which the port is reached by the small coasting vessels has made the place very popular with the market dealers of Sydney. The district is also being opened up by railway.

CATTLE CENSUS.

The total number of cattle in New South Wales at the end of March, 1887, was 1,367,844, against 1,317,315 for the year 1886, thus showing an increase of 50,529 for 1887. The long series of drought during the last ten or twelve years made sad havoc with the herds, and the result is that the number of cattle has declined from 3,131,013 in 1877 to 1,367,844 in 1887, a decrease of 1,763,169.

The subjoined table shows the number of cattle in New South Wales for each year from 1877 to 1887, inclusive:

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Year.	Cattle.	Year.	Cattle.
1877	3,131,013	1883	1,859,985
1878	2,746,385	1884	1,640,753
1879	2,771,583	1885	1,425,130
1880	2,914,210	1886	1,317,315
1881	2,580,040	1887	1,367,844
1882	2,597,348		

The cattle are distributed throughout 59 cattle districts, Casino heading the list with 135,059 and Glen Innes coming next with 93,232. Kiama, a port of the Illawara district, had 64,595; Teaterfield, 61,139; Armidale, 60,047; Grafton, 59,608; Maitland, 52,109; Illawara, 15,000, and Dubbo, 13,099.

IMPORTS OF CATTLE.

During 1886 there were imported into New South Wales 80,677 cattle from the neighboring colonies, valued at $2,167,840, against 36,602 cattle, valued at $1,040,910, for the year 1885. The following table shows the number and value of cattle imported into New South Wales for each year from 1877 to 1886, inclusive.

Year.	Number.	Value.	Year.	Number.	Value.
1877	3,563	$75,095	1882	5,930	$249,895
1878	5,453	286,395	1883	3,460	196,595
1879	7,203	243,420	1884	36,180	1,575,550
1880	3,253	72,675	1885	36,602	1,040,910
1881	9,602	317,635	1886	80,677	2,167,840

During the year 1886 Victoria furnished the colony with 10,345; South Australia, 1,209; Queensland, 68,321; New Zealand, 771; Western Australia, 31; total, 80,677.

EXPORT OF CATTLE.

New South Wales exported during the year 1886 51,359 cattle, valued at $1,485,650, against 52,799, valued at $146,645, for 1885.

The following table shows the number and value of cattle exported from New South Wales for each year from 1876 to 1886, inclusive:

Year.	Number.	Value.	Year.	Number.	Value.
1876	69,899	$2,690,980	1882	52,137	$1,410,220
1877	62,875	2,136,470	1883	42,260	1,226,810
1878	51,155	1,976,110	1884	40,074	1,046,260
1879	58,050	2,025,259	1885	52,999	1,465,645
1880	86,127	2,251,720	1886	51,359	1,485,650
1881	55,540	1,254,645			

Of the cattle exported during 1886 Victoria received 47,650 head, valued at $1,333,245; South Australia, 2,897, valued at $109,260; Tasmania, 268, valued at $12,775; Queensland, 508, valued at $38,310; South Sea Islands, 6, valued at $1.75; Western Australia, 15, valued at $3.50; and Hong-Kong, 13, valued at $7.50; total number, 51,359, and total value, $1,485,650. According to the last report of the chief importer of stock the only prevailing diseases among the cattle are pleuro-pneumonia and tuberculosis. In twenty-eight districts, on one hundred and seventy-seven runs, the cattle were reported as affected slightly with pleuro-pneumonia, and in thirty-one districts the cattle are reported as being free from that disease. In twenty-five of the infected districts the disease was caused by contagion from infected traveling stock from Queensland, in two districts its cause could not be traced, and in one district the cause not known. From twenty-seven districts it is reported that inoculation was successfully performed on one hundred and seventeen out of one hundred and nineteen holdings or stations. On the two holdings where the inoculation was unsuccessful the failure is attributed to bad virus, for a second operation proved successful.

In every case the result was satisfactory, the disease leaving the herds. The number of owners in favor of inoculation is given as 4,532; against, 1,106; 2,215 undecided, and 6,610 opinions not known. The number of owners in favor of compulsory inoculation in the case of infected herds is given as 3,645; against it, 1,682; undecided, 2,066, and 6,628 opinions not known. The reports of the inspectors show that the practice of inoculation for pleuro-pneumonia is becoming more and more general, with very favorable results. The chief inspector of stock obtained much valuable information from a few of the largest owners of cattle as to their experience with virus, and the information which is given at length in his report furnishes, I think, abundant evidence of the benefit of inoculation.

Mr. John McKenzie, one of the delegates from New Zealand to the Sydney stock conference, stated that New Zealand, in importing cattle from Australia, introduced pleuro into Otago at the end of 1863, and that it remained two or three years, but with careful regulations and inoculation they had been able to stamp it out, and that not a single case of pleuro existed throughout New Zealand.

In regard to tuberculosis, the chief inspector of stock says that it should not be confounded with pleuro, for the former is altogether of a more subtle and dangerous character. He recommends that cattle affected with the disease should be condemned and destroyed. The tuberculosis, he says, is hereditary, and is not only communicated from one animal to another, but to human beings, as experience has shown, with inoculation.

DIFFERENT BREEDS.

All the principal breeds of cattle are represented in the herds of New South Wales. The short-horns are the most numerous. The total number of this class at the end of March, 1887, was 560,918, of which 34,819 were

pure bred and 526,099 were ordinary. Of the Hereford, a class of cattle rapidly growing in favor, there were 167,231, of which there were 15,430 pure bred and ordinary 151,801. The Devons numbered, pure and stud, 5,699, and ordinary, 43,138; total Devons, 48,837. Black polled, pure and stud, 368; ordinary, 719; total Black polled, 1,087. Ayrshire, pure and stud, 942; ordinary, 2,595; total Ayrshires, 3,537. Alderneys, pure and stud, 298; ordinary, 179; total Alderneys, 473. Crosses, first crosses, 3,485; ordinary, 582,276; total, 585,761. The crosses are estimated as follows: Short-horns and Herefords, 220,463; short-horns and Devons, 75,618; Herefords and Devons, 24,533; short-horns and black polled, 2,560; Ayrshire and short-horns, 4,000; and the remainder, 248,247, not recognized.

The estimated number of fat cattle to be sent to market during the year ending March, 1888, is given by Mr. Alexander Bruce, chief inspector of stock of New South Wales, as 213,279, and the number of store cattle as 139,269. From fifteen districts the fat cattle are sent principally to Melbourne, Victoria, and from three districts to Adelaide, South Australia, and from the remaining districts to Sydney, Mudgee, Bathurst, Orange, and Tamworth, all in the colony of New South Wales. The number of cattle kept wholly in the paddocks is given at 937,595; the number in open, 274,596; and the remainder, 155,653, are depastured both ways.

There is in New South Wales, as elsewhere, a variety of opinion in regard to the best kinds of cattle for dairy purposes. The Ayrshires appear to give the most satisfaction, although the number used for such purposes is nothing like as large as that of the short-horns. Some farmers show a decided preference for a cross between the Ayrshire and short-horn. The Alderneys are coming more and more into favor, but the number of pure breds, as I have mentioned in a former part of this report, in the whole of the colony is only 298. There are also a number of superb Jerseys, which have given great satisfaction for dairy purposes, especially those on the model farm of Mr. Alfred Bennett, near Camden. These cattle are usually described as Alderneys, but as a matter of fact they represent, notwithstanding their resemblance to the Alderney, an altogether different and distinct breed.

As these two kinds of cattle are almost everywhere confounded, I have thought to mention here some of the differences between them. In the first place, the Jersey has been kept pure on the Channel island of that name for centuries, and no foreign cattle have ever been allowed to land on Jersey for over a period of one hundred years. This has not been the case in the Alderney Island, for foreign cattle have been allowed to land there, and, as a result, the Alderneys have not been kept pure. They are mainly made up from a cross of the Jersey and cattle from Guernsey on the original stock. The Alderneys are not, therefore, regarded as so good as either the Jerseys or Guernseys, and have not so many fine points, being more uneven in their make-up. The term Alderney was applied by mistake to the Jersey cows by the English when they first began to import them, but importers now give to each breed its proper name.

METHOD OF DAIRY-FARMING.

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Australian cattle are not housed or stall-fed. Their food consists, with very few exceptions, of the natural grasses. The dairy-farms vary in size from 100 to 600 acres. In an average year four acres of pasture would be sufficient to graze one cow. Of course, in bad seasons this would not be enough, but in seasons like the present it would be more than enough. Some cows, especially in the Illawara district, give as much as 418 pounds of milk per week, from which 18½ pounds of butter are made. This is the largest yield reported for the year 1886. The average value of cows per year is about £12 ($58.39) per head; that is when butter would sell for 9*d*. (18 cents) to 18*d*. (36 cents) per pound. Such a cow would give milk eight months out of the twelve.

Calves are usually hand-fed, and, when not required for store purposes, find a ready market in Sydney at good figures. A man or boy on horseback is employed to bring the cows up and drive them into the stock-yard, from which they are driven into bails, a system of torture, as far as I know, peculiar to Australia. The milking-shed is a roughly made structure, composed of a few uprights and slabs, with one side open, and covered over with a shingle, bark, or iron roof, the floor being paved with wood or stone. The bails are formed by large uprights set into the ground and reaching to the roof, something after the fashion in which stalls are fixed in stables. Strong lateral double braces are morticed into these uprights, one set close to the ground and the other about five feet above the ground. These braces are securely fastened opposite each other, about three inches apart; swinging-bars are placed into the grooves of the beams at sufficient distance from one of the uprights to hold the neck of the cow. The lower end of the bar is fastened loosely by a bolt to the beams. This forms a pivot by which the top of the bar may be opened or closed as required. The cow to be milked is driven into the stall, and is made to insert her head under the top beam and along the side of one of the uprighters. The swinging-lever is closed and a wooden peg put through it and the beams, which holds the cow in her place. A small rope with a noose on it is then passed round her hind leg nearest to where the milker sits, and tightened around a post so as to stretch the cow's leg out horizontally behind her. The milking is then proceeded with in the usual way. This method, as may be readily imagined, does not improve the temper or disposition of the cow.

MANUFACTURE OF BUTTER.

The co-operative system of making butter, now becoming very popular in Australia, is far more satisfactory and profitable than the old method. Under the new system, the farmers interested form a company and elect a board of directors, which appoints the manager or superintendent. All the butter factories are not co-operative, for some of them are conducted wholly by private enterprise. The milk is bought at a fixed price per gallon, and worked up to the best advantage. The machinery for the factories is usually pur-

chased in the United States. About three or four years ago there was only one butter factory in New South Wales, now there are no fewer than twenty-six factories. By the new system, which is a very economical one. The milk is taken off the premises as soon as obtained from the cow, and the pails are brought back to the dairy thoroughly cleansed by steam. The butter is sent to market in tubs or jars holding about one hundred pounds each. As soon as it reaches the market it is either sold out of the tubs or pressed into rolls by the butter dealer. By the old method the butter was poorly cleansed and rapidly became rancid. Experiments are now being made in salting butter by immersing it in strong brine while in the granular state, and pressing it into rolls with machinery. I have never seen in any part of Australia butter put upon the market properly pressed into rolls, as in San Francisco and in other cities in the United States, and this is one of the reasons why the Australian product will not keep fresh but for a very short period.

The Kiama Agricultural Association has done much towards the promotion of the dairying interests in Australia. It has been in the habit for many years past of awarding a number of prizes for cows producing the greatest quantity of milk. The association admits to its herd-book any cow that can produce twelve pounds of butter or three hundred and fifty pounds of milk per week. According to the rules of the association the progeny of cows, male or female, qualified as above, are admitted into the herd-book, and any bull, four of whose progeny have passed the required test. A series of prizes were offered in 1886 by the association to cows giving the most milk in twenty-four hours. It was determined that the test should take place in the same locality, the object being to place competing animals upon an equal footing. The following are the results of the tests, which were conducted on Mr. N. Craig's farm, "Jarra Park," near Kiama:

Name of owner.	Date of test.	Weight of milk per week.	Weight of butter.	Nature of pasture.	Weather.
		Lbs.	*Lbs. Oz.*		
Hugh Colley	Nov. 12–19, 1883	419	18 0	Rye, grass, and clover	Strong westerly winds.
Do	Nov. 12–19, 1883	392	15 0	do	Do.
Cole Bros	Nov. 15–22, 1883	343	13 4	do	Windy and hot.
Do	Nov. 15–22, 1883	293	12 0	do	Do.
J. McCaffrey	Dec. 17–22, 1883	289	14 4	do	Excessively hot.
W. Grey	Feb. 7–8, 1884	300	12 8	Grass (dry) supplemented with broadcast corn.	Close and dry.
Hugh Colley	Jan. 24–31, 1886	266	12 4	Broadcast corn	Windy, hot, and dry.
J. T. & E. Cole	June 1–7, 1886	256	12 12	Grass pasture	Cold.
Hugh Dudgeon	Dec. 2–9, 1886	301	12 0	do	Hot but moist.
Spinks Bros	Dec. 2–9, 1886	312	14 10	do	Do.

The following are some of the prizes awarded in 1885–'86: For cows giving the largest quantity of milk in twenty-four hours, £10 ($48.66); second quantity, £8 8*s.* ($40.97); third, £5 ($24.33); fourth, £3 3*s.* ($15.32); fifth, £2 2*s.* ($10.22). Best milking heifer under three years

old, £2 2s. (10.22); second best, £1 ($4.86). In both classes competing animals had to be milked three times within twenty-four hours in the presence of two members of the committee, the second and third milkings only being weighed. The result of the competition between the prize-winners was as follows: Mr. H. Frederick's cow, 53 pounds; Mr. H. Dudgeon's cow, 53 pounds; Mr. H. Colley's cow, 51½ pounds; Mr. John Lindsay's cow, 51½ pounds; Messrs. James Bros.' cow, 49½ pounds. At a later period in 1886 the association offered similar prizes to the above under somewhat altered conditions, and the following results were obtained:

Name of owner.	Color of animal.	Date of test.	Weight of milk in 24 hours.						Pasture.
			Morning.		Evening.		Total.		
		1886.	*Lbs.*	*Oz.*	*Lbs.*	*Oz.*	*Lbs.*	*Oz.*	
John Lindsay	Red	Jan. 9	26	0	25½	0	51½	0	Grass, sour milk, cracked corn, and bran.
Do	Light roan	Jan. 9	22	0	22¼	0	44¼	0	Grass, cracked corn, and bran.
Do	Dark red	Jan. 9	21	0	21	0	42	0	Do.
Daniel Boyd	Roan	May 5	30½	0	28	0	58½	0	Rye grass.
Do	Red	June 9	27	0	22	0	49	0	Grass paddock.
Robert Miller	do	Oct. 2	26	0	29	0	55	0	Clover and rye grass.
H. Fredericks	do	Oct. 22	...	...	...	...	52½	0	Do.
James Sharpe	Roan	Nov. 23	27	0	25¾	0	52¾	0	Do.
Do	Red and white	Dec. 30	27	14	27	0	54	14	Do.
		1887.							
James W. Cole	Light roan	Jan. 28	31½	0	28	0	59½	0	Do.
		1886.							
Robert Miller*	do	Nov. 27	17½	0	17½	0	35	0	Do.
Hugh Colley, Jr*	do	Oct. 29	18	0	18½	0	36½	0	Do.

* Heifer under three years old.

Strong efforts are being made by capitalists and others to encourage dairy-farming in the northern coast country. Formerly corn (maize) and timber were the chief products of those districts, but the advance in the price of butter and the decline in that of maize are inducing the farmers there to turn their attention to butter and cheese making. The climate is hot, but the farmers hope to overcome that obstacle by the erection of cooling appliances. The northern country is undoubtedly better adapted to the growth of sugar-cane, coffee, arrowroot, tapioca, pine-apples, and bananas than for the products of the dairy.

IMPORTS OF BUTTER.

The total quantity of butter imported into New South Wales during the year 1886 was 27,940 cwt., valued at $797,680, against 32,366 cwt., valued at $590,975 for 1885. The following table shows the quantity and value of butter imported into New South Wales during the year 1886, with the names of countries whence imported:

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Country.	Quantity.	Value.
	Cwt.	
Great Britain	84	$2,040
Victoria	6,457	176,655
South Australia	490	17,805
Queensland	132	3,760
Tasmania	950	29,405
New Zealand	19,375	550,200
West Australia	5	60
Fiji	9	415
United States	25	695
France	67	2,750
Germany	8	300
Italy	321	13,165
India	20	400

IMPORTS OF CHEESE.

The total quantity of cheese imported into New South Wales during the year 1886 was 1,229,334 pounds, valued at $217,540, against 769,148 pounds, valued at $145,815. The subjoined table shows the quantity and value of cheese imported into New South Wales during the year 1886, with the names of the countries whence imported:

Country.	Quantity.	Value.
	Pounds.	
Great Britain	99,055	$18,975
Victoria	198,073	31,520
South Australia	37,857	5,875
Queensland	1,823	330
Tasmania	22	5
New Zealand	859,824	151,751
Western Australia	106	10
Germany	11,007	1,975
New Caledonia	175	30
France	10,270	2,400
Belgium	7,105	1,175
United States	4,112	585

EXPORT OF BUTTER.

The export of butter produced in the colony during the year 1886 was 58,047 pounds, valued at $2,862, against 169,261 pounds, valued at $44,460, for 1885. The export is confined almost exclusively to the neighboring colonies. During the autumn of the present year several shipments of New South Wales butter were made to London in the refrigerating chambers of the Orient line of steamers. The shipments are said to have realized very fair returns in a depressed market. The subjoined table shows the quantity and value of the butter produce of the colony exported during the year 1886 with the names of the countries whence exported:

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Country.	Quantity.	Value.
	Pounds.	
Victoria	9,066	$2,005
South Australia	8,908	2,085
Queensland	34,323	8,420
South Sea Islands	1,120	375
New Caledonia	2,754	765
Fiji	159	50
Western Australia	1,498	490
New Guinea	324	100
Total	58,206	14,320

EXPORT OF CHEESE.

The quantity of cheese, the product of the colony, exported during 1886, was 11,386 pounds, valued at $2,085, against 169,261 pounds, valued at $44,640 for 1885. The following table shows the quantity and value of the exports of cheese, the product of the colony, for the year 1886, with the countries whence exported:

Country.	Quantity.	Value.
	Pounds.	
Victoria	1,414	$245
South Australia	130	25
New Zealand	150	25
Queensland	3,253	775
New Caledonia	5,975	900
Western Australia	624	95
Total	11,386	2,085

Much pressure was brought recently upon the New South Wales Government to levy a tax of *2d.* (4 cents) per pound upon all butter and cheese imported into the colony in the hope that it would stimulate the industry of dairy-farming, and the Government finally consented to levy the tax. This course, however, is likely to bring about a directly opposite result from what was intended, for long before the duty was imposed the exports of New South Wales butter were frequently in excess of the imports. I am much indebted to Mr. James Harold, agricultural reporter of the Town and Country Journal, for valuable aid in the preparation of this report.

G. W. GRIFFIN,
Consul.

UNITED STATES CONSULATE.
Sydney, New South Wales.

RELATIONS BETWEEN HOLLAND AND HER COLONIES.

REPORT OF CONSUL ECKSTEIN, OF AMSTERDAM.

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In these days, when so much universal attention is attracted by the proceedings of several European countries having for their object the acquisition of foreign territory in distant parts for purposes of colonization, commerce, etc., a few general remarks touching the value and importance of the Dutch colonies of the present to the mother country, and of the necessity and desirability of their retention, etc., may not be out of place.

I would at once begin by remarking that the popular sentiment of the country still holds strongly to the opinion that the colonies are indispensable to the importance of the Kingdom of the Netherlands, and that the country, politically, commercially, industrially, and otherwise, would soon dwindle into comparative insignificance if deprived of its foreign possessions.

At the same time it is equally true that complaints are not infrequently heard of an insufficient amount of general knowledge existing among the public at large respecting matters and things appertaining to the East and West India colonies, and that there exists more or less indifference as to their future fate on the part of those not having some immediate or material interest to subserve.

On the other hand, it is also asserted that, compared with other nations, not even excepting the English, the Dutch manifest the most interest in their colonial possessions, and study their wants and requirements the most. As one evidence of this it is pointed out to me that the number of all sorts of publications in Holland concerning colonial affairs of every description is certainly a remarkable fact, especially when taking into consideration the limited population of the mother country.

The relations between this country and its colonies have undergone various important changes within the last half of this century. Whilst under the former law, which provided for the collection of certain differential duties (*differentieele rechten*) in favor of the Netherlands, almost all Dutch India products were brought to and disposed of in Dutch markets, and nearly all supplies for the colonies went there via Holland, its abrogation, in 1874, brought about a great alteration in this respect.

Other countries, especially England, now share in the trade unrestrictedly, and receive on consignments a considerable proportion of colonial staple products, particularly such as sugar, tea, cinchona, etc.

Whilst the bulk of that business still remains in the hands of merchants and capitalists in Holland, it is not so much through any particular advantages they enjoy as it is owing to individual exertions to retain the same. Under these circumstances it is, perhaps, not surprising that there are now found many influential parties in this country who are favoring, and even active, in bringing about the re-enactment of some law which will again confer some special advantage upon producers, exporters, and others in Holland who may at any time be or become interested in the India trade.

Again, during the past thirty years a tendency has been observable, and to a great extent realized, of bringing about a more harmonious agreement between certain formerly existing objectionable institutions in the colonies and modern constitutional laws. In this connection may be mentioned the abolishment of oppressive and compulsory labor on Government account or in connection with work on its plantations and otherwise, and in relaxing the severity formerly prevailing; for instance, by the improvements introduced into the public instruction, thereby rendering it more accessible to the natives; by the abolishment of corporal punishment, as well as by bettering the administration of justice, whereby the general situation of the native population has been greatly promoted during the past quarter of this century.

So, also, in the field of colonial finances has the general situation become ameliorated by the passage of the law called the *comptabiliteits-wet*, a law which provides for or compels the keeping of regular books of account in every business, and for other purposes, as it infused increased security and tended to enliven the interest taken in colonial concerns or enterprises. By this law the colonial budget is discussed and fixed annually by the States-General in the Netherlands, while formerly the financial management of the colonies was the exclusive prerogative and task of the Government, without any interference of the Parliament. In 1871 an act was passed which provides for the obtaining of grants, concessions, or leases by certain parties for lands to be brought under cultivation and intended for the production of diverse products.

Large amounts of capital have, in consequence thereof, gradually been invested for such purposes, especially in Java and Sumatra. This had the effect of resulting in a great boon to the natives, as it affords them opportunities to increase their earnings by all sorts of labor. Through this great amount of Dutch capital invested in Indian undertakings the bonds between the mother country and her colonies have naturally been greatly strengthened. Whether fair or satisfactory returns are obtained from the large amounts of capital thus invested can not be said with any degree of certainty, as many of the estates are in the hands of private individuals; but it is the general opinion that, on an average, fair profits are realized.

It is true that heavy losses were incurred during the sugar crisis of 1884, but these have since been gradually made up for. This has not been, and is not an easy matter to accomplish; but, nevertheless, it is now represented that colonial sugar can hold its own against the beet-root product. The products, it is said, are no longer so great as formerly, but still they are regarded to be sufficient to make investments in sugar production fairly remunerative.

Private industries of various descriptions in India are constantly being augmented, and the capital required to work them is continually increasing.

As another noteworthy factor in connection with colonial affairs, my attention is directed to the matter of the great number of Netherlanders holding

good and paying positions in the civil service and otherwise in the Indies. There is said to be hardly a family in Holland which has not one or more relatives there.

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To the picture as above drawn there is also a dark side, produced by various agencies and consisting of different unfavorable situations, which I am not prepared or in position to describe fully or comprehensively at this time. I would allude only to the war in Atcheen, which, since its commencement in 1873, has been a constant drain on the national treasury, and its protraction still demands great financial sacrifices. The great falling off in the yearly yield of the Java coffee crops has also much to do with the state of the country's finances, or with having changed the annual surplus in the budgets of former years into considerable deficits during more recent years. The last budget formed an exception, showing a balance on the side of the revenue, but this was the result of certain higher taxes recently levied.

Of the colony of Surinam it is remarked that it had to struggle over many difficulties for a long period after the abolition of slavery there. The condition of things now prevailing is far from being rose-colored, but there are just traces of improvement discernible.

It is often complained that certain capitalists, and men of enterprise in Holland allow their attention to be too exclusively absorbed by colonial matters to the exclusion of taking sufficient notice of the opportunities which are so often offered by other countries. Unfavorable comments on this score do not appear to me to be justified, and, at all events, it is now generally admitted to be observed that latterly many are bestirring themselves and taking great interest in affairs commercial, agricultural, mining, etc., in South Africa, particularly in the Transvaal, in British Borneo, in the Argentine Republic; in Brazil, for the direct importation of coffee, etc. Besides, the fact that Holland is carrying on an ever-increasing trade with all the adjacent countries in Europe, should not be overlooked.

The people of the Netherlands still regard the undisturbed possession of their colonies as essentially necessary for the material prosperity and political importance of the mother country. Any sacrifice ever required to be made in order to prevent their being lost or passing into the hands of any other European power will, in my humble judgment, be made by the Dutch people, quite as readily as it would be on account of their own country's independence or national autonomy, and any hostile movement, from any quarter, against the colonies would be as heroically confronted as one directed against the mother country itself. It, however, remains for me to tone down, to qualify the above concluding statements by observing that, unfortunately, Holland's military establishments and means of defense are unequal — disproportioned — to the so very strong national feeling of its people, their loyalty and patriotism.

As partly illustrating why such great importance is attached by the Dutch people to remain in possession of their colonies, and as in exemplification of the largeness of the subject above treated, I subjoin hereto a few tabular

statements showing the value of the imports into and the exports from the East Indian colonies during the years 1876 to 1886, inclusive, as follows:

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Imports.

Years.	On Government account.			On account of private corporations and firms, etc.			Grand total.
	Merchandise.	Specie.	Total.	Merchandise.	Specie.	Total.	
	Florins.	*Florins.*	*Florins.*	*Florins.*	*Florins.*	*Florins.*	*Florins.*
1876.....	4,403,928	715,000	5,118,928	109,177,424	7,215,338	116,392,762	121,511,690
1877.....	9,671,934	17,966,000	27,637,934	112,695,304	13,351,158	126,066,462	153,704,416
1878.....	12,279,565	10,000,000	22,579,565	103,391,069	14,478,725	117,869,794	140,449,359
1879.....	8,640,039	6,500,000	15,140,039	128,166,654	11,344,920	139,511,574	154,651,413
1880.....	12,514,860	3,425,000	15,939,860	145,298,319	12,175,741	157,474,060	173,413,920
1881.....	8,260,764	250,000	8,510,764	139,848,716	10,300,839	150,149,555	158,660,319
1882.....	8,564,795	1,699,500	10,264,475	141,677,075	11,020,529	152,697,604	162,962,079
1883.....	8,001,585	420,000	8,421,585	130,492,770	6,908,530	137,401,300	145,822,885
1884.....	11,315,163	.....	11,315,163	137,964,066	12,739,708	150,703,744	162,018,937
1885.....	4,215,579	920,000	5,135,579	119,153,116	14,579,088	133,732,204	138,867,785
1886.....	3,804,593	.....	3,804,593	112,882,718	10,049,116	122,931,834	126,736,427

Exports.

Years.	On Government account.			On account of private corporations and firms, etc.			Grand total.
	Merchandise.	Specie.	Total.	Merchandise.	Specie.	Total.	
	Florins.	*Florins.*	*Florins.*	*Florins.*	*Florins.*	*Florins.*	*Florins.*
1876.....	51,168,108	.....	51,168,108	154,229,384	8,122,276	162,351,660	213,519,768
1877.....	57,116,672	.....	57,116,672	161,863,449	1,529,215	163,392,664	220,509,336
1878.....	38,290,204	.....	38,290,204	134,200,112	7,477,305	141,677,417	179,967,621
1879.....	37,382,782	.....	37,382,782	134,491,534	3,869,950	138,361,484	175,744,266
1880.....	37,177,478	.....	37,177,478	133,893,340	3,579,039	137,472,379	174,649,857
1881.....	32,180,804	.....	32,180,804	143,690,545	1,254,411	144,944,956	177,125,760
1882.....	29,811,785	.....	29,811,785	166,974,074	3,074,968	170,049,042	199,860,827
1883.....	50,721,409	.....	50,721,409	148,080,129	799,973	148,840,092	199,561,501
1884.....	34,383,321	.....	34,383,321	154,247,866	1,084,610	155,332,476	189,715,797
1885.....	16,379,870	.....	16,379,870	168,749,349	2,942,469	171,691,818	188,071,688
1886.....	25,185,390	.....	25,185,390	167,733,412	2,964,145	170,697,557	195,882,947

NOTE.—The value of the imported and exported merchandise as standard of taxation is fixed according to the prices which each three months are determined by the director of finances, after having advised with the chamber of commerce of Batavia, excepting that the value of all kinds of merchandise imported by the Government from Europe is put down at the prices at which they are purchased and paid for by the Government.

The foregoing tabular statements are copied from a very recent publication emanating from the statistical institution of the Association for Statistics of the Netherlands, established at Amsterdam.

D. ECKSTEIN,
Consul.

UNITED STATES CONSULATE,
Amsterdam, February 28, 1889.

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NOTES.

CORRECTIONS. — Consul-General Jussen, of Vienna, makes the following corrections in his report on "Raw Materials Admitted Free of Duty into Austria-Hungary," dated February 2, 1889, and published in CONSULAR REPORTS No. 102:

1. To the free list should be added wool, washed, combed, colored, bleached, ground, or as waste.
2. In the twenty-eighth line the words "plate glass" should read "waste glass."

HEMP AND HOGS' LARD IN SPAIN. — Consul Ingraham, under date of March 14, 1889, writes from Cadiz as follows:

Hemp, linen, jutes, and like articles are not subject to being opened for ventilation, provided that the proper customs and health authorities are satisfied that the merchandise was prepared at the manufactories for industrial and mercantile purposes, as well as hogs' lard, if the latter bears a certificate of origin from the place of exportation.

NEW PORTS IN NEW PROVIDENCE. — Under date of February 23, 1889, Consul McLain, of Nassau, reports that by order of the Governor in council the following places have been made ports of entry of this colony between April 20 and August 20, 1889, viz: Arthur's Town and Port Howe, island of San Salvador; Tarpum Bay and Gregory Town, island of Eleuthera; and Marsh Harbor, island of Abaco. This is a temporary arrangement for the convenience of fruit vessels which may desire to clear for United States ports during the pine-apple season of 1889.

WEST INDIES-VENEZUELAN CABLE CONNECTION. — Under date of February 15, 1889, Consul Reimer, of Santiago de Cuba, says:

Under date of February 1 I received two days ago a communication from J. Frayssinier, esq., the manager of the new French cable between Hayti (St. Nicholas Mole), Santo Domingo (Puerto Plata and San Domingo City), Curacao, and Venezuela (Caracas), stating that under Spanish royal decree of the 27th ultimo this cable is open to public and international service. This ends the long controversy between the French and English companies and will be an immense advantage to the commercial world.

The line from St. Nicholas Mole to Port-au-Prince, Hayti, will be completed as soon as the present difficulties and revolutions there are settled.

EXTENSION OF RAILWAY LINES IN CHINA. — Consul Smithers, of Tien-Tsin, reports, under date of December 31, 1888, that the Imperial Government has recently sanctioned the extension of the Tien-Tsin and Tongshan Railway to Tungchow, and a preliminary survey of the new line has already been made, preparatory to the commencement of work early next spring. It is understood that the road will be constructed on the north bank of the Pei-Ho, crossing the river above Tien-Tsin, and will pass through the most populous districts of North China. When completed it will be possible to reach Peking from Tien-Tsin in about three hours, whereas it now requires as many days. The opposition of the conservatives having at last been overcome, China may now be said to have fairly entered upon a career of railway construction.

RAISIN CROP OF DENIA.—Consul Arquimbo, of Denia, Spain, under date of January 19, 1889, reports as follows:

Early in the past year the prospects were for a very large crop of raisins, the general opinion then being that it would amount to 900,000 quintals, or 3,600,000 boxes of 28 pounds each. But in the month of September very heavy rains occurred, and, as the fruit was in process of drying, a very large amount was destroyed and the crop resulted in only 510,000 quintals, of which 220,000, or 880,000 boxes of 28 pounds each, have been shipped to the United States, at a total value of $990,000; and to England and north of Europe 270,000 quintals, or 1,080,000 boxes, at a value of $1,215,000. There still remains in the hands of merchants and farmers some 20,000 quintals, which, very likely, will be exported to the United States.

LABOR CONFERENCE IN SWITZERLAND.—Consul-General Winchester, of Berne, Switzerland, reports to the Department of State, under date of April 3, 1889, that the Swiss Federal Council has issued an invitation to the European manufacturing states to send representatives to a conference in the interest of the working classes, to be held at Berne next September. The subjects to be considered are as follows: Prohibition of Sunday work; the fixing of a minimum age for the employment of children in factories, and a limitation of their hours of work; prohibition of the employment of minors and women in peculiarly unhealthy and dangerous industries, limitation of night work, and the adoption of a settled plan for the attainment of these objects.

THE WORLD'S PRODUCT OF WINE.—Consul Mason, of Marseilles, under date of February 27, 1889, sends the following:

The following table shows the results of the vintage of 1888 in all countries (except Germany, which is not reported) where the product of wine is sufficiently important to be taken into account. The aggregates are given in hectoliters of 26.42 gallons:

Countries.	Hectoliters.	Countries.	Hectoliters.
France	30,102,000	Turkey and Cyprus	2,600,000
Algeria	2,728,273	Greece	1,760,000
Italy	30,217,000	Switzerland	1,100,000
Spain	23,000,000	Roumania	700,000
Portugal	5,000,000	Servia	2,000,000
Austria	3,500,000	California	750,000
Hungary	7,000,000		
Russia	3,500,000	Total	113,957,273

Or 3,010,751,152 gallons.

ENORMOUS LOSS OF STOCK IN NEW SOUTH WALES.—Commercial Agent Dawson, of Newcastle, N. S. W., under date of February 8, 1889, sends the following extract from the Sydney Daily Telegraph in regard to the terrible results of the drought among the stock of the colony:

The enormous losses suffered by the pastoralists of this colony last year in consequence of the protracted drought are demonstrated by the stock returns for 1888. These were due from the various stock inspectors yesterday morning only, and their arrangement, together with those for previous years, in the form of a tabulated statement, involved a good deal of work on the part of the officers of the stock branch of the mines department, but with commendable dispatch it was completed in the afternoon and then submitted to the minister for mines (Mr. J. M. Chanter), to whose courtesy we are indebted for the following interesting information on the subject. The returns received by the inspectors from the different districts include 382,749 horses, 1,554,750 cattle, and 45,109,291 sheep; but besides these it is estimated by them that the stock of which returns have not yet come to hand numbers 29,211 horses, 49,335 cattle, and 1,060,277 sheep. Thus the grand totals (returned and estimated) are 401,960 horses, 1,601,085 cattle, and 46,169,568 sheep. The figures for 1887 were: Horses, 390,609; cattle, 1,575,487; sheep, 46,365,152. Last year, therefore, the number of horses increased 11,351 and the number of cattle 25,598, but the number of sheep decreased 795,584. A much larger increase had been anticipated as regards both horses and cattle, and the number of sheep is at the present time at least 5,000,000 less than it would probably have been under favorable circumstances. In 1887 horses increased 28,946; cattle, 207,643; and sheep 7,795,848.

DUTY ON LARD ENTERING FRANCE. — Under date of April 4, 1889, Consul Du Fais, of Havre, reports that according to a circular issued January 12 by the director-general of customs, from May 1 next a duty of 6 francs per 100 kilograms gross, or 60 cents per 100 pounds net, will be levied on lard mixed with cotton-seed oil, irrespective of the percentage of such admixture. All lard imported from the United States will be subject to Government examination.

[Circular. — Translation.]

MR. COMPTROLLER: As you have been informed by this office under date of the 24th of November last, it had been provisionally decided that lard containing cotton oil in a proportion not exceeding 25 per cent. would be taxed as pure oil at the rate of 25 per cent. of the total weight. After a second examination by the department of trade and finances, it has been found that this toleration ought not to be maintained, and that it appertained in accordance with the regulations concerning mixed produce as mentioned in the preliminary schedule of the tariff to collect on lard containing cotton oil in any proportion the same duty on its total weight as for pure or other oil, viz, 6 francs per 100 kilograms independently of the overtax of bonded warehouse or origin, if necessary in order not to fetter the contracts entered upon, the minister consented that the adoption of this measure should not be applied before the 1st; that is to say, that it would not affect lard declared for consumption previous to that date. I beg the collectors to acquaint the service and the trade with these regulations.

G. PALLANI.

ARTICLES FREE OF DUTY IN PERU. — Under date of January 7, 1889, Consul Brent, of Callao, sends the following list of articles which will be admitted free of duty into the ports of Peru after the 1st of March, 1889, by virtue of a law of Congress promulgated by the President:

Animals for breeding purposes.
Agricultural machinery.
Anchors.
Boat-hooks.
Brushes for tarring, etc.
Bottles (empty).
Buoys.
Bark for tanneries.
Belts for machinery.
Bricks (fire, dried).
Books (printed).
Boilers of copper under 46 kilograms weight.
Compasses.
Chains.
Canes for building.
Coal and charcoal.
Cement (Roman).
Copper in bars and plates.
Crucibles.
Chemicals for tanneries.
Dynamite and other explosives with fuses.
Furnaces (portable).
Furnaces for mines.
Fish in national vessels.
Fire and hand engines.
Gold and silver in bars or dust.
Globes (geographical).
Hops.
Implements for agriculture and mining.
Lead in bars.
Lumber of all kinds (not manufactured).
Machinery for agriculture and mining.
Machinery for foundries and carpenter work.
Machines, sewing (except those in ornamental cases).
Oakum.
Oars.
Plants.
Pig-iron.
Plows.
Pitch.
Powder (gun).
Printing-presses.
Quicksilver.
Railways (portable).
Rigging and rope of all kinds; wire rope.
Retorts.
Rails.
Rope yarn.
Railway plant and rolling-stock.
Steel in bars and plates.
Speaking-trumpets.
Spikes.
Ships' logs.
Shooks.
Sleepers.
Ships' masts.
Ships' cranes.
Seeds of all kinds.
Ships' articles (excepting canvas).
Tar.
Tin in bars and plates.
Tarpaulins.
Wire (except copper).
Zinc.
Gold and silver jewelry, 3 per cent. ad valorem.
Wheat, 1 cent per kilogram.
Flour, 3½ cents per kilogram.
Rice (cleaned), 2½ cents per kilogram.
Rice (in hull), 1½ cents per kilogram.

BELGIAN WOOLEN TRADE. — Consul Preston, of Verviers and Liége, transmits the following table, showing the exports and imports of woolen goods between Belgium and foreign countries for the past three years:

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Description.	Imports.			Exports.		
	1888.	1887.	1886.	1888.	1887.	1886.
Woolen thread.	*Kilograms.*	*Kilograms.*	*Kilograms.*	*Kilograms.*	*Kilograms.*	*Kilograms.*
December	58,270	68,380	67,420	1,057,750	1,365,150	1,638,210
Whole year	880,760	851,780	852,950	12,010,280	11,581,150	11,224,960
Woolen tissues, cloths, cassimeres, and similars.	*Francs.*	*Francs.*	*Francs.*			
December	143,900	145,380	214,570	202,740	174,450	133,800
Whole year	2,103,040	2,855,660	3,365,620	1,450,930	1,434,260	1,370,400
Coatings, duffels, and other heavy tissues.						
December	83,540	129,400	91,670	33,080	39,680	29,610
Whole year	1,578,930	1,686,390	1,748,370	272,400	225,120	255,420
Light tissues.						
December	854,060	1,042,900	886,050	39,190	49,180	32,140
Whole year	15,704,000	15,579,380	15,022,760	587,400	502,570	464,700

CHANGES IN THE BRAZILIAN TARIFF. — Under date of January 30, 1889, Consul-General Armstrong, of Rio de Janeiro, reports that provisions have been made for the execution of the law relating to a sliding scale of duties on foreign merchandise competing with that manufactured in Brazil. The Brazilian Government has issued an order in which it declares that from and after March 1, 1889, the articles included in the subjoined list will pay additional duties at the following rates, to be calculated on the duties now paid and to be in addition thereto: When sterling exchange is between 22½*d.* and 25*d.* per milreis, 6 per cent. additional duty; when such exchange is between 25*d.* and 27*d.*, 15 per cent.; and when above 27½*d.*, 20 per cent.

For the guidance of custom-house authorities, the minister of finance will duly apprise them of the rate which has been adopted by the Government, as well as any changes that are made therein, when the fluctuations in exchange render it necessary to make them.

The articles subject to additional duties are as follows:

Leather (not including buckskin and kid).
Harness.
Boots and shoes.
Trunks, boxes, valises, etc.
Saddles.
Glue.
Preserved meats.
Extracts of meat.
Preserved tongue.
Preserved fish.
Preserved fruits.
Preserved tomatoes.
Sperm and stearine.
Candles.
Tobacco.
Perfumery
Sideboards.
Benches and stools.
Cradles (for children).
Bidets.
Billiard-tables.
Chairs.
Beds.
Chests of drawers.
Side tables.
Frames for bed curtains.
Lasts.
Praying-stools.
Wardrobes.
Dining-room safes.
Tables.
Desks.
Privy seats.
Toilet stands.
Sofas.
Unclassified cabinet goods.
Cotton thread, for weaving or for lamp and candle wicks.
Check drills.
Blankets.
Ducks and drills.
Stockings (not classified).

Brown drills.
Unbleached domestic.
Plain checks.
Ready-made clothing, not classified.
Bags, not classified.
Woolen thread.
Plain or ornamental felt.
Baize.
Flannels.
Shawls, mantles, wraps, and cloaks.
Felt hats.
Broadcloth, cassimeres, and casinets.
Wrapping-paper.
Earthen-ware.
Railroad cars.
Wheelbarrows and hand-carts.
Wagon, cart, and carriage bodies.
Wheeled vehicles of every description.
Chocolate.
Confectioneries.
Lay figures.

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Under date of February 26, 1889, Consul-General Armstrong supplements the above Brazilian tariff changes as follows: Merchandise subject to the custom-house sliding scale (mentioned above) will be subject on and after March 1, 1889, until further orders, to an additional duty of 20 per cent., which is the highest rate in the scale, exchange now being quoted at from 27¾*d.* to 28⅛*d.* per milreis, which is from 0¾*d.* to 1⅛*d.* above par.

TEHUANTEPEC AND SALINA CRUZ.—Consular Agent Langner transmits the following:

Statement showing the imports into Salina Cruz, Mexico, from the United States for the year 1888.

Articles.	Packages.	Value.	Articles.	Packages.	Value.
Hardware	547	$6,690	Glass-ware	13	$310
Machinery	73	3,425	Tallow	60	755
Stationery and paper	26	553	Coal-oil	120	1,790
Liquors, wines, and beer	334	6,519	Bees-wax	12	1,200
Provisions	364	2,966	Lumber	364	728
Drugs	43	2,690	Larch and accessories	12	907
Scientific instruments	11	580	Sundries	145	3,163
Jute goods	19	1,836	Total	2,158	36,762
Cotton goods	15	3,150			

Statement showing the declared value of exports from the consular district of Salina Cruz to the United States during the four quarters of the year ended December 31, 1888.

Articles.	Quarter ending—				Total for the year.
	March 31.	June 30.	September 30.	December 31.	
Dry cattle hides	$7,343.21	$6,528.01	$3,016.47	$4,211.39	$21,099.08
Calf-skins	.....	420.04	198.20	181.01	799.25
Deer-skins	190.29	140.91	366.21	362.69	1,060.10
India-rubber	621.72	306.21	283.37	207.20	1,418.50
Coffee	4,134.75	1,379.00	.....	2,400.00	7,913.75
Bristles	32.05	55.65	36.06	24.54	148.30
Mahogany wood	1,266.00	.....	.....	.....	1,266.00
Samples of wood	.....	.....	.....	5.46	5.46
Telegraph supplies	.....	.....	25.00	.....	25.00
Total	13,588.02	8,829.82	3,925.31	7,392.29	33,735.44

Statement showing the exports from Tehuantepec and Salina Cruz, Mexico, for the year ending December 31, 1888.

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Description.	Tehuantepec.		Salina Cruz.	
	Quantity.	Value, including cost and charges.	Quantity.	Value.
	Kilograms.		*Packages.*	
Coffee	6,791	$2,105.21	300	$7,913.75
Dry cattle hides	96,430	25,071.80	7,406	21,099.08
Deer-skins	2,754	1,790.10	90	1,060.10
India-rubber	1,642	1,477.80	9	1,418.90
Fustic	2,824,560	21,596.48	.....	.....
Lima wood	828,050	13,248.80	.....	.....
Bristles	429	214.50	5	148.30
Tobacco	1,440	648.00	.....	.....
Gum	2,500	325.00	.....	.....
Indian corn	33,641	1,457.78	.....	.....
Saddles	189	378.00	.....	.....
Horn	570	5.70	.....	.....
Cigars	268	804.00	.....	.....
Indigo	2,000	4,000.00	.....	.....
Specie	.....	13,032.00	.....	.....
Mahogany wood	.....	1,266.00	124	1,266.00
Calf-skins	.....	.....	27	799.25
Samples of wood	.....	.....	1	5.46
Telegraph supplies	.....	.....	1	25.00
Total	.....	$87,422.27	7,893	33,735.44

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES

No. 104.—APRIL, 1889.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1889.

Statement showing the exports from Tehuantepec and Salina Cruz, Mexico, for the year ending December 31, 1888.

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Description.	Tehuantepec.		Salina Cruz.	
	Quantity.	Value, including cost and charges.	Quantity.	Value.
	Kilograms.		*Packages.*	
Coffee	6,791	$2,105.21	300	$7,913.75
Dry cattle hides	96,430	25,071.80	7,406	21,099.08
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Indigo	2,000	4,000.00	.....	.....
Specie	.....	13,032.00	.....	.....
Mahogany wood	.....	1,266.00	124	1,266.00
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Samples of wood	.....	.....	1	5.46
Telegraph supplies	.....	.....	1	25.00
Total	.....	87,421.27	7,893	33,735.44

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CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 104.—APRIL, 1889.

AMERICAN MANUFACTURES IN HOLLAND.

REPORT BY CONSUL ECKSTEIN, OF AMSTERDAM.

It would be gratifying to me to be able to give information as to the actual total quantity and value of the various productions of American manufacture imported into this consular district, or into Holland, during the past year, but I find it impossible to do this, as there exists no control or record in any one official or private quarter from which any such information can be adduced.

Under the prevailing circumstances it would be only a hap-hazard statement were I to say that the imports of, and trade in, articles the manufacture of the United States increased or decreased in 1888 as compared to what they amounted to in 1887, or in former years.

As it is, it can only be reported that a large number of articles, "from a needle to an anchor," or, as in reality, "from shoe-pegs to elevators," find their way into the markets of this country. Few of them, however, are imported extensively, and whilst the trade in some from time to time diminishes or is entirely dropped, it increases in others, and new articles are constantly being introduced with varying success.

A larger, more regular, and permanent trade is, and always will remain to be, seriously handicapped as long as certain conditions continue unchanged, certain obstacles unremoved.

What they are I have taken occasion to describe, at least in part, in several of my former reports upon this subject, but would now again direct the attention of interested manufacturers and exporters to the following, viz:

First, That they should or must, if they can, devise the means which may curtail or prevent the imitation of so many of the products of their industry by European—principally German and English—manufacturers, and bringing these imitated articles into the markets of this country, and, I suppose, into many others, where they are offered and sold as of American origin.

This, as I understand, is done in all practicable instances where, after a successful introduction of an article, a considerable lasting demand appears assured.

Second, Our manufacturers and exporters should not, without reasonably good and sufficient cause, so quickly and often advance the prices of any of their goods simply because they observe at any time that the demand for them here or elsewhere abroad is increasing and repeated orders for them are received. This, as is represented and complained of to me, is the practice of our manufacturers and exporters to a very considerable and injurious extent, as in many cases it leads to a speedy severance of recently-formed trade connections, which, otherwise, might have become permanent, and it also operates in favor of their European competitors.

Third, As another great drawback to an extension of the trade in American goods is mentioned the fact that our manufacturers are hardly ever prepared, ready, or willing to make any alteration, no matter how trifling, in any article so as to approach nearer the taste of the Dutch customer and consumer, or be of more real or imaginary utility. The German and English manufacturers do this in most all cases, or whenever at all practicable.

The foregoing-stated are a few of the drawbacks and obstacles which, together with others pointed out by me in former reports, stand in the way of a further extension, a larger and lasting trade. To remove or overcome them is and remains the task of our exporters, manufacturers, and merchants who desire or intend to find markets in this country for the products of their industries, or a greater share in the general trade than they now have.

IMPORTS OF AMERICAN MANUFACTURES.

Machinery.—From Messrs. Frederick Stieltzes & Co., of this city, agents for some years past for several American firms, I received very recently information to the effect that for the sale of certain American machinery the present is a propitious time. These parties observe that Worthington steam-pumps, invented and manufactured by Henry R. Worthington, of New York, have been introduced in this country, and are in considerable numbers now in use in water-works, sugar factories, by the royal marine, and for boiler feeding in several manufacturing establishments, and they are everywhere giving perfect satisfaction. Hydraulic elevators, invented and made by Otis Bros., of New York, have been imported, are erected, and are in use in several hospitals at Rotterdam and Arnheim, and in a hotel at Amsterdam.

The superiority of American laundry machinery goes undisputed. A number of steam-laundries have been supplied with washers, steam-mangles, and with ironing-machines for ironing collars and cuffs, all of which are, more or less, novelties in Holland.

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About two years the ago the Gardner governor, produced by the Gardner Governor Company, Illinois, was first brought here, and, notwithstanding the very strongest competition from German manufacturers, soon found a ready sale, which is continuous.

School furniture. — The Messrs. Stieltzes & Co. have also brought about the importation, and, in varying quantities, the sale in the markets of this country of such American manufactures as school-desks, chairs for theaters and churches, Sturtevant blowers, asbestos goods, valvoline, machine-oils, and a variety of other articles.

Agricultural machinery. — Agricultural machinery and implements in considerable variety found, some years ago, quite a market in Holland, and hay and manure forks were largely imported. During the last few years the demand and trade declined so greatly that now, as I am informed, there remains so little of it as hardly to deserve to be noted. This has been brought about by a diversity of untoward circumstances, among which are stated to be: The very light construction of the articles, which renders them illy-adapted to the peculiar nature of a great deal of the soil of this country; the difficulties often experienced in machinery getting out of order or breaking down, and subsequent delays and expense resulting in effecting repairs. The main hinderance, however, or one of them at least, to the demand and business being better sustained arose and exists on account of the very much higher prices at which the American products of the industry here under consideration were, and are, generally held as compared to those at which similar articles of domestic manufacture or English and German make can be procured.

Sewing-machines. — Through the persevering efforts and good management of the agents here for the sale of American sewing-machines, joined to the excellent qualities and generally high reputation of the machines, a steady and large trade has been for some years past sustained uninterruptedly, and the former sharp competition, especially from Germany, has, as I learn, weakened very much latterly. Still the trade last year did not come up to what it was in 1887, fewer machines having been sold in 1888. The reason for this, as given me, but not satisfactorily explained, is to be found in a diminished purchasing capacity of certain classes in the community.

Pianos. — The superior properties of the best makes of American pianos are well known and acknowledged by the dealers and others in this country, and it is only owing to the high prices they command that they are not invested in more extensively; but few people here can afford such a luxury.

Organs. — Parlor organs, of sundry styles and all sizes, are greatly favored and rather extensively imported and sold. Some hundreds of them find their way into Holland annually, and the trade in them is still increasing. In

many of the towns and villages of certain provinces they are a greatly-liked instrument, and most readily disposed of.

Stoves.—American stoves, of different styles, large and small, are very much liked here, and would, without doubt, find a good market if they were not so dear; but on that account they are imported in only very limited numbers, more to serve as patterns to be imitated here than to be placed on sale.

Canned goods.—The imports of, and transactions in, American canned goods kept up very well so far as various sorts of fruit and fish are concerned, but the large trade in canned beef and lunch-tongues of a few years ago has become reduced to a minimum.

Watches and clocks.—The superior qualities of the watches of American make are fully recognized and appreciated in Holland, and nothing prevents the development of a large trade in them but the high price demanded for them. The cheaper, and no doubt inferior, Swiss watches sell more extensively. In clocks the business, which a few years ago was quite considerable, has fallen off again in consequence, mainly, of the German competition.

In concluding, I would state that more or less of a market continues to exist in this country for the sale of such American productions as unimportant, low-priced articles required for household use, children's toys of different sorts, and proprietary and patent medicines, etc.

D. ECKSTEIN,

UNITED STATES CONSULATE, *Consul.*

Amsterdam, February 25, 1889.

AMERICAN VESSELS IN VENEZUELAN WATERS.

REPORT BY CONSUL PLUMACHER, OF MARACAIBO.

The return of arrivals of vessels at Maricaibo during the year 1888, as compared with 1887, shows scarcely any change. Fifty arrivals of American vessels are registered in 1888, against fifty-one for the previous year. Of all other nationalities there has been a slight falling off, except in Venezuelan coasters, the number of whose arrivals during the past year was two hundred and eighty-three, as compared with two hundred and thirty-nine for 1887.

It is to be regretted that the arrival of an American sailing vessel at this port is not of more frequent occurrence. Freights are secure and profitable, and as the business of exporting dividivi and wood of various classes must be greatly increased within the next year or two, and as the United States is steadily augmenting the consumption of these articles, a total number of arrivals of American sailing vessels of only eight is not a satisfactory showing. There is one drawback, however, at this port, which, no doubt, deters many ship-owners from accepting charters for Maracaibo, viz, the exceedingly unsatisfactory and defective system of towage over the bar.

The contractor, who receives very generous terms from the Government, is under obligation to give constant and efficient towage service, and is even bound to have two tugs constantly on hand. There has never been more

than one, and the National Government at times orders this steamer to be detached for public service, which necessitates a delay at the bar which is most prejudicial for vessels already loaded and dispatched. Recently various sailing craft bound for foreign ports, among them two American schooners, were detained for weeks owing to the absence of this tug.

Interior navigation of the lake and its rivers remains virtually unchanged. No new steamers have been added during the past year, and the low water in the upper rivers during several months past has diminished the usual traffic of the light-draught boats.

I hope that the next twelve months may show a decided increase of American vessels trading in these waters.

Arrival of vessels at Maricaibo during the year ending December 31, 1888.

Flag.	Steamers.	Barks.	Brigs.	Schooners.	Total.
American	42	.....	.....	8	50
British	.....	5	1	3	9
French	.....	2	.....	.....	2
German	.....	2	11	.....	13
Norwegian	.....	1	3	.....	4
Danish	.....	1	12	.....	13
Italian	.....	2	3	.....	5
Dutch	.....	.....	5	15	20
Dominican	.....	.....	.....	1	1
Venezuelan	.....	.....	.....	256	256
Total	42	13	35	283	373

E. H. PLUMACHER,
Consul.

UNITED STATES CONSULATE,
Maracaibo, February 23, 1889.

WOOL WASTE AND BROKEN TOPS.

REPORT BY CONSUL GRINNELL, OF BRADFORD.

In November last it became known (by experimental small shipments, etc.) that broken tops, laps, rovings, and slubbings, with 5 to 15 per cent. of genuine waste scattered in, would be admitted by the United States customs at 10 cents per pound duty, and the quantity declared at this consulate alone rose as follows: November, 1887, 69,648 pounds; November, 1888, 334,186 pounds; increase, 1888, 264,538 pounds. The shipments hence since have been, compared with the corresponding month of the year before, as follows:

Months.	1888-'89.	1887-'88.	Increase.
	Pounds.	*Pounds.*	*Pounds.*
December	407,776	68,995	338,781
January	530,416	54,114	476,302
February	531,198	49,331	481,867

Since the end of October I have devoted a good portion of my time and influence to securing statistics of the worsted, mohair, camel hair, and alpaca spinning, by which an almost mathematical calculation can be reached of the total production of waste from Botany (Australian) wool. It is the product of this, almost wholly, that is shipped to the United States as "wool waste," and these statistics and calculations embrace not only Bradford but the great outlying towns comprising this consular district.

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Upwards of 250 firms, owning 500 mills, work 2,091,293 spindles, producing, per annum, of all sorts 6,535,291 pounds waste, of which one-half is Botany—3,267,645 pounds. Of this latter at least one-half is used up by the larger spinners themselves—say 1,633,823 pounds—while Germany and other countries take, say one-eighth—408,465 pounds—leaving as total supply for shipment to the United States per year 1,225,366 pounds, whereas during the months of December, January, and February last the actual quantity declared at this consulate alone amounted to 1,469,390 pounds.

In addition to this the shipments declared at Liverpool, according to the report kindly procured for me by the consul-general, for the same period, viz, December, January, and February last, were 760,596 pounds, which, added to the above, makes a total of 2,229,986 pounds, thus showing the total shipments to the United States during three months to have been 1,004,620 pounds in excess of the production of genuine Botany waste for the whole year.

The practice of breaking up wool tops for the United States market has become notorious here. I have by me the names of nine firms who have adopted this process, and there are probably others similarly interested. Originally the tops were broken up by hand, but the enormous development of the shipments to the United States has caused, it is stated, machinery to be used for the purpose. The wool-combers, as a rule, will not lend themselves to the practice, but deliver the tops to the waste dealer in their regular form, and the latter either break them or cause them to be broken up. The temptation to "prepare" genuine tops here for entry into the United States as waste at 10 cents per pound is very great, as may be judged when I mention that one of the larger firms in Bradford, of unquestionable reputation, informed me that they had been offered 4 cents per pound profit over their regular price for all the Botany waste they could supply.

Following are the opinions of three experts in the wool trade whom I have interrogated upon the subject:

Messrs. ——— say: "We know, of course, that tops are broken up and shipped to America, but we ourselves buy mainly from spinners and under guaranty. The Liverpool shippers are not particular, and will take anything. Among the Liverpool shippers of waste to the United States are * * * * I know that Messrs. ——— do break up tops for the United States, and I have almost equal reason to believe that Mr. ——— does the same."

Mr. ——— says: "I am a wool stapler. This business of breaking up tops and laps for shipment to America is not only wrong but injurious

to my business. I am determined to help to stop it. Messrs. ———, of ——— and ———, make and break up tops for this purpose. Another spinner informed me yesterday that by making 'proud lap waste' he was able to sell his product at 1½ cents per pound more for America. ('Making proud waste' is Yorkshire for tearing laps off the rollers and selling as waste.) Tops are also made of wool with a little shorter staple or injured in color, etc., expressly to be broken up. Messrs. ——— have the name for breaking up and selling to America. I think as much is done at the Liverpool consulate as at Bradford."

Mr. ——— says: "There is no sort of question as to the breaking up of tops and laps for shipment to America. I know this, and could prove it, but do not care to risk publicity. I should say that 1,200,000 pounds would be all the genuine top and lap waste produced here per annum which could be for sale. This is less than sixty days' shipments — January and February, 1889 — from Bradford and Liverpool — 1,300,000 pounds."

The Department will better observe the extent and magnitude of the practice of "converting" tops into waste for shipment to the United States by the undernoted figures taken from actual production and shipments for three months.

Shipments of Botany waste to the United States for three months, December, 1888, January and February, 1889.

	Pounds.
From Bradford	1,469,390
From Liverpool	760,596
Total	2,229,986
Actual production	306,342
Excess	1,923,644

Calculating on this basis for one year, the shipment will reach 8,919,944 pounds; the genuine salable product being 1,225,366 pounds, leaves an excess (broken tops, laps, etc.) of 7,694,578 pounds.

WILLIAM F. GRINNELL,
Consul.

UNITED STATES CONSULATE,
Bradford, March 19, 1889.

OPPORTUNITIES FOR AMERICAN TRADE IN MALTA.

REPORT BY CONSUL WORTHINGTON, OF MALTA.

I have the honor to herewith submit an annual report of the trade and commerce of the Maltese Islands for the year 1888, preceding the same by a few remarks explanatory of the difficulties attending any attempt to secure complete and reliable statistics of the imports and exports thereof.

It is simply impossible to ascertain from the department of customs the amount, value, or description of goods of American origin that are annually imported into Malta. With the exception of articles liable to import duties the authorities do not require importers to give either values of merchandise

entered at this custom-house or a specific statement of quantities, beyond numbers of packages; nor need exporters present outward manifests of goods shipped from this port. Hence, import and export statistics must necessarily be incomplete in many important respects.

The official trade statistics are annually published at so late a date after the beginning of a year that the consul must either make up his previous year's commercial report from individual mercantile sources, if he wishes to transmit to the Department said report within a reasonable or useful time, or else wait late in the year for the official figures. In points, however, of correctness and fullness but little is gained of value to American exporters by waiting for the published statistics.

I have found it an impossible accomplishment to even get or make an approximately correct enumeration of the articles that come into Malta which were exported from the United States. Malta is a "free port," with a list of duties that brings into the island treasury about £150,000 out of a total revenue of, say £240,000 per annum, and no details are recorded descriptive of the variety of goods imported. And another serious hinderance to obtaining correct statistical information lies in the fact that credit is given only to that port and country from which the bills of lading and manifests show the goods were last shipped. Unnumbered small consignments of goods to firms in this district from United States ports are credited to Liverpool and London and continental ports, because they were transshipped (owing to the absence of direct communication) at those places while en route; hence it happens that, barring petroleum, which arrives in sailing vessels direct from our American ports, every dollar's worth of American goods imported into the Maltese Islands is credited to other countries than our own. Intelligent statistics for commercial instruction are, therefore, not obtainable in Malta. The only way one can get to know—and that but imperfectly—the variety, but not the quantity, of American goods sold in Malta is to haunt the stores and shops, and either by inquiry or observation, or both, draw conclusions. This, of course, is a difficult and unsatisfactory method of arriving at any reliable knowledge of facts, but it enables one to discover that a very considerable percentage of the articles for sale are of American make. Sometimes the store-keeper is himself ignorant of the nationality of his wares, but generally he has got to so appreciate the fact that our exportations are so superior to those of other countries that he will sell English or German made goods, declaring they are American. There is scarcely a well-equipped general goods store in Malta that has not on its shelves a more or less respectable supply of American articles; and I am inclined to think it remarkable that any American goods are found here, when one considers the little effort made to introduce them by our own people. So far as our trade in Malta is concerned, it is through their sheer, unquestionable excellence that our manufactured articles find market here. With such a reputable basis to start on it is perfectly safe to predict a profitable market for our manufactured wares, if prominently introduced and then diligently pushed. There is not the *slightest* doubt about it. Danger lies in delay. German and French (mainly

German) manufacturers are somewhat successfully introducing their wares in this market. They send men here and elsewhere in the Mediterranean to study the habits and wants of the people, and then follow that mode up by the introduction of appropriate goods. By this course the Germans, and also the Austrians, have secured a large and profitable trade in Morocco and Algeria. An Austrian commercial traveler of my acquaintance recently touched at this port, bringing with him half a dozen trunks full of samples. These samples were of great variety, briefly described as "Yankee notions," manufactured in Austria. He followed the American drummer's plan — spread out his goods in a large room in a respectable hotel near the business center of the town, and invited dealers to call and inspect, with the result that within one week's stay he took away orders for upwards of 25,000 francs' worth of goods. He carried nothing for sale, only samples. His firm paid him a salary of $1,500 per annum and all his expenses, allowing him a three months' leave at the end of each grand round, which usually occupied about twenty months. This grand round took in the coast towns of southern France and Spain, the Canary Islands, the coast cities of Morocco, Algeria, the Barbary States, Egypt, Syria, the Greek islands, Sicily, and several of the Mediterranean islands. The visit to Malta above mentioned was his first; its success, however, was such as to cause him to add this island to the list of places to be visited in future circuits. This commercial traveler was a person of good address, affable manners, and spoke the language of every country he visited. He informed me that his was the only way to secure profitable orders, that soliciting trade by correspondence and circulars was throwing money away. In oriental countries like Morocco, Algeria, Tunis, etc., he sold those pretty little cups, saucers, vases, pipe-bowls, cigarette-holders, fancy-handled knives, ink-holders, and a thousand and one other articles that tourists buy in the eastern bazars for genuine oriental work, but in reality manufactured in Europe.

Now, while it is true that the drummer I have spoken of, and others of European nationalities selling by samples, have secured strong (because the first) hold on the trade of these Mediterranean countries, still I have no doubt that American wares of similar designs and varieties, similarly introduced, would compete successfully with the European articles. I base this belief upon what I know of the reputation in which goods of American make are held in those parts of the Mediterranean where trade is the most active and the most likely to be profitable. I am aware that the competition I speak of can not be successfully undertaken until direct communication by ships between United States ports and the Mediterranean is established. And the signs of the times seem to me to point to such direct communication at no far distant date. It does not seem possible that that admirable American enterprise, which has done so much in making us a strong, vigorous, and enlightened leader of nations, will be lacking at the critical moment. The new conditions of things that have come to many of the formerly barbarous countries that border this great sea make it imperative for us, if we propose to secure and maintain our share of the world's commerce, to be preparing

to compete with the manufacturers of Europe for the Mediterranean trade. The one thing lacking ought not to be much longer delayed. Our manufactured goods stand so high in the estimation of both sellers and consumers that purchasers would promptly come to the fore if the importers could find the means of placing the goods on the markets at reasonable competitive prices.

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It is no idle boast to assert the superiority of our wares over those of other countries. The best possible proof of that fact (under the head of tools) was given me in a conversation I lately had with a high official here, under whose administration many public works of the greatest utility have been projected and completed, to which, being fond of details, he has devoted his individual attention and superintendence. We were talking about the new ordinance which he was urging the council of government to adopt, and which, owing to the 76-degree flash test exacted in it, would exclude from the Malta market hereafter much of the American petroleum that comes here;* and expressed his amazement that Americans should imperil their oil trade in the Mediterranean, in the teeth of active Russian competition, by exporting oils of such poor quality as to make such adverse legislation necessary. "For," said he, "in almost everything else your people beat the world — especially in your manufactured goods. And this is so because your exported articles are well and honestly made. Now, in the new water-works, just completed, we tried to use English tools and pumps, but they were so poorly made and cheaply finished that, out of disgust for them, we sent to the United States and got out some first-class implements, thoroughly well made, standing every strain, and which gave perfect satisfaction. The trouble with our English manufacturers is that they make one grade of tools for the home and another grade for the foreign or colonial market, the latter always being inferior, although intended to do the same work. Such discrimination against the colonies brings, perhaps, a larger immediate profit to the exporting manufacturer, but it will ruin his trade in the long run. Making and exporting articles for sale rather than for use will not and should not pay. It is a species of dishonesty deserving more than censure; it is not even 'good business.' Through following this short-sighted course some of our manufacturers are losing their grip on the trade of our own colonies."

I have dwelt at such length on this branch of the subject of the superiority of our goods in order to emphasize the fact that integrity in manufacturing is as essential to success as honesty in dealing.

The superiority and excellence of our wares being admitted, the best way to create a trade in them becomes the only question. The method used by the Austrian drummer I have mentioned can scarcely be improved upon, unless that broader system of establishing agencies, with sample rooms, in the principal commercial centers of the different countries be adopted. Such agencies, under the management of experienced and energetic business men, could not fail to be successful in introducing American goods and building up a profitable trade in them. On this subject one of our consuls has well

* The ordinance has since become a law.

written: "This system of representing one or more societies of manufacturers and merchants involves but little capital to any one of them, while at the same time it materially diminishes the ordinary risks to which such individual ventures, intrusted to the ordinary traveling salesman, who neither knows the language, the people, nor their wants, are subject, and vastly increases the chances of success."

Malta would make a capital point for a principal agency. One important point in any project for marketing American goods in Malta and the adjacent countries must be considered, and that is this, merchants here will not order or purchase goods without seeing them. One responsible dealer in hardware, pumps, and shelf cutlery once told me he would have given an order for certain hardwares to a New York house, although the extra expense of transshipments would have made the transaction one of doubtful profit to him, but he was virtually asked to pay for the goods before he could have received them. He had seen samples, and was satisfied they were superior to similar goods he supplied himself with from England. That merchant is but one of hundreds in his line who would have more than half of their stock-in-trade made up of American wares if direct communication existed.

During a six years' residence in the Maltese islands I have had many opportunities of learning what American-made articles might, with well-directed efforts, be profitably brought into this market, and among them I may enumerate the following:

Very light plows, to supersede old-fashioned wooden ones still in use here.

Hardware, which includes mechanics' tools of lighter sorts, especially those used in carriage making.

Canned goods are not for sale here in sufficient varieties. Succotash and green corn, for instance, could be sold here quite largely.

Chromos, I am certain, could be quite extensively sold here; those of a religious character would be most popular, as the inhabitants are zealous Catholics.

Clocks and watches of American make ought to be in larger supply. Fancy clocks are brought here from France and find ready sale. Watches mostly come from England, and are inferior to similar American watches, though sold at about the same prices.

Flour from America could be made to compete successfully with the Russian and Indian, if it could be delivered here direct.

Furniture mainly comes from England and Italy, and is sold at high prices. I believe the pretty chamber-sets of the light wood kind made in Grand Rapids could be made popular here.

Lamps, of American manufacture, are more often called for than supplied. The illustrations of our lamps in the American trade journals have called the attention of residents to their excellence, and I have been frequently asked how and where certain lamps could be obtained.

Locks, if actively introduced, ought to find a good sale here, for the old-fashioned, clumsy strap-locks and padlocks, with heavy keys, are the kind still in vogue throughout the islands.

Platform scales have never been properly introduced. The old-fashioned hanging weighers are seen in storehouses, where the use of a platform scale would save time and labor. An energetic agent would undoubtedly do a good business in the plain, cheapest platform scales.

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Patent medicines are already widely sold here, and I believe the trade could be increased.

Sewing-machines sell well here. The Singer Company have the only agency that I know of in the islands.

Petroleum stoves ought to be sold in greater numbers. They are just the article for use in the hot seasons. I know of but one store in which they are sold, and that a very small establishment. If the Maltese housekeeper was not so wedded to the old ways, he would quickly discard the old brick and tile structure he cooks on and get him an American cooking-stove.

Yankee notions are popular, but the stock on hand is limited in quantity and variety. There is a so-called "American novelty store" here that does a thriving trade. The proprietor tells me he could do a much larger business in American notions if he had more capital and a larger store. He says that the very name American given an article sells it in preference to similar goods of other manufacture.

Type-writers are literally unknown here, that is, there are none in use. I am perfectly certain that they would find numerous buyers if they were introduced and explained. The chief secretary told me he would have one at least in his office if he could get one on the spot and be taught how to use it.

I believe that our printing and writing papers of good qualities would find sale here. The writing-paper one is compelled to buy from the stationers here is poor stuff, all sent from England, and of the well-known colonial grade, that is, cheap and nasty. There are nineteen newspapers published in the island, printed on paper of inferior quality, the colonial grade again.

The trade journals that find their way into Malta do very much in attracting the attention of the people to our goods. A Maltese will frequently buy an article on the strength of an illustration. I have sometimes thought it would be money well invested if the advertisers in the trade journals would combine to send out, and cause to be intelligently distributed, a goodly number of said journals. An illustrated advertisement is eagerly read. After this consulate has finished with the trade journals that are sent to it they are sent to Maltese casinos and clubs, where they are in great demand. I place them where I think they will do the most good.

A general review of the trade of Malta for the year 1888 has been compiled and submitted to me by Mr. Charles Breed Eynaud, one of the foremost merchants and bankers in the island.* Mr. Eynaud's large dealings in American productions make his observations of unusual interest and value to American shipping merchants who ship goods into the Mediterranean.

JOHN WORTHINGTON,

UNITED STATES CONSULATE, *Consul.*

Malta, March 12, 1889.

* Published in Commercial Relations for 1888.

TEA ADULTERATION FOR THE AMERICAN MARKET.

REPORT OF CONSUL CROWELL, OF AMOY.

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AMOY OOLONGS.

There was a shrinkage of about 23,000 half-chests in this season's crop as compared with that of the year before, but their inferiority has been fully sustained in the quality of this year's teas. A large percentage of the Amoy oolong is poorly cultivated, poorly picked and cured, dirty, and adulterated. "Stuff" it was called by the Amoy commissioner of customs in his last year's annual report, and he added that the stuff "was alone wanted in America." This is, unfortunately, true, for nearly the whole crop of Amoy oolongs—bad and often unfit for use as they are—are annually marketed in the United States. The American people are better able to use and pay for a good article of tea than the people of any other nation. I am certain it is not the tea-drinking public in the United States that causes this inferior stuff to find a market only in America. It is the greed of importers and exporters that alone makes it possible to impose this vile stuff, by excessive courtesy called tea, upon the American public. I have several times called the attention of the Department to the stuff called Amoy oolong. I now beg to repeat my suggestions with increased emphasis, and to hope that the tea-drinking public at home may be protected against this so-called tea known as Amoy oolong. I repeat my suggestions at this time, when all the last year's crop has been marketed and before the new crop comes into market, that it may not be thought I have any desire to affect the market of these teas or to accomplish any other purpose except that of preventing them from being dumped into the New York market, and then, by some occult means, imposed on the public.

The law relating to the importation of bad and adulterated teas into the United States is sufficient, if enforced, to protect the public against such spurious teas.

Most of the Amoy oolongs are sent hence to the port of New York. A small percentage goes to other American ports. Hence careful attention and honest inspection of these teas at New York would prevent their being imposed upon the public. Of the 2,862,580 pounds of this tea which this year went to New York, I am quite confident, if it had been inspected with even moderate care and the law enforced, that 50 per cent. of it would have been refused entry into the United States. Every invoice of Amoy oolong that reaches New York or San Francisco should be rigidly inspected, for anything branded as Amoy oolong is open to suspicion as being bad or badly adulterated, and hence every invoice of these teas should be most carefully examined at the custom-house. This would afford some protection to the American public. It will make importers and exporters more wary about dealing in the stuff, and it will tend to improve the quality of the future product in this district. The Chinese tea growers and merchants will never improve their methods of cultivating, curing, and handling their teas until they find that they can not sell them without making some improvement.

I append hereto two tables, one showing the movement of Formosa and Amoy teas from this port to New York, and the other to London during the past seven years.

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Comparative table of export of tea from Amoy to New York, seasons 1882–'89.

Seasons.	Tamsui oolong.	Amoy oolong.	Congou.	Total.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
1882–'83	10,408,672	3,225,974	4,581	13,639,227
1883–'84	11,272,569	1,934,209	6,655	13,213,433
1884–'85	11,975,093	3,553,047	.....	15,528,140
1885–'86	14,482,171	3,917,997	.....	18,400,168
1886–'87	13,790,156	4,232,721	.....	18,022,877
1887–'88	14,520,453	3,777,164	.....	18,297,617
1888–'89	14,961,048	2,862,580	.....	17,823,628

Comparative table of export of tea from Amoy to London, seasons 1882–'89.

Seasons.	Tamsui oolong.	Amoy oolong.	Congou.	Total.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
1882–'83	752,473	88,649	20,154	861,276
1883–'84	1,018,481	2,200	.....	1,020,681
1884–'85	772,165	52,013	3,856	828,034
1885–'86	935,397	155,304	.....	1,090,701
1886–'87	922,030	162,364	.....	1,084,394
1887–'88	1,199,950	86,989	.....	1,286,939
1888–'89	1,007,945	1,160	.....	1,009,105

The following table shows the amount of arrivals, settlements, and stocks on hand of Formosa (sometimes called Tamsui) oolong and Amoy oolong during the past season, up to date of January 28, 1889:

Arrivals, settlements, and stocks, season 1888–'89.

Description.	Tamsui oolong. (Foreign and native packed.)		Amoy oolong.	
	1888–'89.	1887–'88.	1888–'89.	1887–'88.
	Half-chests.	*Half-chests.*	*Half-chests.*	*Half-chests.*
Arrivals	392,565	384,786	72,136	95,403
Settlements	392,440	384,148	72,136	95,403
Stocks	125	638	.....	.....

W. S. CROWELL,
Consul.

UNITED STATES CONSULATE,
Amoy, February 4, 1889.

NEW STEAM SERVICE IN THE WEST INDIES.

REPORT OF CONSUL SAWYER, OF TRINIDAD.

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On January 1, 1889, Tobago was annexed to Trinidad. There immediately resulted a demand for steam communication between and around these islands, such conveyance justifying the prospect of a large increase in the cultivation of fruits (an industry hitherto sadly neglected), providing a line of steamers be placed between a port in this colony and New York. The success of the Jamaica fruit trade is a subject of comment here, and it is well known that in some respects Trinidad has the advantage of that island in raising fruits, as there are no destructive hurricanes here, and, besides, the soil of this island is well adapted to the red fig, a banana in much demand in the New York market, and which does not thrive in Jamaica. It is safe to predict that the orange, lemon, and many other now neglected fruits would rival the banana as articles of trade.

Many kinds of ground provisions have hitherto perished in the interior and near the sea-coasts of these islands for want of means of transportation to the market, among which are rice, corn, casava, sweet potatoes, tanias, yams, cush-cush, etc. And so it has been with fruits, which are numerous and various, as follows: Oranges, pomarck, tamarand, bell-apple, cashew, star-apple, mamesapote, balata, shaddock, sesamum, pine-apple, mango, custard-apple, rose-apple, sapote, sapadilla, jan-bolan, grenadilla, melons, grugru, guava, soursop, avocado, mabola, maize, governor plum, hog plum, sugar apple, pirihao, poisdonk, pomsitea, and others. Nor is the fruit trade the only subject worthy of consideration.

The mails at present are slow and irregular, by indirect lines, and as many travelers to England from the colony during spring and summer would go via New York by a direct line this Government has concluded to grant a subsidy to a semi-monthly line between New York and Port-of-Spain.

THE AGREEMENT.

Agreement made this day of 1889, between Henry Fowler, colonial secretary, and his successors in office, on behalf of the Government of Trinidad, hereinafter called the Government, and James R. Greig, by his attorney, Hugo Hoffman, trading under the name and style of Turnbull, Stewart & Co., of Port-of-Spain, Trinidad, hereinafter called the contractors.

The Government agrees to pay to the contractors a subsidy at the rate of £5,000 a year, in monthly installments, for the period of seven years, and such further sum as may be granted by the Island of Tobago toward this service, in consideration of the contractors carrying out a steam service between Trinidad and New York and round the Island of Trinidad to include calling at Tobago once a fortnight, on the following conditions:

(1) That the steamers to be employed between Trinidad and New York shall not be of less burden than 350 tons net register, and perform the voyage at a rate of speed not less than 10 knots an hour for the first two years of the period comprised by this agreement.

(2) That the steamers to be employed in performing the service round the island and to Tobago shall not be of less burden than 160 tons net register, and shall perform the voyage at a rate of speed not less than 9 knots an hour.

(3) That such steamers shall be properly equipped and manned, and be subject to inspection by a qualified person, to be appointed by the Government, whose recommendation the contractors will be liable to carry out.

(4) That such steamers shall be provided with suitable accommodation for passengers, and be fitted for the carrying of fruit to the satisfaction of the governor in council.

(5) That the contractors undertake to purchase all fruits, vegetables, or other minor products that may be brought alongside their steamers at any place on the island that the steamer stops for the purpose, at market rates, or to carry the same on freight at rates not exceeding those specified in schedule A, attached to this agreement.

(6) That the rates of passage money and for freight shall not exceed those mentioned in schedule B to this agreement.

(7) That the service between Trinidad and New York shall commence by a steamer leaving Port-of-Spain not later than the 1st of May next on her first voyage to New York, and the days for the arrival and departure of the steamers under this agreement at the several ports or places shall be according to the time-table in schedule C to this agreement, provided that such time-table may be altered from time to time by the governor in council.

(8) That the service round the island and to Tobago shall commence by a steamer leaving Port-of-Spain not later than the 1st day of October next, and such steamer shall sail according to the time-table in schedule C to this agreement, or as the same may be duly altered.

(9) That in the event of the two services not being commenced at the same date, and until the island service is begun, the subsidy payable will be £3,000 instead of £5,000.

(10) That on the expiration of two years from the date of this agreement steamers of not less than 500 tons burden net register, which shall perform the voyage at a speed of not less than 12 knots an hour, shall be employed in the service between Trinidad and New York.

(11) That the contractors enter into a bond for £2,000, with two sureties, for the due fulfillment of this agreement.

(12) That this agreement may be terminated at the expiration of two years from the date hereof on either party giving the other notice in writing at least three months immediately before that period expires.

(13) That in the event of any willful breach of this agreement on the part of the contractors a sum not exceeding £25 for each day's delay in arrival or departure of any steamer duly timed under this agreement, and a penalty not exceeding £50 for any other breach may be adjudged by the governor in council by way of liquidated damages for any default in the conditions of this agreement, and such penalties may be deducted from any portion of the subsidy that may be due on account of this agreement or enforced against the bond given under this agreement.

(14) That all postal matter shall be carried free and duly taken from and delivered to the proper postal authorities at the ports visited by the steamers in Trinidad and Tobago under this agreement. Packages, plants, and seeds from the botanical department shall also be conveyed free of charge.

The superintendent of the royal botanic gardens or his assistants, and all police, customs, and postal officers on duty on the voyage round the island and to Tobago shall also be conveyed free of charge, except as regards table expenses.

SCHEDULE A.

Rates of freights for fruit and vegetables from any place in Trinidad to New York.

	Cents.
Bananas and plantains, per bunch of 7 hands, not to exceed	60
Oranges, per box of 100, not to exceed	60
Mangoes, per box of 100, not to exceed	60
Limes, per box of 400, not to exceed	60
Tomatoes, per half-box, not to exceed	35
Ginger, per barrel, not to exceed	60
Potatoes, yams, and other roots, per bag, not to exceed	60
Nutmegs in boxes, per cubic foot measurement, not to exceed	25

SCHEDULE B.

Passage money between Trinidad and New York.

First-class, not to exceed	$80
Second-class, not to exceed	50
Deck	Unfixed.

Passage money between Trinidad and Tobago.

	North.	South.
First-class	$6.50	$9.00
Deck	2.00	3.00

Passage money round island.

Port-of-Spain to—	North route.	South route.
Blanchisseuse	$2.40	$12.00
Toco	4.00	10.00
Saline	6.50	9.00
Manzanilla and Mayaro	8.00	8.00
Galeota	10.00	6.00
Moruga	11.00	5.00
Erin	12.00	3.50
Hicacos	12.50	2.40

The above are cabin rates. Steerage rates half of the above.

Rate of freight between Trinidad and New York.

Sugar, per 100 pounds	$0.25
Molasses, per pun of 110 gallons	3.50
Cocoa and coffee, per bag	.60
Bitters, per box	.30
Hides, green, per 100 pounds	.60
Hides, dry, per cubic foot	.25
Cocoanuts, in husk, per 1,000	9.00
Cocoanuts, husked, per bag of 100 pounds	.60
Asphalt, raw, per ton of 20 cwts	4.50
Asphalt, epure (barrels), per ton of 20 cwts	3.50
Measurement goods, per cubic foot	.25
Specie and bullion	1 per cent.

Rate of freight to Tobago and round island.

Cocoa, per bag of 160 pounds, not to exceed	$1.00
Cocoanut oil, per gallon, not to exceed	.05
Sugar, per barrel, not to exceed	.60
Lumber, per 1,000 feet, not to exceed	8.00
Shingles, per 1,000, not to exceed	1.00
Bricks, per 1,000, not to exceed	10.00
Hogsheads lime, coal, etc., not to exceed	3.50
Puncheon, full, not to exceed	3.00
Tierce of fish, not to exceed	1.00
Pork or beef, per barrel, not to exceed	.75
Flour, meal, and bread, per barrel, not to exceed	.50
Half-barrels beef, not to exceed	.40
Bags of rice, not to exceed	.40
Barrels of malt, not to exceed	.60
Cases of brandy, whisky, or gin, not to exceed	.30
Baskets of oil, boxes of soap, firkins of butter, kegs and tins of lard, and boxes of cheese, not to exceed	.20
Hampers of potatoes and onions, not to exceed	.25
Boxes of dry goods, per cubic foot, not to exceed	.12

SCHEDULE C.

Time-table round the island.

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Northward, leave—

Port 11 p. m., arrive Blanchisseuse 6 a. m.
Blanchisseuse 8 a. m., arrive Toco 11 a. m.
Toco 1 p. m., arrive Tobago 5 p. m.
Tobago, arrive Saline 6 a. m.
Saline 9 a. m., arrive Manzanilla 11 a. m.
Manzanilla 3 p. m., arrive Mayaro 4 p. m.
Mayaro 4 a. m., arrive Galeota 6 a. m.
Galeota 8 a. m., arrive Moruga 10 a. m.
Moruga, arrive Erin 6 a. m.
Erin 10 a. m., arrive Hicacos 12 m.
Hicacos 1 p. m., arrive Port-of-Spain 7 p. m.

Southward, leave—

Port 11 p. m., arrive Hicacos 6 a. m.
Hicacos 8 a. m., arrive Erin 10 a. m.
Erin 2 p. m., arrive Moruga 5 p. m.
Moruga, arrive Galeota 6 a m.
Galeota 8 a. m., arrive Mayaro 10 a. m.
Mayaro 4 p. m., arrive Manzanilla 5 p. m.
Manzanilla, arrive Saline 8 a. m.
Saline 10 a. m., arrive Tobago 4 p. m.
Tobago, arrive Toco 6 a. m.
Toco 8 a. m., arrive Blanchisseuse 11 a. m.
Blanchisseuse 1 p. m., arrive Port-of-Spain 7 p. m.

SCHEDULE D.

Table for steam service between Trinidad and New York and vice versa.

Leave Port-of-Spain on Tuesday, the 30th of April, 1889, and every alternate Tuesday thereafter.

Leave New York on Monday, the 1st of April, 1889, and every alternate Tuesday thereafter.

INDUCEMENTS TO AMERICANS.

Should enterprising Americans, who are not averse to living in a tropical clime, be desirous of engaging in the fruit trade, they now have an opportunity in this colony. They can obtain information upon all subjects connected with these islands by a perusal of my dispatches of 1886, 1887, and 1888. They contain history, laws, government, population, religion, customs, agriculture, commerce, manufactures, fisheries, minerals, productions, immigration, labor, prices, land, money, exchange, imports and exports, tonnage, etc.

MOSES H. SAWYER,
Consul.

UNITED STATES CONSULATE,
Trinidad, March 7, 1889.

TRADE OF TIEN-TSIN.

REPORT OF CONSUL SMITHERS.

ADULTERATION OF CHINESE PRODUCTS.

At the opening of navigation in March last, the commercial outlook at Tien-Tsin was very discouraging, owing to the large quantity of straw-braid exported during 1887, much of which had been fraudulently manipulated by native manufacturers in the interior, and it was feared that the demand for this article would be very limited. Furthermore, the practice of the natives in adulterating other articles of export with sand, such as wool, camels' hair, and goat-skins, had been carried to such an extent as to greatly diminish their

value. Early in the season the Viceroy Li Hung Chang issued a proclamation notifying native manufacturers and dealers that they would be punished if found guilty of malpractices in the preparation of merchandise for export. This had a marked effect upon the quality of all classes of goods arriving from the interior, and caused trade to revive.

IMPORTS.

Cotton manufactures are the principal imports, nearly all of which come from Great Britain and the United States. The following statement will show the extent of this trade for the years 1887 and 1888:

Description.	1887.	1888.
Shirtings:		
Gray ..... pieces...	1,287,623	1,197,574
White ..... do.....	634,171	573,885
Dyed ..... do.....	6,884	11,773
T cloths ..... do.....	336,383	306,783
Drills:		
English ..... do.....	76,267	105,850
American ..... do.....	263,913	269,996
Sheetings:		
English ..... do.....	30,906	146,984
American ..... do.....	939,958	782,576
Turkey red cloths and cambrics ..... do.....	115,104	101,972
Lastings ..... do.....	149,463	134,675
Italian cottons ..... do.....	74,849	50,203
Handkerchiefs ..... dozens...	33,331	27,604
Cotton yarn ..... piculs...	51,034	61,036

AMERICAN VS. ENGLISH COTTONS.

It will be seen that for the past year there was a falling off in the importation of American sheetings, and a corresponding increase of the English manufacture of the same article. This may be explained by the fact that all classes of English cottons are inferior and relatively cheaper than those made in the United States, and owing to the general depression in the export trade the natives have bought the cheaper article. It will be seen, however, that the American sheetings and drills still control this market, but it may well be questioned whether they will long continue to do so, unless American manufacturers oppose the English imitations by producing a cheaper article expressly to meet the wants of the poorer classes. Most of the people in China being abjectly poor, the greatest demand is for cheap cottons, which are used as the only article of clothing. In this cheap trade the English manufacturers are practically without a rival. With the immense supply of this staple in the United States and superior machinery, it can hardly be said that the American manufacturer can not compete with other countries in turning out any grade of cotton goods. The subject is one that should claim the serious attention of American manufacturers.

KEROSENE, OIL.

The importation of kerosene oil amounted during the year to 1,506,645 gallons, an increase over 1887 of 285,565 gallons. A consignment of Russian mineral oil reached the port, but the quality was so inferior to the American oil that the experiment of introducing it entirely failed. This trade would be greatly extended if vessels of a large size could reach the port direct from the United States. The trial was made in 1886, when two cargoes were entered, but the cost of lighterage at the Taku bar and the waste of the oil by leakage of the cans in so much handling were found to be so great that no similar venture has been made.

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EXPORTS.

The value of the exports to the United States for the year, as shown by the consular invoice records, amounted to $507,034. The following table will show the principal articles exported:

Straw braid	$197,203.00
Wool	150,539.01
Wool, camels'	8,204.18
Porcelain, jade, etc	80,882.46

It will thus be seen that Tien-Tsin is the only port in China where the exports to the United States are less than the imports; in other words, where the balance of trade is in favor of the United States. This may be attributed to the fact that tea and silk are not produced in this district. The large increase in the exportation of old porcelain and jade is doubtless mainly due to works of art prior to the eighteenth century being admitted into the United States free of duty.

E. J. SMITHERS,
Consul.

UNITED STATES CONSULATE,
Tien-Tsin, January 31, 1889.

PROTECTIVE TARIFFS IN FRANCE.

REPORT BY CONSUL MASON, OF MARSEILLES.

In various recent reports from this consulate it has been stated that within the past five years the import duties on breadstuffs, sugar, cattle, and other food products have been steadily increased; that the commercial treaty between France and Italy has been abolished by limitation; that a majority of the agricultural and manufacturing classes demand the withdrawal of France from all similar treaties with other competing countries; and, finally, that the governing sentiment in this country is now strongly and increasingly in favor of a high and rigid protective policy. It is proposed in the present report to review briefly the history of protective tariffs in this country, the

results which followed the free-trade measures of 1860, and note the more obvious causes which, after two centuries of varying experience, have led popular opinion to its present attitude on this question.

The protective system in France began with the tariff law which was systematized by Colbert in 1664 and 1667. This schedule stood almost unchanged for more than a century, until the agitations of the Quesnay school of economists produced a reaction in favor of free-trade and led to a commercial treaty with England in 1786. Under this convention French industries were fairly successful for three years, when the revolution of 1789 overthrew the treaty and restored the system of Colbert. The effect of the revolution was naturally disastrous to all industry and commerce, and the exports of France fell from 1,018,000,000 francs in 1789 to 624,000,000 francs in 1792.

At the fall of the first Napoleon, in 1815, the free-trade leaders attempted to secure a re-adoption of their policy, but failed; and the country, still under the Colbert system, struggled gradually out of the collapsed and exhausted condition in which it had been left by the slaughter and carnage of the great continental wars which had raged during the previous twenty years.

After the revolution of 1830 the free-trade party made another effort to secure a general reduction of tariff duties, but the movement, sustained by no one except theorists, failed. Under the protective system exports had risen in 1834 to 1,014,000,000 francs, or about the figures of 1789.

The agitation continued, and in 1841 the French Society of Political Economy was founded, with the Journal des Economistes as its organ. The society included many able theorists and a few practical men, among them Jean Dollfus, the eminent cotton spinner of Mulhouse, in Alsace, was perhaps the most notable. They worked and argued with assiduity, aided by the influence of the anti-corn law agitation of 1846 in England, and seemed on the road to success, when the revolution of 1848 again overthrew their plans and left the protectionists in control for twelve years more. Meanwhile Louis Napoleon, in 1852, had re-established the Empire. The protectionists had a large majority in the Chamber, and the Emperor was strongly committed to their views, until in 1859 he came under the personal influence of Mr. Cobden, who, pointing to the experience of England under free-trade, converted Napoleon to his theories. With the characteristic zeal of a convert he drew up a scheme of reform, proposing the abolition of duties on raw materials, notably wool and cotton, a progressive reduction of the tariffs on sugar and coffee, the suppression of all prohibitory duties, and the negotiation of reciprocal treaties of commerce with foreign nations. This programme met with such violent opposition that the Emperor was compelled to proceed more discreetly, but he persisted, and on the 5th of January, 1860, it was suddenly announced that a treaty had been signed with England, under which the old protectionist policy had been abandoned, raw materials rendered free, and English manufactured goods admitted into France on payment of nominal duties not to exceed 25 per cent. ad valorem. A storm of

protest followed this commercial *coup d'état*, which Napoleon's ministers did their best to allay by hearing patiently all protests and arranging the new duties under the 25 per cent. limit as judiciously as possible. The tariff on yarns was fixed at 7 to 10 per cent., and that on cloths at 10 to 12 per cent., rates with which, as subsequent experience proved, France was unable to maintain the competition. At the same time commercial treaties, similar in purport to that with England, were negotiated with Italy, Belgium, Portugal, Austria, and Germany.

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Under this new system the country lived and prospered until 1868, when, at the close of that year, the published statistics of foreign commerce again opened the discussion. The progress which had been made since 1859, the last year of the protective system, had been as follows:

	Imports, francs.	Exports, francs.
1859	1,641,000,000	2,266,000,000
1868	3,304,000,000	2,700,000,000
Increase	1,663,000,000	524,000,000

While exports had increased 24 per cent. imports had more than doubled, and for the first time in history the balance of commerce was against France. To meet the protests which this situation suggested a committee of inquiry was appointed to make a full and minute examination into the results achieved by the treaties of 1860. The Suez Canal had just been opened with great éclat, the civil war in the United States and the period of inflation which followed it had greatly increased the demand for many articles of luxury peculiar to French manufacture, and the country, notwithstanding its enormous imports, seemed busy and prosperous. The committee of inquiry had sat about six months when its sessions were interrupted by the Franco-German war of 1870. All that related to the Imperial Government fell into such disfavor that the report of the committee was never published, but some of its members stated privately that their conclusions would have recommended a general return to higher duties.

The spring of 1871 found France prostrate at the end of a devastating war, with an enormous indemnity to pay, and the public treasury burdened with a greatly increased debt and the necessity of new and costly measures of defense. It was of the first necessity to restore as promptly as possible the prosperity of the country, and increase by every possible means the present and future revenues of the Government. There was but one episode in recent history to which, in such a crisis, the statesmen of France could look for an example in financial management. That was the American Rebellion and the policy by which the Federal Government had met the colossal expenses of the war, and, immediately after its close, began the steady reduction of the National debt.

Such was the influence of that example upon French statesmen that M. Thiers, then practically at the head of affairs, assisted in framing a bill for a new tariff system, levying duties on all imported raw materials, with a proportionate increase in the duties on manufactured merchandise and drawbacks

to facilitate foreign trade. The national assembly was then strongly inclined toward free-trade, but the necessities of the Government were urgent, and by exerting every influence, even to the point of threatening to resign, M. Thiers, in July, 1872, secured the adoption of his protective policy, though under a somewhat modified form. England and Belgium naturally opposed this increase of duties on their goods when imported into France, and stood out so strongly against any modification in existing treaties that, in order to avoid unpleasant complications with powerful neighbors, the French Government, soon after the fall of the Thiers ministry in May, 1873, rejected the plan of increased duties on manufactures and renewed the treaties with Belgium and Great Britain. There was at that time a general revival of prosperity throughout the world, in which France naturally shared, her exports in 1875 reaching the very high total of 3,873,000,000 francs against 3,537,000,000 francs of imports, thus restoring the balance to the right side.

This was high-water mark. The Suez Canal, opened in 1869, had proved an immediate and phenomenal success, steam-ships and ocean telegraphs had begun to revolutionize and extend maritime commerce, the dock-yards were everywhere busy, and, in the general prosperity which prevailed throughout the world, France seemed to be enjoying her full share. The advocates of free-trade pointed to these results as the vindication of their policy, and public opinion in the sea-ports, the manufacturing districts, and throughout the wine and silk growing regions of the south was, in 1875, almost unanimous in their support.

But the year following saw the beginning of a change, the advent of new conditions, which gradually revolutionized public sentiment and led up to the situation which exists to-day. A succession of unfavorable seasons and bad crops diminished the home product of food; the phylloxera invaded the vineyards and nearly destroyed the export of wine; Italy and China began to make serious inroads upon the silk trade, and the marvelous development of manufactures in the United States enabled that country to produce at home carpets, plain silk goods, and many other articles of utility and luxury which had formerly been largely imported from France. In 1880 French imports had increased to 5,033,000,000 francs against 3,467,000,000 of exports, and popular discontent became loud and imperative. The situation was still further complicated by the largely increased expenditures necessitated by the interest on the augmented public debt and the cost of re-organization and increase of the French army and navy, its subsidies to steam-ship lines, and other important measures. Under these circumstances the Government reluctantly consented to a revision of the tariff, and appointed a commission to make an exhaustive inquiry into the case. A full hearing of all branches of industry and agriculture confirmed the general sentiment in favor of protection, and the result was the new tariff system which, after elaborate debate, became a law in 1881.

Under this statute the nominal duties on most manufactured goods were increased, ad volorem duties were changed to specific taxes in order to pre-

vent undervaluations, and on this new basis treaties were arranged in 1882 with Belgium, Switzerland, Austria, and Spain. England refused agreement to the increased duties proposed for her cotton and woolen goods, and a compromise was made by which France conceded to Great Britain the treatment accorded to the most favored nation, which was substantially the same as that which had been secured to Germany by the treaty of Frankfort, in 1871. The treaties with Belgium, Switzerland, Austria, and Spain were for ten years, and will expire in 1892. That with Italy expired in 1888, and has not been renewed. Meanwhile the protection sentiment has been steadily growing, and there is now apparently a controlling sentiment in favor of abolishing all existing commercial treaties as fast as they expire, and making France self-centered and independent. Against this policy there is the protest of the commercial and operative classes, though many of the leading manufacturers are ardent protectionists. French manufacturers are proverbially conservative in respect to machinery and methods, and in certain kinds of work they have been surpassed, in respect to cheapness and facility of production, by their rivals in other nations. Moreover, they insist that with the high taxation that prevails in this country they are unable to compete with the less burdened manufacturers of certain neighboring countries.

The cheap breadstuffs of India, Russia, and the United States, the wines of Spain, Italy, and Greece, as well as the meats of North and South America and Australia have overwhelmed the local farmers and stock raisers. Prices have fallen in many cases below the cost of production, rents and the value of agricultural property have declined, and the rural population, discouraged with phylloxera and unremunerative prices, have flocked to the towns in increasing numbers, and have even begun to emigrate.

The duty on wheat, which the Government had not dared to propose in 1881, was brought forward two years afterward, and after a long and searching debate was adopted and fixed at 3 francs per quintal in March, 1885, and again increased to 5 francs per quintal in March, 1887. Similar legislation created duties on beet-sugar, so adjusted as to greatly favor the home producers. Southern France, with her two great staples of silk and wine and her large commercial ports, Bordeaux and Marseilles, had always adhered firmly to the free-trade party, but the experience of the past ten years has brought the agricultural classes here, as elsewhere, almost unanimously over to the side of protection.

Unfavorable seasons and the ravages of phylloxera had reduced the wine exports of France in 1887 to 54,100,000 gallons, while her imports for that year—chiefly from Italy, Spain, and Algeria—reached the enormous total of 260,595,000 gallons, and now that French vineyards have been measurably restored to their former productive capacity, the value of native ordinary wines is so low as to hardly leave a living profit to the proprietor, whose expenses have been greatly augmented by increasing taxes, and by new and costly methods of culture.

For this difficulty the agricultural classes see but one remedy, viz, to abandon all commercial treaties as soon as they lapse by limitation and put prohibitive duties upon foreign wines and the dried grapes of Greece and the Levant. The abolition of the treaty with Italy in March of last year cut off an annual import of 80,000,000 gallons from that country, and when, in December last, Greece sought to negotiate a commercial treaty with this country, the proposition was courteously but firmly declined. Petitions, supported by numerous agricultural societies, demand that import duties be put upon the wines of Tunis, a country under French protection, and, unless there is a radical change in public sentiment, the treaty with Spain will be dropped when it expires in 1892.

As to the theoretical controversy between the advocates of free-trade and protection, that may said to be still as far from settlement as ever. The leaders and journals of both parties point to the experience of the past thirty years as conclusive in favor of their respective theories. The free-traders declare that the increased wheat crops from 1865 to 1875, the augmented wages and diminished living expenses of the working classes, as well as the ease with which France paid the German indemnity and shouldered the enormous expenses of the war in 1870–'71 were all due to the influence of the free-trade measures of 1860. The protectionists, on the other hand, argue that the result of this policy, although apparently favorable during the first few years, was on the whole disastrous, and cite in proof of this the following comparison between the foreign trade of 1859, the last year under the old protection régime, and 1887, the last year for which complete statistics are as yet accessible: Imports (commercial special), 1859, 1,641,000,000 francs; 1887, 4,026,000,000 francs; exports, 1859, 2,266,000,000 francs; 1887, 3,253,000,000 francs; increase in imports, 145 per cent.; in exports, 43 per cent.

Between the lines of the two opposing camps there is a great conservative reserve of practical men, who know and care little about theories or the politics of economic questions, and who, while refusing to enlist definitely under the banner of either party, reserve the liberty to decide, in each special case, what is best for their own interests and those of the country. The effect of the dull trade and low prices which have prevailed during the past five years has been to push a large proportion of these independents more and more towards the side of the protectionists, who have thus been able to secure enhanced duties on cereals, cattle, and sugar, prohibit the entry of American pork, and defeat new commercial treaties with Italy and Greece.

FRANK H. MASON,
Consul.

UNITED STATES CONSULATE,
Marseilles, February 26, 1889.

DISTILLED PERFUMES AND ESSENTIAL OILS.

REPORT BY CONSUL MASON, OF MARSEILLES.

In a report from this consulate (published in CONSULAR REPORTS No. 68, September, 1886,) an account was given of the manufacture of pomade perfumes at Grasse, Seillans, and other points in this region, by the process of absorption, from roses, jonquils, orange blossoms, and other species of flowers cultivated on a large scale for that purpose.

It is proposed in the present paper to describe briefly the methods, extent, and results of another but hardly less important branch of the same industry—the manufacture by distillation of essential oils from various species of wild plants, such as lavender, thyme, fennel, romarin, etc., which grow upon the gray, arid hills and mountain slopes of southeastern France. The subject would seem to possess a practical interest, first, because a large share of the products of this manufacture is imported and consumed in the United States, and, secondly, as an illustration of how, in a country of meager fertility and the most limited natural resources, the humblest vegetable growths may, through industry and careful management, be made the means of support, and even prosperity, to a large number of people.

The region of aromatic plants is a tract of mountainous country about 100 miles in length by 50 in breadth, which includes part of the departments of Drôme, Vaucluse, Var, Basses-Alpes, and the Alpes Maritimes. It lies at some distance from the coast, Nyons, the focus of the distilling industry, being in the valley of the River Aigues, which is the northern limit of the olive in eastern France. The valleys in this region are fertile, but often narrow, and their production of grains, and even the smaller fruits, is largely dependent upon irrigation. The hills are almost denuded of large trees, and bear only a thin, scattered growth of scrubby bushes, an occasional forest of pines, and, in some places, an undergrowth of furze and aromatic plants, which cling to the arid, calcareous soil through the keen blasts of winter and the long droughts of summer.

The most useful ones are the lavender and aspic, two plants of the genus *labiæ*, wild thyme, rosemary, absinthe, rue, sage, origanum, and fennel, which latter grows along the margins of mountain streams. Of these by far the most important is the lavender (*Lavandula vera*), which lifts its head of delicate blue flowers on a slender stem 6 to 8 inches in length, and grows so profusely that the summer winds, sweeping over the hill-sides clothed with it, carry the perfume far over the hot plains below.

The harvest enlists a large share of the peasant population—men, women, and children—and so profuse is the supply that in good seasons the people who gather and sell lavender to the distillers, at prices ranging from 5 to 8 francs per 100 kilograms, are able to earn thereby 80 or 90 cents, or even $1, per day, wages that are considered munificent in this country of scant employment and ill-requited labor.

The distillation of lavender on an industrial scale was begun more than a century ago in the neighborhood of Grasse, which is still the principal mart of production and commerce for the finer perfumes of cultivated flowers; but during recent years the business has extended inland and westward until Drôme, the most westerly department of the district, now produces 66,000 of the 125,000 pounds of oil of lavender manufactured in this country. In many places lavender, rosemary, thyme, and the other aromatic plants are distilled by farmers and small operators in the villages and communes, but the present status of the industry will be best illustrated by a description of a leading establishment like that of the Messrs. Charras & Co., at Nyons, in the Drôme, where every modern appliance is employed to facilitate rapid and cheap production and enhance the quality of the product. This distillery was founded in 1836 by the father of the present proprietor, who has made important improvements during recent years and exports a large part of his product to the United States.

The harvest of lavender begins about the 1st of July and continues until the end of September. The best results, both as to quantity and quality, are obtained by distillation of the fresh plants in the season of blossoming, but as these are available only during one-quarter of the year the lavender is dried like hay, and furnishes material for distillation during nine or ten months of the year. The same is true of the Aspic (*Lavandula spika*), which is known in America as "garden lavender," but all are, like the true lavender, at their best when in the season of full flower, which varies according to species from April until the end of summer.

The practical process of distillation varies but slightly for all these varieties, and the same apparatus is often used successively for each kind of plant as its season of flowering and harvest arrives. The necessary machinery includes as its principal feature a copper alembic, usually about 6 feet in height by 4 in diameter, the beak of which is carried over and terminates in a spiral coil immersed in cold water. Each alembic has, near the top, an opening closed by a man-head, secured by bolts as in ordinary steam machinery. Through this opening the mass of fresh plants is packed into the interior until it is completely filled. Near the bottom of the alembic another similar opening is provided, through which the spent material may be withdrawn with a pronged hook like a manure fork with curved tines. The bottom is covered with a perforated copper diaphragm, under which lies a flat coil of pipe, likewise perforated, through which live steam is introduced from a boiler in which a pressure of from 5 to 7 atmospheres is maintained.

The alembic being thus charged with raw material—either freshly gathered or dry—and the man-heads closed, the steam is turned on and forces its way upward through the mass, absorbing and carrying the perfume over into the submerged coil, where the oil condenses and trickles out with the distilled water, upon which it floats by reason of lighter gravity. In about three hours the perfume is exhausted, when the alembic is emptied and recharged. Three hundred pounds of dried lavender plants, or 220 pounds of

aspic, are required to produce 1 pound of essential oil. The refuse plants are dried and used as litter for stables or rotted for manure, for in this country nothing is wasted.

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Lavender was used profusely by the Roman conquerors of Gaul to perfume and purify their baths, whence its latin name, derived from *lavare*. Its modern uses are for the manufacture of cologne and as a perfume for toilet soaps, for which purposes immense quantities are exported annually to the United States, and as a sweetening and antiseptic odor for linen. In medicine it is employed as an excitant and tonic in the treatment of paralysis, hypochondria, and epilepsy. The oil of aspic serves measurably for the same purposes, but it is a coarser, ranker perfume and much less valuable than the true lavender, for which it is often substituted. All this class of essential oils, including those of thyme, rosemary, and fennel, varies greatly in grade and consequent value according to season of distillation and the skill and care with which the plants are selected and the process of manufacture performed. All, except absinthe, are admitted free of duty under the present United States tariff law, so that in respect to imports the question of market values is not involved otherwise than commercially.

The distillation of absinthe is only an unimportant feature of the industry at Nyons, but its production and use in the form of liqueur are so rapidly increasing and with such unfortunate results in certain quarters that the subject may fitly be included in the present topic. There are two species of the absinthe plant—the large and small—which are used respectively in the manufacture of absinthe liqueurs and vermouth. The larger of these, *Artemisia absinthium*, otherwise known as wormwood, grows abundantly in various districts of Central Europe, notably in Jura and French Alps. In manufacturing the liqueur the upper leaves and twigs of the plant are macerated with hyssop, calamus, citronelle, anise, fennel, badiane, and other vegetable substances. The decoction thus obtained is distilled, and the product treated with alcohol, sugar, and various coloring matters. Absinthe is a powerful but destructive nerve stimulant, which may be valuable in cases of exhaustion or extreme fatigue, but, like chloral and opium, it is liable to abuses, which, in the aggregate, far outweigh all the benefits which are derived from its legitimate use. The effects of general and unrestrained absinthe drinking in this country are coming to be recognized as forming the basis of one of the gravest dangers that now threaten the physical and moral welfare of the people.

In the present advanced stage of the art of "mixing" a rude but salable form of absinthe liqueur can be made by using the essential oil of wormwood instead of the leaves and stems of the plant, and this has given during recent years a stimulant to the business of distilling it, but the product in this particular district is small and relatively unimportant.

The distillation of essential oils from wild aromatic plants, the manufacture of perfumes from cultivated flowers, and the preparation of preserved fruits by the process of crystallization are three profitable industries peculiar

to southern France. They have been built up, each in its separate locality, and have become, practically, monopolies for no other apparent reason than because they were first successfully undertaken here, and the world of consumers is content to believe that original brands are best. The same is true of other things, notably liqueurs, such as benedictine and chartreuse. When, recently, a fabulous sum was offered to the monks of La Grande Chartreuse for the proprietary rights of their renowned cordial it was not for the secret of its manufacture, for that has long been accurately known, but for the right to use the original labels and bottles, which are the guaranty of genuineness and purity.

In a country having the immense range and variety of soil and climate that are found in the United States there will surely be found at no distant day materials and facilities for the production of numerous delicate and valuable articles which are now imported, and in this category the essential oils of various wild plants will certainly be included.

FRANK H. MASON,
Consul.

UNITED STATES CONSULATE,
Marseilles, March 26, 1889.

INDUSTRIAL ART IN THE LOIRE.

REPORT BY CONSUL MALMROS, OF ST. ETIENNE.

A society is now being formed here under the name of Société d'Art et d'Industrie de la Loire, with a view of developing the commerce and industry of the department of the Loire and furnishing its artisans with the means of extending their instruction in the trade to which they respectively may belong.

For this purpose the society will establish at St. Etienne a combined museum and library containing works of industrial art, models (either original or in the shape of reproductions), drawings, engravings, photographs, and books, all of which articles will be selected with exclusive reference to the existing industries of the department.

Annexed to the library-museum will be a bureau of commercial information, in which will be found, for the use of merchants and manufacturers, such documents, foreign as well as French, as may be of interest to them. It will also contain all information sent by consular agents to the French ministry of foreign affairs and by French chambers of commerce established in foreign countries, etc. The society will further establish a bureau of industrial consultation, where the members will receive advice as to the improvement of their looms and other machinery, and where, likewise, such plans, models, and designs as may be submitted to the society will be corrected free of all expense.

The head-quarters of the society will be at St. Etienne. Branch societies will be located at the centers of population of the department, as at Roanne,

Montbrison, St. Chamond, etc., and through these branch societies application for books and models from the library-museum at St. Etienne will be made.

The society considers as groups, forming, in a certain sense, part of itself, the municipalities, syndicates of artisans, artistic associations, and the schools, primary and secondary, as well as artistic and technical, of the region, as also the masters and chiefs of industry and the workmen and apprentices in unlimited numbers.

ORGANIZATION.

Of the organization of the society the "promoter" thereof speaks as follows: In the department of the Loire two artistic branches of manufacture predominate, that of ribbon trimmings (*rubanerie-passementerie*) and that of arms. These constitute the two first sections of the museum.

First section, ribbon trimmings.—In the division of patterns the section will contain the most remarkable samples of the workshops of St. Etienne, and of the other centers of production, manufactured during the eighteenth and nineteenth centuries. Connected with these samples will be a collection, as rich as possible, of silks and other textile fabrics of European, Chinese, Japanese, and other oriental countries, embroideries of all styles and epochs, pictures of flowers, both native and exotic, different series of various "motifs" of decoration and ornamentation, etc. This collection is intended to serve to manufacturers and their designers as elements of technological study of inspiration in originating new designs. All these articles will, on demand, be sent to the houses of the members of the society.

In the commercial division will be found samples of all the productions of the day of foreign manufacturers, with indications of the prices for which they are severally sold, the places from which they are exported, etc., and these samples may likewise be borrowed by the members.

The museum will also constitute a kind of conservatory of weaving in forming a collection of all the original types, old and new, of the looms and other machinery employed in the entire world by manufacturers of ribbons and trimmings.

Second section, arms.—The museum of artillery at St. Etienne offers already a considerable collection of models, which, through galvanoplastic and other reproductions of the originals of the museums of artillery at Paris, Cluny, Moscow, Madrid, Turin, etc., may be rendered easily and at little expense very complete. Joined to these models will be photographic reproductions of pictures representing hunting and shooting scenes, of pictures of animals, in a word, of everything useful to the designers and engravers of arms for field sport.

The commercial division of this section will be organized on the same principle as that of section 1. Specimens of new foreign arms will be carefully looked for, collected as soon as they make their appearance in the market, and communicated immediately to the gunsmiths, at their several places of residence.

Third section, iron industries.—A prejudice, which fortunately is now dying out, has hitherto classed articles of iron-mongery and of locksmiths' work as not belonging to the artistic industries. This is an error not shared by our rivals. The Germans have established art shools for articles of iron-mongery at Remscheid and at Iserlohn, and they have given a considerable place to works of the locksmith in their art museums at Berlin, Nuremberg, Munich, Dresden, and Hamburg. This section will be organized on the same principle as the first two sections, and will contain typical models and specimens of all foreign, especially German, manufacture.

At the commencement all its efforts and resources will be concentrated on the organization of the above three sections, which interest more particularly the great industries at present carried on in the department.

Subscriptions.—The society comprehends three classes of subscriptions: First, by members called "founders," (*membres fondateurs*), fixed at a minimum of 100 francs; second, ordinary members; minimum subscription, 25 francs; third, associate members; minimum subscription, 5 francs a year.

The foregoing is the organization sketched by M. Marius Vachon, a gentleman familiar with art and manufactures, who has repeatedly been consulted and sent on foreign missions by the French Government in regard to subjects connected with artistic manufactures. The plan is excellently conceived, and well worthy of imitation by other localities in which industries admitting the application to them of art are carried on. It is significant of the progress made in such industries by other nations, and of the danger threatening from their competition that even in St. Etienne such an institution as this library-museum should have become a necessity. For here three hundred years of work and experience have developed a race of artisans in which superior manual dexterity and delicacy of taste seem to have become innate, and one can hardly avoid the conclusion that no center of industrial art can dispense with a museum if in St. Etienne it is found indispensable for the further improvement of its workmen. That a museum of art applied to industry is the best means to complete the education the workman has received during his apprenticeship and in technical schools, there can be no longer any doubt.

OSCAR MALMROS,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
St. Etienne, March 13, 1889.

AGRICULTURAL CONDITIONS IN FRANCE.

REPORT BY COMMERCIAL AGENT GRIFFIN, OF LIMOGES.

In looking over the last report of the French minister of agriculture, it is seen that France ranks second to the United States as a wheat-growing country. Statistics show that in the period comprised within the years 1875–'84 France produced on an average 100,726,674 hectoliters,* against

*1 hectoliter = 2.838 bushels.

158,707,000 hectoliters harvested in the United States. More than one-fourth of the whole surface is given over to the production of wheat and other cereals. In certain departments, where, before the advent of the phylloxera, cryptogamous diseases, and other maladies of the vine, grains were scarcely cultivated at all, the chief attention is centered in cereals. It is true that much of the old vineyard land is too calcareous for the profitable growing of wheat, but, wherever it is possible, the proprietors are doing what they can to make their land produce wheat. France, being discouraged with the vine, is turning more and more attention to the production of her own food supply, and the labor that she is expending in this direction is found to greatly advance her interests. The following statistics given by the minister of agriculture show at a glance the relative position of cereals, and how important a place they hold in French agriculture. It will also be seen how comparatively small are the products of the vine:

TABLE A.— *The agricultural divisions of France.*

Description.	Hectares.*	Per 100†
Land devoted to agricultural products in general:		
Cereals	15,096,066	28.56
Beans, peas, etc	344,052	0.65
Potatoes	1,337,613	2.53
Products used in manufactures, as flax, beets, etc	515,840	0.97
Fodder of different kinds	4,650,511	8.79
Garden vegetables	427,701	0.81
Fallow land	3,643,799	6.89
Total of farming land	26,017,582	49.20
Vines	2,196,799	4.15
Natural meadows	4,115,424	7.78
Grazing land	1,711,116	3.24
Woodland and forests	9,455,225	17.28
Orchard, nurseries, parks, etc	842,033	1.59
Total	18,320,597	34.64
Total of all land under cultivation	44,338,179	83.84
Uncultivated land:		
Waste-land, wilds, and heather land	3,889,171	7.35
Rocky and mountainous regions	1,958,750	3.76
Marsh land	328,297	0.62
Peat land	46,319	0.09
Total of uncultivated lands	6,222,537	11.82
Land devoted to cities, towns, railroads, roads, etc	2,296,483	4.34
Whole extent of territory	52,857,199	100.00

* Hectares of land = 2.47 acres.

† Distribution and proportion to every hundred of the inhabitants.

In looking over the records of the last century we find that there has been a gradual increase of yield per hectare all over France. Perhaps nowhere in the world has there been more careful study how to produce the most wheat on the least ground. There are professors of agriculture appointed by the Government in each department, whose duty it is to study

the nature of the soil, what products can be raised to the best advantage, what fertilizers are best suited, and all that is generally necessary for the farmer to know. Experiment stations are also established in each department, where theories can be practically tested and results shown. Public conferences are held in each commune, where the professor gives general advice to the farmers, answers questions, and lectures on practical subjects. This agricultural schooling has been very beneficial to the agricultural interests. At the experiment station certain facts can be demonstrated which would be hard to prove anywhere else. The happy results of this teaching are readily shown in table B, which gives the average yield per decade for the last seventy years. During the five years which preceded 1816 France was so disturbed by military action that it is unfair to count them; for the same reason 1870 is omitted. The great advancement made in the decade ending 1880 and the fractional decade ending 1885 is also to be noticed, showing clearly the results of careful cultivation.

TABLE B.— *The average yield of wheat per hectare from 1816 to 1886.*

Year.	Hectoliters.*	Difference between the maximum and minimum.	Year.	Hectoliters.*	Difference between the maximum and minimum.
1816 to 1820	1.93	10.22	1851 to 1860	6.49	13.99
1821 to 1830	2.26	11.90	1861 to 1870	5.76	14.28
1831 to 1840	3.58	12.77	1871 to 1880	5.98	14.60
1841 to 1850	6.09	13.68	1881 to 1885	3.79	15.77

*Hectoliter = 2.838 bushels.

It is interesting also to notice the fact that for nearly fifty years wheat has been steadily advancing, while most of the other grains have diminished in importance. Wheat has as much attention as all the other cereals combined.

Corn, which is one of the most profitable crops that can be raised, and which always commands a good price, is diminishing in area of cultivation, the soil not seeming to be adapted to its successful culture.

Meslin is more or less taking the place of rye. It will be better than either wheat or rye alone on poor soil.

Rye is steadily on the decline in all Europe. In England it has almost entirely disappeared. In Belgium it has lost much ground. In Germany and Russia it only holds its own on the poorer lands, while in the other countries of Europe it is greatly decreasing in importance. In France the same marked diminution is to be noted.

Barley is also found to be on the decline, but why is unexplained in the agricultural reports.

Oats, on the contrary, are steadily increasing in importance, and are taking the land that was formerly given over to the above-mentioned grains that are on the decline.

The potato is one of the most valued articles of food. In the production of this crop France ranks third in the world, producing, in 1882, 101,000,000 metric quintals, about double the amount produced in the United States for the same year.

The following table (C) exhibits the average yield of cereals and potatoes for the ten years ending 1887. Table D exhibits the amount of seed sown per hectare and the average yield per hectoliter for the cereals above mentioned, with their value and weight:

TABLE C.—*Average yield of cereals and potatoes for the years 1877–'87.*

Description.	Number of hectares cultivated.	Average yield per hectare.	Total yield.
		Hectoliters.	*Hectoliters.*
Wheat	6,927,730	14.54	102,834,100
Rye	1,767,067	13.82	24,439,674
Barley	1,019,951	17.88	18,233,938
Oats	3,544,785	23.31	82,752,807
Buckwheat	637,590	16.10	10,366,616
Corn	610,846	15.41	9,412,518
Potatoes	1,349,522	68.37	92,927,918

TABLE D.—*Seed sown per hectare, and the average yield of 1 hectoliter.*

Cereals.	Quantity of seed sown per hectare.	Yield of 1 hectare of seed sown.		Value.	Weight per hectoliter.
		Grain.	Straw.		
	Hectoliters.	*Hectoliters.*	*Quintals.**	*Francs.*	*Kilogr'ms.†*
Wheat	2.08	8.64	12.15	211	76.31
Rye	2.25	7.28	10.69	137	71.59
Barley	2.12	8.88	7.26	122	62.43
Mesiin	2.15	8.31	12.08	174	72.87
Oats	2.56	9.83	7.54	106	46.86
Corn	0.45	40.38	32.31	673	72.67
Buckwheat	0.79	21.89	17.64	248	62.71
Millet	0.39	34.39	25.66	435	68.62
Average	2.12	9.25	10.47	167	

*Quintal = 220.46 pounds. †Kilogram = 2.205 pounds.

It is worthy of attention to regard the fluctuations that have taken place in the yearly average price of grain per hectoliter for the last one hundred and forty years. The greatest changes have taken place in the wheat market. By comparing agricultural reports for the different years it is seen that from the years 1756 to 1800 there was a gradual decrease in price, although the fluctuations had been very marked from 1776 to 1785. In 1763 wheat reached its minimum in France, when the price of 9.53 francs per hectoliter was all that it would bring. The maximum was attained in 1817, when it was 36.16 francs per hectoliter, almost four times what it had been fifty-four years before. There is a difference of but 1.91 francs between the years

1785 and 1885. The last-mentioned year the price was 16.80 francs. Since the year 1865 the tendency has been for the price to rise, with a corresponding increase in the value of straw. The twenty years ending 1885 show that there has been an average gain of 46 francs per hectare of grain. It is seen as follows:

Description.	1856–'65.	1876–'85.
	Francs.	*Francs.*
Grains	236	261
Straw	64	85
Total	300	346

The following table (E) gives the average price of food products, fodder, and fuel for twenty years ending January 1, 1887. It is to be noted that there is a general increase in the cost of meat, fodder, and fuel, while other alimentary products are generally on the decline.

TABLE E. — *Average price in francs for cereals, food products, fodder, and fuel for twenty years.*

Description.	1867.	1868.	1869.	1870.	1871.	1872.	1873.
Wheat, per hectoliter	26.08	26.08	20.21	20.48	26.65	22.90	25.70
Meslin, per hectoliter	20.56	21.46	15.97	16.59	20.18	17.56	19.47
Rye, per hectoliter	16.81	18.35	13.29	16.05	16.12	13.55	15.83
Barley, per hectoliter	14.08	15.19	12.18	12.57	14.17	10.95	13.77
Buckwheat, per hectoliter	11.50	12.91	11.02	12.91	12.79	10.98	12.86
Corn, per hectoliter	14.95	17.68	12.53	15.09	17.67	13.35	15.35
Oats, per hectoliter	10.40	11.10	9.57	10.00	11.04	8.30	9.54
Potatoes, per hectoliter	6.74	6.47	4.91	6.52	5.96	5.44	6.80
Flour, per quintal	46.01	49.50	36.84	39.57	47.34	45.39	47.39
Bread:							
First quality, per kilogram	.45	.45	.36	.36	.43	.41	.43
Second quality, per kilogram	.39	.39	.30	.32	.37	.35	.38
Third quality, per kilogram	.34	.35	.29	.28	.32	.31	.33
Beef:							
First quality, per kilogram	1.32	1.35	1.35	1.32	1.46	1.56	1.71
Second quality, per kilogram	1.16	1.21	1.21	1.19	1.32	1.45	1.55
Veal, per kilogram	1.37	1.42	1.57	1.38	1.57	1.68	1.77
Mutton, per kilogram	1.43	1.46	1.47	1.43	1.46	1.74	1.83
Pork, per kilogram	1.44	1.47	1.52	1.51	1.64	1.67	1.63
Hay, per quintal	6.54	7.46	9.03	11.51	12.46	7.16	6.41
Straw per quintal	4.73	4.70	5.02	6.51	7.75	5.32	4.34
Oak wood, per stère*	10.27	10.20	8.99	9.70	10.33	10.69	10.83
Charcoal per quintal	9.09	10.11	11.05	10.40	10.60	10.99	10.88
Coal, per quintal	3.95	3.63	3.89	3.85	4.28	4.21	4.57

*Stère = a cubic meter.

TABLE E. — *Average price in francs for cereals, food products, etc.* — Continued.

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Description.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Wheat, per hectoliter	24.31	19.38	20.64	23.42	23.08	21.92	22.90
Meslin, per hectoliter	20.75	15.37	16.38	18.69	17.97	17.87	18.90
Rye, per hectoliter	17.84	13.52	13.96	15.28	14.56	15.12	15.97
Barley, per hectoliter	15.03	12.16	12.52	13.26	13.51	12.76	13.06
Buckwheat, per hectoliter	13.46	10.67	12.71	13.87	13.11	12.26	13.86
Corn, per hectoliter	16.32	13.91	14.79	16.18	15.18	14.99	15.73
Oats, per hectoliter	11.33	10.65	10.95	10.37	9.95	9.39	9.95
Potatoes, per hectoliter	5.98	4.36	5.91	6.79	6.34	6.78	6.87
Flour, per quintal	45.58	35.74	37.35	42.22	42.67	40.72	42.66
Bread:							
First quality, per kilogram	.43	.36	.37	.40	.41	.39	.41
Second quality, per kilogram	.38	.30	.32	.35	.35	.32	.36
Third quality, per kilogram	.26	.27	.31	.31	.31	.30	.32
Beef:							
First quality, per kilogram	1.59	1.52	1.54	1.59	1.68	1.65	1.59
Second quality, per kilogram	1.44	1.37	1.41	1.47	1.54	1.54	1.46
Veal, per kilogram	1.61	1.53	1.64	1.72	1.80	1.76	1.69
Mutton, per kilogram	1.72	1.66	1.71	1.78	1.85	1.80	1.77
Pork, per kilogram	1.56	1.53	1.65	1.70	1.69	1.59	1.66
Hay, per quintal	7.92	9.64	10.42	7.94	6.69	7.22	8.46
Straw, per quintal	4.76	5.48	6.64	9.77	4.46	4.74	5.43
Oak wood, per stère	10.38	10.68	10.93	11.07	11.24	12.20	11.67
Charcoal, per quintal	9.50	10.61	11.17	11.06	11.13	10.73	11.08
Coal, per quintal	4.56	4.38	4.50	4.46	4.49	4.09	4.17

Description.	1881.	1882.	1883.	1884.	1885.	1886.	Average for 20 years.
Wheat, per hectoliter	22.28	21.51	19.16	17.76	16.80	16.94	21.91
Meslin, per hectoliter	17.77	17.05	15.09	14.74	13.92	13.78	17.50
Rye, per hectoliter	14.84	13.94	12.93	12.65	12.04	11.51	14.68
Barley, per hectoliter	12.31	12.50	11.54	11.69	11.14	10.44	12.74
Buckwheat, per hectoliter	12.05	12.78	11.69	11.19	11.16	10.82	12.22
Corn, per hectoliter	14.53	15.80	14.88	14.75	13.50	12.94	15.01
Oats, per hectoliter	9.58	9.75	9.18	8.98	9.07	8.43	9.87
Potatoes, per hectoliter	5.32	5.97	6.24	5.02	4.99	4.64	5.90
Flour, per quintal	41.25	40.34	37.15	33.98	31.86	32.65	40.81
Bread:							
First quality, per kilogram	.39	.39	.36	.34	.32	.32	.39
Second quality, per kilogram	.34	.34	.31	.29	.27	.28	.33
Third quality, per kilogram	.31	.30	.27	.26	.24	.25	.29
Beef:							
First quality, per kilogram	1.56	1.59	1.63	1.65	1.63	1.58	1.54
Second quality, per kilogram	1.43	1.45	1.50	1.53	1.50	1.46	1.41
Veal, per kilogram	1.67	1.70	1.76	1.77	1.72	1.67	1.64
Mutton, per kilogram	1.77	1.81	1.86	1.88	1.84	1.77	1.70
Pork, per kilogram	1.71	1.69	1.66	1.60	1.54	1.52	1.60
Hay, per quintal	8.97	8.95	8.00	7.46	7.41	7.36	8.34
Straw, per quintal	5.79	5.36	4.79	4.95	4.92	4.94	5.28
Oak wood, per stère	11.32	11.50	10.95	11.19	11.93	11.10	10.87
Charcoal, per quintal	10.86	10.99	10.87	10.96	10.54	10.87	10.66
Coal, per quintal	4.20	4.21	4.31	4.28	4.29	4.00	4.21

All the land of France is divided into five classes, according to its quality. The first class contains 17 per cent.; the second, 22 per cent.; the third, 25 per cent.; the fourth, 20 per cent.; the fifth, 16 per cent. According to the last report made by the minister of finance on the valuation

of unimproved property the average value per hectare of the different classes is shown to be as follows:

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Divisions of the land.	Assessed value per hectare.					General average of all the classes.
	First class.	Second class.	Third class.	Fourth class.	Fifth class.	
	Francs.	*Francs.*	*Francs.*	*Francs.*	*Francs.*	*Francs.*
Cultivated land	3,442	2,644	1,863	1,289	826	2,197.43
Pastures and grass land	4,467	3,374	2,511	1,838	1,218	2,960.92
Vines	3,818	3,003	2,251	1,646	1,118	2,968.24
Wood land:						
Young trees	1,569	1,202	947	725	509	745.13
Old forests	2,330	1,836	1,433	1,116	762	.....

It is surprising to notice in the table above given that what is known as natural meadows and grass land is considered of more importance than that land which is given over for the cultivation of cereals or vines. The reason for this is, that on account of the large importations of grain from other countries, the home farmer, laboring, as he does, under an onerous load of taxes of different kinds, finds it more profitable to raise stock than grain. A glance at table E will show that cereals are decreasing in price while meat products are increasing.

TABLE F.

General divisions.	Number of cultivators.	Total area.	General average of land to one cultivator.	Proportional distribution per 100.	
				Number of owners.	Extent of their land.
Cultivations of less than 1 hectare.		*Hectares.*	*Hectares.*		
Very small areas, 0 to 1 hectare	2,167,667	1,083,833	0.50	38.2	2.2
Cultivations of more than 1 hectare.					
Small areas, 1 to 10 hectares:					
1 to 5 hectares	1,865,878	5,597,634	3.00	32.9	11.3
5 to 10 hectares	769,152	5,768,640	7.50	13.6	11.6
Total	2,635,030	11,366,274	4.31	46.5	22.9
Medium areas, 10 to 40 hectares:					
10 to 20 hectares	431,353	6,470,295	15.00	7.6	13.1
20 to 30 hectares	198,041	4,951,025	25.00	3.5	9.9
30 to 40 hectares	97,828	3,424,330	35.00	1.7	6.9
Total	727,222	14,845,650	20.41	12.8	29.9
Large areas, over 40 hectares	142,088	22,266,104	156.71	2.5	45.0
Total cultivations of more than 1 hectare	3,504,340	48,478,028	13.83	61.8	97.8
Grand total	5,672,007	*49,561,861	8.74	100.0	100.0

*This is without forests belonging to the State.

Another matter worthy of attention is the apportionment of land among the different cultivators. Of the 49,561,861 hectares of land specially devoted to agriculture, it is surprising to note that 45 per cent. of the whole

area is held by 2½ per cent. of the land-owners, and that 38.2 per cent. of the land-owners own only 2.2 per cent. of the ground. The general apportionment is given in table F.

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The final consideration is the important item of wages paid to the farm hands. Labor is carefully classified in France. It is difficult to get anything like general averages, as the workmen make their own bargains, and often, through pride or shame, conceal the true figures. Farm hands are hired by the day, the year, and longer periods of time. Where they are hired by the year they are usually found; that is, they have house, potatoes, some grain, a parcel of land for a garden, and sometimes wine is given. Table G gives the annual rates, while table H gives the average per diem to the laborer, found and not found.

TABLE G.—*The number and average annual wages of farm hands.*

Occupation.	Number.	Wages.
		Francs.
Head farmer	130,022	405
Husbandmen and carters	541,050	324
Herdsmen	113,901	289
Shepherds	83,142	290
Workmen and cheese-makers	8,086	431
Ordinary farm hands	292,231	295
Boys under sixteen	253,786	140
Women, servants	532,026	235
Total	1,954,251	.....

TABLE H.—*Farm hands hired by the day.*

Classifications.	Found.	Not found.	Difference between the wages of laborers found and not found.	
			Difference.	Proportion.
During the winter:	*Francs.*	*Francs.*	*Francs.*	*Per 100.*
Men	1.31	2.22	0.91	69.46
Women	0.79	1.42	0.63	79.46
Children	0.52	0.94	0.42	80
During the summer:				
Men	1.98	3.11	1.13	57.7
Women	1.14	1.87	0.73	64.03
Children	0.74	1.31	0.57	77.02

It will be seen in table H that there is quite a difference between the wages paid during the winter and summer seasons. There is also a great difference between male and female labor, though in many places the women do the same amount of labor as the men. By children are meant all who are under sixteen years of age. After that period they receive the wages of adults.

WALTER T. GRIFFIN,

UNITED STATES COMMERCIAL AGENCY, *Commercial Agent.*

Limoges, March 14, 1889.

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PARAGUAY.

REPORT BY CONSUL HILL, OF ASUNCION,

ON THE HISTORY, GEOGRAPHY, RESOURCES, PEOPLE, PRODUCTS, GOVERNMENT, COMMERCE, ETC., OF PARAGUAY.

HISTORY.

In order to properly appreciate the present condition of Paraguay, the character of its institutions, and its future prospects, a cursory glance, at least, at its past is absolutely necessary. Its history is a record of tyranny and bloodshed without parallel among the nations of the New World. None has, even in this southern soil, so prolific of irresponsible despots, suffered so much as Paraguay from the tyrannical abuse of unrestrained power. In all history no nation has been more completely broken than, and none has so barely escaped utter extinction through the adverse fortune of war as this little sequestered Republic; and yet do-day, scarcely a score of years since the close of the late war waged by Paraguay, single-handed, against the allied powers of Brazil, the Argentine Republic, and the Banda Orientál (Uruguay), the country is on a firmer basis than ever before, and for the first time in its national life can look to the future with complacency and some degree of confidence.

Little or nothing is known of the primitive inhabitants of Paraguay. Even the hazy myths and traditions of a legendary age are almost entirely lacking, and, unlike the Aztecs in Mexico or the Incas in Peru, they have left no monument or memorials of themselves.

Sebastian Cabot, the first white man who ever set foot upon the soil of North America, was also the first to penetrate the vast labyrinth of streams which go to make the River Plate and reach Paraguay. In 1526, thirteen years after Solis had discovered the River Plate, Cabot ascended that broad estuary, and, proceeding up the Paraná and Paraguay rivers, passed by the present site of the city of Asuncion. It was, however, not until 1536 that a settlement was made within the present limits of Paraguay, when Juan de Ayolas, with a company sent out from Spain, built a fort in Paraguayan territory on the supposed route to the gold fields and silver rivers of Peru. This was the foundation of the present capital, named Asuncion from the fact that work in the new settlement was begun on the 15th of August, which, in the Catholic calendar, is the Day of the Assumption of the Virgin. The mixed race, which resulted from a union of the Spanish conquerors and the native women, is that which predominates to-day in the country. As it was out of the question for the ignorant natives to acquire the Spanish tongue, the Spaniards were compelled to learn the language of the conquered people. This Guaraní Indian dialect is the language of the country now, Spanish being confined to the cultivated classes at the capital and larger towns. Spanish alone is taught in the schools, but most Paraguayans, from the President

to the humblest peon, prefer their native Guaraní. The intermarriage of the first settlers with the barbarians in this as well as the other countries of the River Plate, contrary to the policy of the colonists in our own country, who held themselves aloof from their rude neighbors, has had a controlling influence in the destiny of, and accounts for most that is peculiar in, the history of this section of the world.

The complete dominion of the Jesuits, for the one hundred and fifty years succeeding their coming to Paraguay, in 1609, over the plastic minds of these docile and yielding children of the wilderness has left an ineffaceable impress upon the Paraguayan character. Their rule was salutary in many respects, and marked in certain directions by the most beneficent results. They tempered the iron rule of the master class, and, gathering their wards into schools, taught them the principles of Christianity and the arts of civilized life.

While under the rule of Spain the province of Paraguay included all the territory east of the Andes and south of Brazil. But when the Spanish yoke was thrown off, in 1811, the new nations of the Argentine Republic, Uruguay, and Bolivia arose, and Paraguay was left nearly in its present shape.

Succeeding the Spanish dominion came a despotism under Gaspar Francia, which forms one of the darkest chapters in the history of nations. This Francia was at first invested jointly with several others with the control of governmental affairs, but by his machinations he finally consolidated all the power in himself. His colleagues soon found it convenient to retire, and thereupon we find Francia named consul. In 1814 he was declared dictator for five years, and in 1816 supreme and perpetual dictator of Paraguay. From this time until the tyrant's death there is nothing that can be called history. The gloomy, blighting figure of Francia casts a shadow on country and nation. He closed the ports to the outside world, and neither allowed his people to go out from, or strangers to come into, the country. At home a most thorough and perfect system of espionage was in operation. He discouraged agricultural pursuits, put commerce under the ban, and ruled in accordance with his own arbitrary will, without the slightest regard to established forms. The fitful glimpses which we gain of this period from the pages of Reugger and Robertson, foreigners, who, after long detention, succeeded in leaving the country, reveal a very reign of terror. The prisons and dungeons were constantly filled, and the lives and property of all were at the mercy of this modern Caligula. In his latter days, haunted by a constant fear of assassination, he lived the life of a moody, lonely tyrant, consigning to death or exile all who aroused his hatred or jealousy.

Upon the death of Francia in 1840 two consuls were chosen to conduct the government, one of whom was Don Carlos Lopez. In 1845 Lopez was elected president for ten years, and at the end of that time was re-elected. He possessed and exercised as absolute power as Francia before him, but his rule was marked with little cruelty, and his policy was far more enlightened. He at once broke up the isolation from the rest of the world, which seems to

have been his predecessor's chief aim, cultivating friendly relations with other nations and inducing the entrance of foreign capital and labor to aid in the development of the country. Slavery was abolished, a newspaper established, a railway (the first in South America) begun, and a line of fortnightly steamers between Buenos Ayres and Asuncion put into operation.

It was during the dynasty of the first Lopez that the United States began its acquaintance with Paraguay, and in this wise: In 1845 an American named Edward A. Hopkins arrived in Asuncion as a sort of special agent of his Government, sent out, in accordance with the general policy of the great Republic of giving early recognition to the South American republics, to felicitate Paraguay upon her adoption of a republican form of government, and with the intention of recognizing her existence as an independent power whenever it should be deemed expedient so to do. The career of Mr. Hopkins is a part of the history of the country since that day, and the name of no American is better known on the River Plate. Under the encouragement of Lopez, and through the personal efforts of Mr. Hopkins, a company of American capitalists, for commercial and manufacturing purposes, was organized, with a charter from the State of Rhode Island, corresponding rights and privileges being guarantied by the Paraguayan Government. The company, entitled "The United States and Paraguayan Navigation Company," commenced operations with Mr. Hopkins as general agent at San Antonio, near Asuncion, in 1854. A treaty had been concluded between the United States and Paraguay the previous year, and Mr. Hopkins had in the meantime been appointed consul at Asuncion. For a time the company prospered greatly, and all went swimmingly, but its very success caused its downfall. Exciting the fear and rousing the cupidity and hate of the tyrant, who could brook no power not his own, the business of the company was stopped, its property and lands confiscated, and the lives of all the members put in jeopardy.

Early the next year the United States exploring expedition under Capt. Thomas J. Page, U. S. N., charged with the exploration of the La Plata and its affluents, which had just been opened to free navigation, reached Paraguay. The Paraguay River was thoroughly explored by this able officer, and the upper Paraná would have been also had not a misunderstanding arisen as to the right of the gun-boat to pass a certain channel under the guns of a Paraguayan fort, entrance to which was interdicted to all but their own vessels. The *Water Witch* was fired upon and the man at the helm killed. Ample reparation for this outrage was afterwards made to the Government of the United States.

In 1862 Carlos Antonio Lopez died and was succeeded by his son, Francis Solano Lopez, the worst of the human scourges which have desolated and depopulated South America. While a young man he had been sent by his father to France and England, where, dazed by the glamour of court life, he imbibed the idea of founding a Napoleonic dynasty in these western wilds. On his accession to power, urged on by his paramour, Madame

Lynch, whom he had brought back with him from France, he lost no time in carrying into effect his imperial designs. By his high-handed and unwarrantable conduct he succeeded in involving his country in a senseless and causeless war with the allied powers of Brazil, the Argentine Republic, and the Banda Oriental. The Paraguayans fought with a valor born of desperation for five long years — 1865 to 1870 — and were finally conquered when there were no more men to fight. Of the enormities and atrocities committed by Lopez, almost exceeding belief, this is no place to speak. When the miserable wretch was killed, while seeking to escape from his foes, in the latter part of 1869, the war ceased; but the country was ruined and the Paraguayan people almost extinguished. It has been estimated that of the 800,000 people in Paraguay at the beginning of the war, 700,000 — nine-tenths of the entire nation — had perished. Surely, this was a war of extermination unparalleled in the annals of the human race. We have here the spectacle of the bloodiest and most destructive conflict South America has ever seen, without a speck of principle involved, and the immolation of an entire people upon the altar of a semi-savage's unholy ambition and lustful greed of power.

After the death of Lopez the country was completely in the possession of the allied forces, the Brazilian occupation lasting until 1876. On November 24, 1870, a convention adopted a constitution for the country and elected Cirilio Rivarola as first constitutional President of the Republic. The list of Presidents is as follows: November, 1870, Cirilio Antonio Rivarola; December, 1871, Salvador Jovellanos; November, 1874, Juan Bautista Gill; April, 1877, Higinio Uriarte; November, 1878, Candido Bareiro; September, 1880, Bernardino Caballero; November, 1886, Patricio Escobar.

For fifteen years subsequent to the cessation of hostilities Paraguay lay prostrate, and nothing but the rivalries of her neighbors preserved her separate national existence. But within the last three years a new spirit has come over the country. Mainly through foreign capital and enterprise she has at last roused herself from her lethargy, and the shadows of the long night are rolling away before the coming of the dawn.

GEOGRAPHICAL SITUATION.

A glance at the map will suffice to show the position of this blunt, wedge-shaped little country, about the size of the State of Oregon, imbedded, as it were, in Brazil, washed on either side by a great stream of continental size, the Paraná River on the east and the Paraguay River on the west; crossed in its northern part by the tropic of Capricorn, and situated 1,300 miles from the Atlantic sea-board, in the very heart of South America. It lies between the parallels of 22° 4′ and 27° 35′ south latitude and 54° 32′ and 58° 40′ west longitude (Gr.). On the north it is separated from Brazil by the Rio Apa; on the east the boundary line between the two countries is formed by the Sierras of Amambay and the Paraná River; on the south the same river divides it from the Argentine provinces of Missiones and Corrientes, while

the Paraguay River flows between it and its western possessions and the Argentine province of Bermejo.

The western division, or the Gran Chaco, as it is generally called, is a vast and almost unexplored territory, in shape an equilateral triangle, with the base on Bolivia and sides formed by the Pilcomayo and Paraguay rivers, the apex being at Asuncion, where the Pilcomayo joins the Paraguay. Ever since the readjustment of boundary lines, consequent upon the rise of these new states after their successful revolt from Spanish rule in the early part of the century, this region had been the subject of conflicting claims on the part of the governments of the Argentine Republic and Paraguay, and not until 1878 was the question of territorial limits finally settled, when, by the arbitration of the President of the United States, to whom the matter was referred for decision, the vast area of the Chaco from the Rio Verde was awarded to Paraguay. It extends from the Pilcomayo on the south to the Baia Negro on the north. The northwestern boundary is undetermined, the Bolivians and Paraguayans disputing the proper location of the line. No complete survey has as yet been made of this section, but its extent can not, in the opinion of those most competent to judge, be far from 70,000 square miles. It is entirely in the possession of nomadic tribes of warring Indians, and contains but two settlements, one at Villa Hayes, 9 leagues above Asuncion, near which there is a prosperous German colony, and the other at Fuerte Olimpo, near the northern boundary, and almost exactly upon parallel 21°. Until recently the Chaco has been considered to be an uninhabitable waste of morass, lowlands, and lagoons. A partial survey, undertaken lately by a very competent surveyor, has shown this judgment to be as clear a fiction as was that of the "Great American Desert" of our geographers thirty years ago. Within the last two years these lands have risen enormously in value and have become a favorite investment in Buenos Ayres and the other realty markets of the River Plate. A very favorable concession has been granted to a company of capitalists for the construction of a line of railway from Asuncion, through the Chaco, to Sucre, Bolivia, a distance of 600 miles. Plans have been perfected and the survey begun. The project has the hearty co-operation of both governments, which have always desired the realization of this important undertaking, and under the present favorable auspices it may be expected that the road will be built. This will open up the Chaco to settlement, and it is not impossible that the part of Paraguay west of the river may in future years prove to be the better half of the country, and eventually, on account of its greater resources, become the predominating power in the destinies of the Republic.

At the end of the war of 1865–'70 Paraguay was stripped of a portion of her fairest lands, 1,329 square miles of her territory being ceded as a war indemnity to Brazil. The provisions of the treaty of March 26, 1872, fixing the limits are as follows: "The bed of the Paraná River, from the mouth of the Yguazú (latitude 25° 30′ S.) to the Salto Grande (latitude 24° 7′). From these falls the line runs (about due west) along the highest divide of

the Sierra de Maracayú to the termination of the latter; thence as nearly as possible in a straight line (northward) along the highest ground to the Sierra de Amambay, following the highest divide of that sierra to the principal source of the Apa, and along the bed of that river (westward) to its junction with the Paraguay. All the streams flowing north and east belong to Brazil, and those south and west to Paraguay." Paraguay was thus forced to give up the very portion of her territory so long claimed by Brazil, the northern limit of which was the mouth of the Rio Blanco, 80 miles above that of the Apa.

The treaty of limits concluded between Paraguay and the Argentine Republic and signed at Buenos Ayres on February 3, 1876, was also a surrender on the part of the former of the old claim to the territory lying between the Pilcomayo and the Bermejo, now forming the Argentine province of Bermejo, and governed by a military governor at Formosa, the capital. By the treaty the part of the Chaco between the Baia Negro and Rio Verde was acknowledged to belong to Paraguay. The second section, from Rio Verde to the Pilcomayo, was afterwards by arbitration, as has been said, declared to be Paraguayan territory.

CONFIGURATION AND PHYSICAL CHARACTER.

In considering the relief of the country, the general level of the lowlands in the west and of the Chaco may be taken to be 250 or 300 feet above that of the sea, and no part of the country appears to be much higher than 2,000 feet. The eastern or Paraná side of Paraguay is, however, much higher than the western. A chain of heights, termed the Cordillera, runs southward through the middle of the country parallel to the Rio Paraguay and the Alto Paraná, ramifying east and west in some districts. A mass of elevated land in the west, isolated from the central chain by the lowlands of the Tebicuari and the Manduvira rivers, and another plateau in the south in the Missiones are the chief elevations besides those of the Cordillera. The northern portion of what is termed the Cordillera has no title to this name, since it proves to be distinctly a southern continuation of the broad plateau of Brazil. This plateau of San José Amambay is about 2,000 feet high, and has a western declivity sloping to the Paraguay River. In the center of the country the heights are named the Cordillera of Caaguazú. Further south the Cordillera of Villa Rica extends from the head of the basin of the Tebicuari to the bluffs of the Rio Paraná at Encarnacion. In latitude 24° an extensive branch of the main stem trends to the east, and crossing the Paraná forms the grand cataract of Guayrá. The southeastern portion of the country is the region of the *esteros*, or low swamp lands, the abode of herons, storks, and snakes.

RIVERS AND WATER COMMUNICATION.

The position of Paraguay, between the rivers Paraguay and Paraná, far distant from the sea, quite corresponds, as has been felicitously said by Consul Baker, of Buenos Ayres, to that of the State of Illinois, whose southern

boundary is at the junction of the Ohio and Mississippi rivers, and a thousand miles from the Gulf. But although it has, like Bolivia, no sea-board, there is a certain compensation in its great fluvial system. From Buenos Ayres one steams up the broad estuary, miscalled the River Plate, past the confluence of its great sources, the Uruguay and Paraná rivers, which meet 40 miles above the city, and ascends the Paraná River 800 miles to its junction with the Paraguay, at Tres Bocas, a score of miles above Corrientes. Thence Asuncion is reached by traversing the Paraguay River 300 miles.

The Paraná.—In volume the Paraná is a giant stream. It rises in the mountains of Goyaz, in Brazil, in latitude 16° 30′ S., and has a length of 2,043 miles from its source to its junction with the Uruguay in forming the estuary of the La Plata. It is divided into the following sections:

Sections.	Length.	Average width.	Average depth.
	Miles.	*Yards.*	*Feet.*
1—San Fernandino to Corrientes	676	2,400	90
2—Corrientes to Yguazú	492	1,500	70
3—Yguazú to Falls of Guayrá	210	1,200	.....
4—Guayrá to Goyaz	665	1,500	.....

It is navigable up to Corrientes all the year round, the current running 3 miles an hour and the fall averaging 4 inches to the mile. The upper Paraná, that part of the river above Corrientes, is navigable for small steamers up to near the Falls of Guayrá, the highest point, at 24° 30′, reached by the Brazilian gun-boat *Tacuray*, in 1874, being considered by Keith Johnston the limit of the navigation of the Paraná from the ocean.

These falls have twice the volume of water of Niagara, and are produced by the contraction of the river from a width of 4,470 yards into a gorge of 65 yards, the water making a plunge of 56 feet. The principal affluents of the Paraná in Paraguay are the Acaray and Monday rivers.

The Paraguay.—The Paraguay River rises in the Seven Lagoons, in Brazilian territory, in latitude 13° 30′ S. and longitude 59° 2′ W. Leaving this table-land, which forms the water-shed between the Amazon and La Plata River systems, it flows southward through the Brazilian province of Matto Grosso, becoming navigable at Corumbá, and thence by the Paraguayan towns of San Salvador, Concepcion, Asuncion, Pilar, and Humaitá. Its length to its confluence with the Paraná, in latitude 27° 20′ S. and longitude 58° 30′ W., is about 1,800 miles. Its average width is 360 yards, its mean depth 20 feet. The current runs 1 mile an hour or 90 feet a minute, the fall being 10 inches per mile from its source to Asuncion. The volume of water is but one-twentieth of that of the Paraná. The Paraguay is navigated by mail steamers to Corumbá, 967 miles above Tres Bocas, while steamers of lighter draught ascend 210 miles higher to Villa Maria. The principal affluents in Paraguay are the Apa, which forms the northern boundary from Brazil; the Aquidaban, the Ipané, the Jejuy, and the Tebicuari. On the

Chaco side the principal tributary is the Pilcomayo, which, rising in Bolivia, falls into the Paraguay near Asuncion, after a course of about 1,600 miles. This great stream, which forms the boundary line between the Paraguayan and Argentine Chacos, is almost unexplored. The little accurate information regarding its direction and character is gained from the expeditions of Father Patino, in 1791, and Lieut. von Nivel, in 1844. Lower down, on the same side, the Bermejo debouches into the Paraguay after flowing a distance of 1,300 miles from its source in the highlands of Bolivia. Its course has been frequently explored and accurately determined. It is an extremely tortuous stream, but its depth is nowhere less than 5 feet. Both the Pilcomayo and Bermejo rivers must some day be great highways of commerce and afford an outlet at the Atlantic sea-board for the rich natural resources of undeveloped Bolivia.

The Jejuy and Tebecuari.—The Jejuy and Tebecuari, in Paraguay, are navigable. Vast quantities of yerba are transported on the former from the "yerbales" in the interior. Flat-bottomed boats traverse the latter from its source, near Villa Rica, laden with the produce of the country, while great rafts of the illimitable and magnificent forests of Paraguay are floated down to its mouth. All these rivers and their tributaries go to make up the La Plata, the water-shed of which covers an area of 1,500,000 square miles, the largest in the world after the basin of the Amazon; the greater part of this vast basin being, it must be remembered, situated in the temperate zone.

RIVER STEAM SERVICE.

The river service is excellent. The largest company is the Platense, which, in the last few years, has absorbed most other companies on the Paraná and Uruguay rivers. It is an English company, with main offices in Glasgow. Their fleet consists of nearly one hundred boats, the finest, the *San Martin*, *Olympo*, and *Cosmos*, were built on the Clyde at a cost of nearly $300,000 each, are lighted with electric light, elegantly fitted up, and in many respects equal to the best Mississippi River boats. The run from Buenos Ayres to Asuncion, the termini of the Platense line, is made in five or six days. Ninety sailing hours are required for the trip up the river and seventy for the return to Buenos Ayres. Freights are very high, being $10 per 40 feet from Buenos Ayres to Asuncion; passengers, $60; no round-trip tickets sold.

The *Compania Brasilera*, the only rival of the Platense, runs a line of fine boats from Montevideo and Buenos Ayres to Corumbá, the capital of the Brazilian province of Matto Grosso, a distance of 1,986 miles from Buenos Ayres. These steamers call at all the principal river towns. Besides these two regular companies there are hosts of private steamers and other small lines. One of the latter sends steamers at fixed intervals to Cuyaba, Matto Grosso, 2,504 miles from Buenos Ayres. Steamers of one company or another leave Buenos Ayres for Paraguay and above on an average of one every two days.

The question of direct communication with Europe has been much agitated of late years, and is recognized by all intelligent men as vital to

Paraguay's prosperity, and, perhaps, long-continued existence as an independent state. Unless this is solved favorably, Paraguary will always be dependent upon the Plate republics, which control her only outlet, and in whose power it lies to hamper or to destroy her commerce by direct or indirect taxation. The cost of reshipment from the ocean liners to the river boats at Montevideo and Buenos Ayres adds much to the cost of freights, and renders all imports much higher than the same articles at Rosario. Messrs. Lamport & Holt and other well-known shipping firms have had the matter under consideration, but the cost of building ships drawing not more than ten feet of water for this special service will probably deter any company from making the venture without the most complete investigation and a certain assurance of financial success.

FAUNA AND FLORA.

Fauna.—The felidæ comprise the jaguar or ounce, the puma or American lion, and the ocelot. The peccary, tapir, armadillo, and ant-eater are found. The carigueibaju, known in commerce by its fur under the name of the nutria, is a web-footed carniverous animal the size of the cat. The capybara, giant of rodentia, or carpincho, a cross between the hippopotamus and the hog, frequents the rivers. Four species of deer flourish, and the ñandú, or American ostrich, is abundant. The Chaco is infested with wild cats, boars, myriads of insects, and tarantulas. The rivers swarm with caimans (in Guaraní yacaré), and otters are seen along the banks. The forests are filled with monkeys. Common bats and vampires fly about the woods. Of predatory birds there are vultures, hawks, and buzzards. Partridges, of which there are two species, pheasants and ducks, rheas, guazupytas, and a wader, the giant stork, are additional attractions to the sportsman. The streams abound in fish.

Flora.—The flora is similar to that of the Argentine Republic. Of medicinal drugs we find copaiba, rhubarb, sassafras, jalap, sarsaparilla, nux vomica, and licorice. Orchids and other parasitic plants are numerous. The mais del agua, resembling the Victoria regia, is the largest flowering plant.

CHARACTER AND EXTENT OF LANDS.

After the death of Lopez a survey was made in 1870, when the lands were found to be as follows, in miles:

Arable lands, 42,600; mountains and forests, 27,000; yerbales, 5,040; total public lands, 74,640; private, 15,360; grand total, 90,000 miles.

The area of cultivated lands in 1881 was less than that of 1863, the following comparison showing the difference:

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Description.	1863.	1881.
	Acres.	*Acres.*
Maize, etc	349,000	206,000
Mandioca	110,000	120,000
Tobacco	23,000	10,000
Sugar	25,000	20,000
Cotton, rice, etc	43,000	46,000
Total	550,000	402,000

It is estimated that there are to-day 500,000 acres under cultivation.

During the period just antecedent to the war three-fourths of the lands belonged to the Government, most of which had been confiscated from the Jesuits on their expulsion. There were few landed proprietors, the Government preferring to grant the lands at a nominal rent to the cultivators. Urged on by their imperious necessities the Government has disposed of the public domain in accordance with the terms of the following act:

The Paraguayan land law passed by the Congress and Executive of Asuncion in July, 1885, stipulates as follows:

ARTICLE 1. The Executive may sell public lands at prices not less than those laid down as follows per square league (the square league being 5,000 x 5,000 varas) of 4,500 acres, English:

(1) Lands between the Tres Bocas and San Salvador, in Paraguay proper, at 1,200 per square league.

(2) Those in Paraguay proper, but north of San Salvador, and those in the ruined Jesuit missions, at $800.

(3) Those in the Gran Chaco, between the Pilcomayo and a line abreast of Concepcion, within 10 leagues of the River Paraguay, at $300.

(4) Lands over 10 and not over 20 leagues from the River Paraguay, as high as Concepcion, and those facing the river northward from Concepcion to the Bolivian frontier, at $200.

(5) All other lands, such as those on the Pilcomayo, or more than 20 leagues inland from the River Paraguay, at $100.

ART. 2. Buyers shall pay one-fourth cash, the rest in three yearly installments, with 6 per cent. interest per annum. Those who prefer to pay cash will be allowed 12 per cent. discount per annum. Payment may be either in money or in public funds at par.

ART. 3. Any buyer of 10 square leagues in the Gran Chaco will be allowed a reduction of 50 per cent., if within three years he establish twenty-five European families, in all seventy-five souls, on the land.

ART. 4. Persons preferring to rent lands from Government may obtain them at 10 per cent. per annum of the foregoing prices.

ART. 5. Any company will receive a free grant of 25 square leagues on binding itself to introduce one hundred and forty agricultural families within four years.

ART. 6. No one person can buy more than 100 square leagues, nor have more frontage than 10 leagues on a navigable river.

ART. 7. All lands are sold subject to the right of making roads or railways through them without indemnity, unless for houses or fences pulled down.

In the above law the $ peso, now worth 70 cents, is meant.

MINERAL RESOURCES.

There can be no doubt that the Paraguayans have been and are prone to exaggerate the importance of the mineral resources of the country. It is true that in the time of Lopez iron mines were worked and foundries for casting cannon were established at Ibicuy. But it must be borne in mind that the material and labor cost Lopez nothing, he having the same resources that enabled the Egyptian rulers of old to heap up the pyramids. Professor Lindner, of the National College, has examined specimens of ore from this region, and reports that the percentage of iron is so small that it would not pay to work the mines with free labor. He makes the same discouraging remarks concerning specimens brought him for analysis from other parts of the country.

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It is said that gold has been found, and there is no doubt that considerable deposits of copper exist. I hear nothing said of silver. The marble quarries, producing all kinds except pure white, are thought to be inexhaustible. Much fine building stone is found throughout the country, as well as a good quality of clay. The truth is, there is as yet no reliable information in regard to the mineral resources, no person of scientific attainments having devoted any attention to the subject. It seems to be admitted that Paraguay, like Uruguay, has no coal deposits of importance. Her most abundant supplies of the best timbers in the world are a great compensation for this lack of coal. The lack of salt caused much suffering in the ranks of the army during the war.

WOOD AND TIMBER.

Paraguay is exceedingly rich in woods. It has been estimated that there are seventy woods suitable for building purposes, sixty-nine medicinal, forty-three ornamental, fifteen dyeing, thirty-eight fruit, and eight fibrous. Last year 500,000 meters of hard wood were exported. Nearly all these splendid woods are so dense that they will not float. Their average gravity is 70 pounds per foot.

Quebracho is one of the finest of the hard woods. It is of two kinds, red and white, the former being the more valuable. This tree grows to a height of 80 feet, and requires one hundred years for maturity, when it measures 30 inches in diameter. Quebracho is shipped to France, where it is used for tanning and coloring. It sells at $14 a ton for export at Buenos Ayres.

In 1886 there were 5,000 hides tanned here, quebracho and curupuy being used. Quebracho weighs 84 pounds per cubic foot.

The sapacho, belonging to the vignonia family, rises to a height of 100 feet. The timber is equally good for building and cabinet work.

The urundey grows high, giving logs 60 feet long by 24 inches square. Posts of this wood have been known to last two hundred years in the ground as uprights for houses without showing signs of decay.

The algarrobo or carob tree is one of the most valuable, not only for its timber but also for its fruit and foliage, which are much used for fattening

cattle. The natives of the remote provinces distil a sort of beer, which they call "chicka," from the algarrobo pods.

The fruits of the arahan and nangapare are pleasant and nutritious.

The tatané, or *palo amarillo*, is a large mimosa, well suited for making furniture. Red and white cedars flourish, attaining a height of 160 feet, with trunks 5 feet in diameter. The wood takes a beautiful polish. The timbó is remarkable for the size of its trunk, which is often scooped out for canoes. It also produces a fruit which serves for soap. Palms, including the caranday palm (*copernica cerifera*), and the bamboo grow everywhere. The firm texture of the palo amarillo, morosimo, tataiba, and palo de rosa peculiarly adapt them to the purposes of the cabinet-maker. The seringer yields india-rubber, and the palo santo gum guaiacum. One species of cactus furnishes the food of the cochineal insect. From the curuguatá, which belongs to the aloe family, ropes, nets, etc., are made.

Paraguayan timber has always found a ready sale at Buenos Ayres and other ports, but the question of transportation has limited the export. Better railway communications and a service of tugs and barges on the rivers would greatly reduce freights. Steam saw-mills to convert the timber into lumber before shipment are also a great desideratum.

CLIMATE.

It is claimed by some writers that the four seasons of the temperate zone are well marked here. This is certainly erroneous, there being but two seasons, summer and winter, and nothing which corresponds to the spring and autumn of our northern latitudes. Summer begins with October and extends to March, which is the last of the summer months. The hottest months are December, January, and February, while June, July, and August are the coldest of the winter season. As a rule April is the most temperate month of the year. From observations taken by Mr. Henry Mangels, German vice-consul, for a number of years, the medium temperature of the year has been found to be 75.85° F. The same gentleman has ascertained the average rain-fall to be 1,600 millimeters. In 1877 a rain-fall of nearly 9 feet was recorded.

During the longest day the sun shines thirteen hours and thirty-four minutes, the shortest eleven hours and twenty-six minutes. In the seven years from 1877 to 1883 it was found that there averaged each year seventy-nine rainy, seventy-two cloudy, and two hundred and fourteen clear days.

The Paraguayan winter is marked by heat rather than by cold. There have been few days during this last winter when the sun's rays near noontide have not admonished one to seek shelter. Still, frosts often nip the coffee plants and banana trees. On an average there occur ten frosts per year, and ice of considerable thickness sometimes forms in the country. The months of June and July were very cold this year. On the 2d of the former month the thermometer fell to 36.9° F. On the 17th of August, another cold day, the mercury registered 39.8° F. These were quite like raw October days in Minnesota. There are no stoves in the country, and it is a

curious sight to see people of wealth sit bundled up and shivering in their houses.

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The medium temperature in the five years from 1877 to 1881 was 24.36 Cent., varying between 24.02 and 25.12. This medium is found by minimum and maximum taken in a shady place. I will mention at this point that the average temperature, calculated from three observations, as generally is done, at 6 or 7 in the morning, 2 and 7 p. m., would surely give a higher result, for the sunbeams are already very strong from the beginning of the day and continue to be so till the evening, so that the really cool hours during the night are but few.

The difference between minimum and maximum is very great, and especially during the winter months. Mr. Mangels, whose observatory has during the last few years been provided with special instruments by Dr. O. Doering, at Cordoba, has not taken the conclusions of the data collected, and therefore I am only able to state particulars with regard to the year 1881. The altitude was: January, 19.37; February, 13.75; March, 18.75; April, 17.50; May, 19.37; June, 24.37; July, 23.75; August, 26.87; September, 21.25; October, 20.00; November, 17.50; December, 19.37.

In the five years (1877–'81), there was an average of forty-two days with a medium temperature of less than 18.75 (15 R.) and ninety-four days with 31.25 (25 R.). The total of the frost was 50, varying from 3 to 16 in the year. Most of the frosts fell in the month of August, as the following figures for the five years show: August, 17; June, 12; July, 9; May, 7; September, 3; October, 2; total, 50.

Regarding the wind, rain, etc., Mr. Mangels has stated during the five years, as an average per year: South wind, 116.4 days; east wind, 44.4; north wind, 103.4; west wind, 3.8; and calm, 97.2 days.

The yearly average of the barometro was 758.9^{mm}, and the average of the higometro 82.4 per cent. in 1881 and 77.7 in 1880; the years before these observations were not made.

The most interesting chapter is the rains, and with regard to these we have the details of nine years' observation. The quantity of rain may be estimated by the following table:

	Millimeters.		Millimeters.
1877	1,478	1882	1,457
1878	2,613	1883	1,145
1879	1,584	1885	1,337
1880	1,574	1886	1,274
1881	1,668	Average	1,570

In these ten years there was no month without rain, the most in one month being 610^{m}, the least 5^{mm}, the average 130.9^{m}. June, July, August, and September do not attain 100^{mm}, and the rest is between 182 to 145^{mm}, which shows a great difference between the summer and winter time.

That there is a great difference in the rain-fall in the same month in different years is shown by the following table, expressed in centimeters:

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Months.	1877.	1878.	1879.	1880–'81.	1882.	1883.	1885.	1886.
January	31	38	21	12	14	4	9	11
February	31	61	3	13	7	12	5	12
March	12	18	23	32	21	11	5	18
April	24	44	10	3	5	7	25	18
May	61	6	19	20	15	15	28	4
June	11	8	14	6	23	5	2	9
July	91	7	7	10	9	1	5	4
August	41	14	3	13	12	0.5	7	2
September	15	10	2	4	37	16	19	8
October	13	18	19	16	14	9	4	15
November	25	20	10	15	7	20	21	15
December	26	13	22	8	20	8	18	6

For days of rain the average is 84; 93 being the most, in 1880 and 1878, the least 70, in 1877.

The following table shows the range of the thermometer during the year 1886:

	Maximum.	Minimum.		Maximum.	Minimum.
January	99.1	69.8	July	90.5	46.7
February	96.8	65.8	August	94.2	48.8
March	93.7	62.2	September	89.6	48.7
April	88.1	54.5	October	96.8	53.6
May	88.2	46.7	November	94.2	60.8
June	86	44.7	December	96.8	64.4

In January of this year (1888) the thermometer reached a maximum of 97° on six different days. The climate, far from being unwholesome, as is the current opinion in the United States, is remarkable for its salubrity. Indeed, Paraguay enjoys a reputation as a sanitarium all over this part of South America. The hotels at Asuncion have been crowded all winter with invalids from Buenos Ayres and Montevideo. Dr. Stewart, surgeon-general of the Paraguayan army during the late war, and now British vice-consul at Asuncion, speaks as follows:

If the absence of the principal zymotic diseases — yellow fever, typhus and typhoid, cholera and dysentery, which are all more or less endemic, or appear epidemically in Brazil and in the River Plate — has any relation to climate, then that of Paraguay is very highly favored, those diseases being almost unknown here. The only diseases which may be considered endemic in certain districts are goitre and *elephantiasis gracorum*. The former is popularly attributed to the water, and the latter, considered more or less contagious, has hitherto been unaccounted for. As for Europeans, they enjoy good health in Paraguay; but it is necessary to live temperately and to avoid too much exposure to the summer heat, although sun-stroke is remarkably rare. I think natives suffer more from heat than Europeans. Vaccination is made compulsory by law, and there is no case of small-pox in the whole country at this moment. Before vaccination was obligatory, small-pox made great ravages all over the country.

Mr. Washburn, after a residence of seven years in Paraguay, says that it is probably as healthy a country as any in the world. In this judgment I quite concur.

I have found it impossible to do anything in the way of vital statistics. The general impression prevails that the births of males far exceed those of females, and this must be so inasmuch as the great preponderance of the female portion of the population, noted and commented upon by all observers just after the war, has almost entirely disappeared; and of the male portion of the population a large majority consists of young men born since the suspension of hostilities.

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DIPLOMATIC RELATIONS.

The Argentine Republic, Uruguay, Bolivia, Brazil, and Spain have legations in Asuncion, and France, Germany, Portugal, Great Britain, Chili, and the United States are represented by consulates. The United States has, I believe, had no minister resident in Asuncion since the departure of General McMahon in 1870, at the close of the Paraguayan war. During the war, and before its outbreak, 1861–'69, Charles A. Washburn served as minister resident of the United States at Asuncion. His "History of Paraguay," compiled during that period, is yet the best book on Paraguay extant.

GOVERNMENT.

The constitution of the country is modeled after that of the United States, and, like its exemplar, divides the powers of the government into three branches—legislative, executive, and judicial. The legislative branch consists of two houses, viz, the Senate and the House of Deputies. Members of each body are elected upon an apportionment of the population, one senator being allowed for every 12,000 inhabitants and one deputy for every 6,000 inhabitants. The senators are elected for six and the deputies for four years.

The executive power is vested in a President, to be succeeded in case of death or disability by the Vice-President. The President is elected by the houses of Congress and serves for four years. He is not eligible for re-election until after an interval of two terms. The President is assisted by a cabinet of five ministers.

The supreme court, consisting of three judges, forms, with courts of inferior jurisdiction, the judicial branch of the Government. The Republic is divided for purposes of internal administration into twenty-three departments or districts, which are governed by chiefs (*gefes politicos*), justices of the peace, and boards of commissioners. It will readily be inferred that the Government is strongly centralized. The Government at Asuncion passes upon the most trifling matters of local administration.

The salaries of all public officials are fixed by statutory enactment. The President receives $800 per month, besides a liberal allowance, while the cabinet ministers, members of the Congress, and superior judges receive $250 per month each.

POPULATION.

The census of 1857 gave a population of 1,337,449 inhabitants, a figure undoubtedly double the real number. Mr. Washburn, minister resident of

the United States at Asuncion from 1861 to 1868, has estimated the population before the war at 800,000 souls. This is probably very near the truth. According to the census taken under the auspices and control of the Government in 1886, the population consisted of 239,774 sculs, of whom 100,262 were males and 139,512 females, showing a preponderance of the females over the males of 38 per cent. The great difficulties attending a work of this character render it impossible to obtain absolutely reliable statistical returns, especially from the parts of the country remote from the centers of population, but these figures may be taken as approximately correct. The present population of Paraguay may be set down as about 300,000 souls, the ratio between the sexes being about two to one in favor of the females. In the United States the ratio between the sexes is about equal, there being five hundred and four females out of one thousand. It is undoubted that the female portion predominated to an alarming extent just after the close of the war, but the reports that there are now eight or nine females to one male are gross exaggerations and entitled to no credence whatever.

The enumeration given above does not include the Indians, most of whom dwell in the Chaco in a state approaching more or less to primitive barbarism. Their number has been estimated at 130,000.

Of the population the Argentines number about 5,000; Italians, 2,000; Germans, 700; Brazilians, 600; Spaniards, 325; French, 300; Orientales, 200; English, 100; Portuguese, 120; Swiss, 120; Austrians, 60; North Americans, 30; Greeks, 30; Bolivians, 20; Danes, 6. Altogether there are doubtless 3,500 Europeans in the country, Italians and Germans leading, as is seen above.

Comparing population to area we find in Paraguay one man to every 3 square miles, against four hundred and fifty-one men to a square mile in Belgium, three hundred and eighty-nine in England and Wales, and three in the Argentine Republic and Brazil, respectively.

The population, according to departments (official census, 1886), is as follows:

	Population.		Population.
Villa Concepcion	10,902	Villa Encarnacion	6,548
Villa San Pedro	12,024	Santa Rosa	9,419
Arroyos y Esteros	13,615	Ibicuy	7,080
Piribebuy	8,902	Quiindy	10,686
Itacuruby	12,046	Carapeguá	15,344
Ajos	5,631	Piruayá	10,089
Villa Rica	10,733	Limpio	16,300
Mbocayaty	9,340	Capiatá	14,409
Ihacanguazú	12,501	Villeta	4,353
Yuty	9,736	Villa del Pilar	14,392

The more civilized population of Paraguay, which is confined exclusively to the western portion of the country, consists of a mixture of the Spanish settlers and the aborigines and a small negro element imported in earlier times by the Spaniards. These elements are seldom found distinct, but flour-

in his every stage of admixture. The pure negro is very rarely seen, and for him Paraguayans have the greatest contempt. There are a few families who boast of unmixed Spanish blood, the descendants of the conquerors. The greater part of the northern districts of the country is now almost uninhabited; the department of San Salvador, between the Aquidaban and the Apa, is a complete desert. The districts of the Missiones south of the Tebicuari are also almost deserted, though they were at one time the seat of a large population. The bulk of the population surviving the war has drawn in around the capital, the heights of the plateau of Asuncion and the valleys of the Cordillerita being the only really peopled districts of Paraguay. The whole area of the eastern water-shed of Paraguay, as well as some parts of the northern interior on the western side, are still in the possession of the original Indian tribes, as free and almost as undisturbed as they were before the Spanish conquest.

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CITIES AND TOWNS.

Asuncion.—Asuncion, the capital, forty-four years older than Buenos Ayres, from which it is distant 1,150 miles, is situated on the eastern bank of the River Paraguay, 300 miles above its confluence with the Paraná, in latitude 25° 16′ 29″ S. and longitude 57° 42′ 42″ W. The city is built on a pretty slope, 60 feet above the river, which at this point is about 2,000 feet wide, at an elevation of 307 feet above the level of the sea.

Du Graty places its population in 1860 at 48,000, but it is doubtless to-day quite as large as it ever was, and the census of 1886 shows a population of 24,838, which may be considered a very just estimate. Of this number about 1,500 are foreigners.

As in all South American cities the streets cross each other at right angles, cutting the city into blocks 80 yards square, the streets themselves being 15 yards in width. The streets are at present in a very bad condition, the soil being a red sand, which is washed away by the action of wind and rain, often leaving deep ruts and gullies in the middle of the main thoroughfares. Congress has recently voted $1,750,000 for paving the streets, the accomplishment of which will be a great public blessing. The houses are usually one-storied, ground-floored apartments, with huge, thick walls, inclosing a court or patio with flowers and shrubs and, in some instances, fountains in the middle. They are likely a reminiscence of the Andalusian cities, borrowed by Spain from the Arabs, who inherited them from the Græco-Latins, of Pompeii. They have, as a rule, tiled roofs, and are in every respect admirably adapted for the climate. Many of the finer residences are tasteful and picturesque, their bright colors harmonizing well with surroundings, where variegated flowers bloom all the year round. The most conspicuous building, and the one first seen as the visitor approaches the city from the river, is the old palace built by Lopez for himself after his return from France, but destined never to be occupied by him. It is now but a mournful ruin and reminder of its builder's vanity. The Government, however, propose to turn it into Government offices, and to that end have appropriated $125,000 for repairs. The work is now well under way.

The cathedral, a large and commodious structure, the fine railway station, the cabildo or Government house, the hospital and churches of Encarnacion and San Roque attract attention. The mausoleum of Lopez, built for the reception of his bones, modeled after the Invalides in Paris, is a remarkably well-built structure in the center of the town. I understand that it is the intention of the Government to convert it into a museum, a purpose for which it is well fitted. The old theater, begun by the first Lopez, an imitation of La Scala, at Milan, covers an entire block, and would, if completed, be one of the largest in the world. It seems to be an elephant on the hands of the Government. I have heard no plans to utilize it. Like the other buildings, it is constructed of red brick, and so well built that the lapse of thirty years seems scarcely to have impaired its splendid walls in the least degree. A newer theater of large size and commodious appointments approaches completion.

The town is amply supplied with tram-ways. The oldest line, built by an Englishman named Horrocks, and now owned by an Italian physician named Morra, extends from the port to the Recoleta, a distance of 3 miles, passing through the center of the town. It is now being extended to Villa Maria, three-quarters of a mile beyond its present terminus. There are altogether in Asuncion 12 miles of tram-ways. The trams are of American manufacture, being built by George Stephenson & Co., New York city.

The port is being improved by dredging, $300,000 having been set apart for this purpose, and two drags are now at work.

Five daily papers, nominally morning sheets, but appearing the previous evening — the Nacion, Paraguayo, Democracia, Independiente, and Prensa — are published in the Spanish language. They are very severe in their treatment of each other and partisan in the extreme, either in favor of or against the Government. Besides these an illustrated paper appears monthly.

The business of Asuncion is done by three hundred and fifty-seven business houses, with a capital of $1,788,510. The whole country, united with Asuncion, has eight hundred and forty-one business houses, with a capital valued at $2,751,119. These are owned as follows, in order: Italians, Spanish, French, Paraguayans, Portuguese, Argentine, Belgians, and Germans. Strange to say, there is not a British house in Paraguay. There is a great boom in building just now; houses are going up in every direction. In 1886 four hundred and fifty new houses were erected in Asuncion, and the last year must have shown a large increase over that number. Ordinary houses rent for $100 a month.

Villa Rica. — Villa Rica, the second town in importance in the country, and, in the opinion of many, destined to outstrip the capital itself when the country shall become developed, is situated in the interior, at a distance of 108 miles from Asuncion. It is in the center of the most fertile and productive district in the country, surrounded by tobacco and mandioca farms, with noble forests of the finest woods near at hand.

Concepcion. — Concepcion, about 250 miles above Asuncion, on the Paraguay River, was, before the war, a place of much commercial activity. In those days it often exported 3,000,000 pounds of "yerba" in a season. The distance inland to the yerbales, which cover 48 square miles, is 70 miles.

Various towns. — San Estanslao, Paraguari, Jaguaron, Ita, Pilar, Luque, and Itauguá are among the principal towns. All are small, straggling villages, with a central square and church, buried in the dense orange groves which flourish everywhere.

LAW AND RELIGION.

Law. — In Paraguay, as in all Spanish-American countries, the civil law of Rome is the basis of the jurisprudence. This, together with the Argentine codes and local law, forms the *corpus juris* of the Republic. While justice is, probably, as well dispensed here as in other River Plate countries, and the country is remarkably free from lawlessness and violence, yet the processes of the law are exceedingly slow, vexatious, and costly.

Religion. — The religion of the State is Roman Catholic, but no restraints are placed upon other forms of worship.

LANGUAGE.

In Asuncion Spanish, German, French, Portuguese, and English are all spoken, besides the Guaraní Indian tongue. In the country ("camp" it is called here) Guaraní is all but universal. This Guaraní, which is spoken in one dialect or another all over the eastern part of South America, belongs to the polysynthetic language system common to all indigenous races from Alaska to Patagonia. The pronunciation is distinct and strongly accented, and, contrary to the practice of the Indians of the northern states of our country, the stress almost always falls upon the last syllable, as Paraná, the ultima receiving the accent; while in our Indian names, as Ohio or Potomac, the stress is upon the penultimate syllable. There is a moderate quantity of gutturals and a more liberal allowance of nasals. The Guaraní is almost as copious of vowels as the Italian, and its syllables fall soft and pleasant upon the ear. The limited grasp of the Indian mind in regard to mathematical quantity is shown by the fact that there are no numerals beyond five in the language. This defect is supplied by the Spanish numerals. The Guaraní is a written language, several grammars of the language having been published, and verse of considerable length has been written in Guaraní. Its use is discouraged in every way, and is prohibited within the precincts of the National College. It will probably, however, disappear only with the race which speaks it.

MONEY.

Paraguay has no gold or silver coin, and very little specie of other countries is seen in circulation. The standard of value is the paper peso, or dollar,* equivalent to 100 centavos, or cents. The fractional currency is

*Always, in this report, when the "dollar" is used, it means the paper peso, now worth about 70 cents.

only printed on one side. The $100 and $200 notes are very tasteful, being printed, as is all the currency, by the American Bank Note Company, of New York.

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WEIGHTS AND MEASURES.

1 tonelada = 20 quintals = 2,000 pounds.
1 quintal = 4 arrobes = 100 pounds.
1 arrobe = 25 libras = 25 pounds.
1 libra = 16 onzas = 1 pound.
1 onza = 8 drachmas = 1 ounce.
1 pipa = 192 frascos = 455.424 liters.
1 frasco = 4 cuartas = 2.372 liters.
1 cuarta = 0.593 liter.

For grain, salt, etc., the fanega is employed, which is composed of 12 almudes, each almude being equivalent to 24 liters.

Length.

1 legua (league) = 5,000 varas = 4,191.83 meters.
1 cuerda = 83⅓ varas = 69.68 meters.
1 vara (yard) = 3 pies = 0.83856 meters.
1 pie (foot) = 12 pulgadas = 0.27952 meters.
1 pulgada (inch) = 12 linea = 0.02329 meters.
1 linea = 0.00194 meters.

Surface measure. — The Paraguayan square league (4,500 acres) contains 1,743 hectares, or 2,500 cuadras (squares). The cuadra contains 10,000 varas, equivalent to 7,031 meters.

The metric system is established by law, but the old weights and measures are in universal use.

ARMY AND NAVY.

The army, which, under Lopez, rose to 62,000 men, possessed of 200 guns, consists now of a few hundred men, who are employed as a police force. It consists of the following:

	Men.
One battalion of infantry, composed of two companies	218
Two squadrons of cavalry	226
One brigade of artillery	159
Total	642

In case of war all men between the ages of twenty and thirty-five years able to bear arms are liable to military service.

One gun-boat, the *Pirapo*, a screw steamer of 440 tons, having four guns and a crew of six officers and thirty-six sailors, together with three steam-launches, constitutes the Paraguayan navy. The Government has recently appropriated $500,000 to buy a gun-boat.

In 1862, according to du Graty, Paraguay had eleven steamers, and in war time was able to put into commission forty sailing ships of from 100 to 200 tons burden.

EDUCATION.

The illiteracy of the nation, one of the legacies of the war, is something frightful. Out of the entire population but 32,447 Paraguayans and 3,826 foreigners know how to read and write, leaving the number of illiterates as follows: Paraguayans who are unable to read and write, 199,431; foreigners in the same condition, 4,070. There are, therefore, of the inhabitants only about 15 per cent. who are able to read and write.

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The Government is much to be commended for its zeal in the cause of popular education. It seeks in every way to remove this dark plague-spot of ignorance, in accordance with the maxim that the ballots of ignorant voters are more to be feared than the bayonets of a foreign foe. To-day education is obligatory in all parts of the Republic, and, undoubtedly, under the fostering care of those charged with the administration of educational affairs, great changes will ensue in the next decade. During the last year a start has been made in the way of normal school training. The services of an energetic and conscientious teacher from the United States were secured. This lady came here with the vantage gained by three years' experience in Guatemala, where she had mastered the Spanish language. Her work here as a teacher of teachers, after the best methods in vogue in the most advanced educational institutions of our own country, must result in great permanent good to the school system of Paraguay.

There are now in the country 138 schools, with an enrollment of 15,180 scholars of both sexes. Of this number there were in Asuncion, in 1886, 30 schools, attended by 2,848 scholars, including the National College in the capital.

In 1887 the sum of $158,459 was expended by the Government for purposes of education. The council of education, under the direction of the minister of public instruction, who is a member of the cabinent, are at this writing establishing three academies or schools of secondary education in the towns of Villa Concepcion, Villa Rica, and Villa de Pilar.

By a law passed in October, 1887, the following sums are devoted to education: (1) The sum voted in the general tax; (2) 10 per cent. of the product of the public lands and yerbales; (3) an additional 3 per cent. so soon as the amortization of the internal debt is complete; (4) the fines in general; (5) the product of vacant inheritances, successions, etc.; (6) one-half of the proceeds of judicial sales; (7) a tax of $1 upon each male over twenty-two years of age domiciled in the Republic.

The National College, located in Asuncion, is sustained by an appropriation of 4 per cent. of the customs dues. Each district of the Republic has the right to send one student, and the municipality also has a number of scholarships. Besides, there is a body of students who contribute for tuition and expenses. The dormitory system is in vogue, and the Government feeds, clothes, and cares for the students with the revenues of the custom-house devoted to that purpose. The course covers a period of six years, and embraces a liberal curriculum. French, German, English, Latin, and Greek

are taught, as well as history, philosophy, and the natural sciences. There are twenty-one professors at present, among them some foreigners of European education, and two hundred students. The physical and chemical laboratories are amply sufficient for present needs, and the general equipment is very fair.

The library of the National College, the most considerable in the country, consists of three thousand volumes, mainly in the French and Spanish languages. It is a remarkably well-selected collection, with less rubbish than I remember ever to have seen in a library of the limited size. Nearly all the books are recent publications, and in paper, typography, and binding the best productions of the presses of Paris and Madrid. The national character, which delights in bright colors and an excess of personal ornamentation, is curiously shown, as regards books, in the preference for editions *de luxe*.

A seminary for the instruction of young ladies has recently been projected by the citizens of Asuncion. A suitable building will be at once erected. Starting on its career under the auspices of the most advanced men of the country, and being under the control of one of the most accomplished and successful of that splendid corps of American teachers who have done a work in the Argentine Republic whose influence for good is incalculable, this latest educational institution will undoubtedly be a success.

PUBLIC DEBT.

In 1857 Paraguay had a revenue of 12,441,323 francs, no debt, no paper money, and a treasury so full as to enable Lopez to muster an army of 62,000 men, with two hundred pieces of artillery, in the field and fortifications. On January 1, 1888, the home debt of the country consisted of $1,068,891.53, distributed as follows: Public funds, $21,699.20; bills of exchange, $102,969.23; fiduciary titles, $944,230. The foreign debt stood, on the same date, as follows, in peso dollars (worth about 70 cents):

Brazilian claims	$8,960,183.23
Liquidated interest on the same	916,283.21
Argentine claims	7,140,824.37
Interest on the same	1,547,473.61
Loan from the Argentine National Bank	42,589.60
Conversion of the London loans	4,038,500.00
Total	22,645,853.82

The debt to the English bondholders consists of two loans made in 1871 and 1872, the former of $4,704,000, the latter of $2,163,756. The Paraguayan bonds were taken up with avidity by the public, being offered at the rate of £100 at 8 per cent. per annum, at the price of £80, with payment of principal and interest guarantied by a general mortgage of the whole country and property of the Republic of Paraguay, valued at £19,380,000. For four years interest was paid out of the capital subscribed to the first loan, and then the whole scheme collapsed and the stock fell until finally a £100 bond could be purchased in the market for £2 or £3. All that Paraguay

gained by this miserable business was the incubus of a foreign debt; £640,000 of the first issue were duly accounted for, and £460,000 were shipped from England afterwards, but the greater part of that sum remained in Buenos Ayres, and it is stated that only £150,000 ever reached Asuncion. Of this pittance much was misappropriated. An arrangement was made in 1885 by which new bonds to the amount of $4,250,000 were issued, and the Paraguayan Government agreed to grant 500 leagues of the public lands in exchange for the land-warrants issued in discharge of the unpaid coupons. The agent of the English bondholders visited Paraguay last year and selected the lands, and his action has been approved by the holders of the bonds.

The loan from the Argentine National Bank will, of course, be paid. The war indemnities stand on a very different footing. By the treaty of peace which terminated the war, Paraguay, broken and helpless, agreed to refund the cost of the war and indemnify those who had suffered by Lopez's invasions of Brazilian, Argentine, and Uruguayan territory. By a separate treaty one party to the alliance—Uruguay—magnanimously waived her claims to indemnity on April 30, 1883. Soon after she returned the trophies and battle-flags captured from Paraguay during the war. At the end of the war, which, according to the terms of the triple alliance of the allies, was waged, not against the Paraguayan people, but for the overthrow of Lopez, the conquerors did not scruple to dismember Paraguayan territory. The claims of the Argentine Republic and Brazil may be considered as guaranties, the one against the other, that the integrity of the Republic shall be preserved. There is no expectation, nor present possibility, that they will ever be paid. So that the foreign debt really consists of the amount due the English bondholders and the small sum due the Argentine Bank, in all something more than $4,000,000. Of the £845,800 due the London people, £812,350 is represented by new bonds issued up to December 31, 1887. In accordance with the agreement entered into with the English bondholders the rate of interest now paid is fixed at 2 per cent., this to be increased to 3 per cent. January 1, 1892, and to be raised to 4 per cent. in 1897. The interest on the new securities is promptly met.

Thus, though Paraguay is badly encumbered with obligations which must some day be met, yet the oft-repeated comment that she is hopelessly bankrupt lacks much of being true. Her financial situation is, for the first time since the war, re-assuring, and her credit in foreign markets shows increased confidence in her stability and perpetuity. The movement of the country may be gathered from the fact that in 1878 the Government found it difficult to realize a credit operation of $50,000; that in 1882 they could not raise a foreign loan of $250,000, but that in 1885 they were in a position to buy the Central Paraguay Railway on credit for $1,200,000, and in 1886 contracted for the extension of the same to Villa Rica for the sum of $1,400,000. These facts satisfactorily prove the great progress attained in the finances and in the credit of the Republic.

The holders of the land-warrants have recently formed themselves into the "Paraguay Land Company," in accordance with the terms of the subjoined prospectus, published in London, June 29, 1888:

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PARAGUAY LAND COMPANY (Limited).

Capital, £120,000 in 24,000 shares of £5 each, to be issued in exchange for land (Paraguay) warrants, at the rate of two fully-paid shares per £100 warrant, or 10 fully-paid shares per £500 warrant.

Five per cent. debenture stock, £60,000, issued at 90, is now offered for public subscription, payable as follows: On application, £10 per £100 debenture stock; on allotment, £20 per £100 debenture stock; on 1st of January, 1889, £30 per £100 debenture stock; on 1st of July, 1890, £30 per £100 debenture stock; total, £90.

Applications will be received for stock in sums of £5 and multiples thereof. Installments may be paid up in full on allotment, or on the 1st of January, 1889, and will carry interest from dates of payment. The return to the investor on the issue price is £5 11*s.* per cent. per annum.

The debenture stock will be secured by debentures or other securities in favor of trustees, having a floating charge over the whole of the property and undertaking of the company, and is limited to a maximum sum equal to 1*s.* 6*d.* per acre of the whole of the company's lands.

Trustees for debenture stockholders, the Right Hon. Edward Pleydell Bouverie, the Right Hon. Sir Edward Thornton, G. C. B.

Directors.—The Right Hon. Sir Edward Thornton, G. C. B., Eaton square, S. W., chairman; Christopher James, esq., consul-general for Paraguay, Lieut.-General Sir J. Luther Vaughan, K. C. B., E. Zucani, esq., members of the Paraguay land-warrant committee; C. P. Ogilvie, esq., director of the Central Argentine Land Company (limited).

Consulting Engineer, Henry V. F. Valpy, esq., M. I. C. E., special commissioner for designation of the lands allotted.

Solicitors, Messrs. Travers Smith and Braithwaite, 25 Throgmorton street, E. C.

Bankers, Messrs. Robarts, Lubbock & Co., 15 Lombard street, E. C.

Secretary (pro tem.) and temporary officers, H. L. White, esq., 17 Moorgate street, London, E. C.

Abridged Prospectus.—The company is formed, in pursuance of resolutions, with the view of dealing with the lands represented by the warrants issued in respect of interest arrears by the Government of Paraguay, on the old external debt, in the manner best calculated to produce a beneficial result to the warrant-holders. It is proposed to exchange each £100 land-warrant for two fully paid-up shares of £5 each, and each £500 land-warrant for ten fully paid-up shares of the company, and to provide the funds required to organize the company and to develop or gradually sell the lands by the issue of debenture stock now offered for subscription.

The land-warrants represent 500 square leagues of land, or about 2,177,000 English acres.

The company will be placed in the most favored position as regards selection, and will afford, besides, facilities for completing titles, taking possession, etc., which individual holders can not command.

The returns of the company will be derived mainly from the sale and leasing of lands, cultivation, etc. The great rise in the price of land in the neighboring states is well known, and its effect is already being felt in Paraguay; the completion of the railway from Asuncion (the capital) to Villa Encarnacion can not fail further to enhance the value of land in Paraguay.

The debenture stock issued will, in any case, be limited, as a maximum, to 1*s.* 6*d.* per acre of the lands acquired. The directors will not proceed to allotment unless warrants for 700,000 acres, or thereabouts, are exchanged for shares, and debenture stock for £50,000 applied for in the first instance.

Full copies of the prospectus and forms of application can be obtained from the secretary and the bankers.

LONDON, *June 28, 1888.*

REVENUES AND EXPENDITURES.

The revenues are mainly derived from duties levied on imports and exports, warehousing, stamped paper, licenses, and sale of public lands. The ordinary receipts of the nation for 1887 represented $1,267,851.90, of which sum $1,153,526.21 was derived from customs and the remainder from other sources. The excess in favor of 1887 as compared with 1886 was $239,879.06, equivalent to an increase of 23 per cent., without including $23,771.42 produced by the yerbales, timber, etc. The entire revenue for the year 1887, however, was $3,056,693.46, inclusive of the receipts from the sale of lands, yerbales, etc. The growth in the revenues since the close of the war may be seen from the accompanying table:

1870	$102,000.00	1881	$441,700.00
1871	180,000.00	1883	442,000.00
1872	265,000.00	1885	1,437,900.31
1879	279,000.00	1886	2,965,759.77
1880	320,400.00	1887	3,056,093.46

It must be borne in mind, however, that the revenues of the last three years have been largely swelled by the sale of public lands, a source of revenue which is now almost, and which will presently in the nature of the thing be entirely, exhausted. The budget for the year 1887 consisted of $1,012,677.75, divided as follows:

Department of the interior	$301,044.00
Department of state	24,660.00
Department of the treasury	77,748.00
Department of justice and public instruction	146,496.00
Department of war and navy	281,493.75
Contingent expenses	181,236.00
Total	1,012,677.75

The total expenditure for 1887, including service on the external and internal debts, amounted to $1,400,503.

The following table, instituting interesting comparisons between the revenues of 1885 and 1886 is worthy of attention:

Comparison table of the general revenue during the years 1885 and 1886.

	1885.	1886.
Import duties	$361,100.84	$461,341.23
Export duties	117,233.33	113,158.94
Warehouse rent duties	934.70	1,899.57
Custom-house fines		2,080.09
Interest on custom-house duties	3,307.53	3,482.33
Transshipment custom dues	49.52	85.26
Captain of ports dues	3,793.50	4,030.20
Rents of forests	4,055.00	3,253.75
Premium on exchange of stamps	46.10	69.35
Rent of fords	662.50	187.50
Fines and dues of police	641.00	796.75
Post and telegraph office	4,708.92	9,366.63
Mortgage register office	4,193.20	6,832.31

Comparison table of the general revenue during the years 1885 and 1886. — Continued.

	1885.	1886.
Sales of public lands	$609,543.27	$1,268,795.49
Shipping diplomas	160.00	.....
Commercial register	8,326.00	8,192.00
Rent of prairies	792.94	85.00
Stamps and postage-stamps	51,378.39	77,258.41
Additional custom dues	182,896.69	99,178.98
Wharf dues	3,184.49	2,933.18
Sale of Government property	385.50	.....
Commissions	9,808.79	13,872.43
Rent of palms	20.00	.....
Official auction dues	74.42	158.95
Country licenses	100.60	749.95
Rent of yerbales	17,954.50	29,632.50
Four per cent. additional of National College	52,256.26	66,309.07
Interest on account current	193.32	.....
Additional 3 per cent	.....	39,898.91
Additional 8 per cent	.....	106,333.66
Five per cent. of the liquidation of the bank	.....	22,925.19
First and second dividends from National Bank	.....	100,000.00
Measurement of yerbales	.....	13,603.33
Unclaimed legacies	.....	498.65
Measurement of Chaco	.....	11,625.00
Railway return	.....	5,500.00
Sale of yerbales	.....	491,625.31
Total	1,437,900.31	2,965,759.77

Comparative expenditure for the general revenue for the years 1885 and 1886.

	1885.	1886.
General expenses as authorized by the budgets	$681,315.12	$775,682.02
Extra expenses	9,213.46	32,990.53
Payment of bills and orders	129,816.59	74,935.80
Payment of land-warrants	30.00	.....
Salaries in November and December	63,936.75	.....
Payment of bonds, series A	54,169.19	100,000.00
Interest to the National Bank	66,800.49	85,854.16
Payment of special bonds	67,013.75	.....
Payment of public loans and interest	182,472.19	207,679.81
Interest on public loans and interest	.....	1,500.00
National College	52,256.26	66,309.07
Cancellation of trusts paid on account of purchase of existing railway	.....	98,333.66
Commission on the consolidation of the London debt, interest, etc	.....	158,983.28
Total	1,307,023.78	1,602,268.33

The hopeful spirit of the people is shown and the bright side of the picture exhibited in the following from the Paraguayo of June 19, 1887. Commenting on the recent report of the finance minister, it said:

Among other important facts set forth in this report, and which ought equally to gladden us, we learn that our public revenue has increased over 30 per cent.; that our imports do not

exceed our exports; that the internal debt is on the eve of being completely extinguished, it being quoted in the market (payment warrants) at 95 per cent., notwithstanding the sensible reduction made on said debt and the exceptional circumstance that there is no interest on the same, the public funds issued in June, 1885, ($400,000 for the service of the budget, amortizable 24 per cent. annually), with an interest of 12 per cent., have been reduced to $26,813; that the engagements entered on by railway contracts have been strictly fulfilled, its cost being canceled, and finally that $166,244 have been paid on account of the purchase of the existing railway. These are facts which by themselves clearly show the prosperity obtained in our financial status in cash as well as in internal and foreign credit.

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COMMERCE.

The following table shows the amount of imports and exports of Paraguay since 1851:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
	Dollars.	*Dollars.*		*Dollars.*	*Dollars.*
1851	230,900	341,600	1882	1,320,125	1,650,679
1853	406,700	690,500	1883	953,076	1,766,457
1855	432,000	1,006,000	1884	1,448,000	1,572,000
1860	886,000	1,694,000	1885	1,524,000	1,493,000
1879	956,000	1,582,000	1886	1,621,000	1,571,000
1880	1,030,000	1,163,000	1887	2,142,115	2,005,610
1881	1,204,000	1,928,000			

Forty-eight per cent. of the imports came from Great Britain. Other countries share the trade as follows, in order: France, Italy, Germany, Spain, Argentine Republic, Uruguay, and Belgium. Owing to the lack of direct commercial traffic with European ports, nearly all the imports come from Montevideo and Buenos Ayres. In the interior much of the trade is mere barter, imported goods being exchanged for tobacco, maize, and other products of the country.

A glance at the table will show that the total value of imports and exports for 1887 amounted to $4,447,726.58, an increase over 1886 of $1,184,215.02. Distinguishing the imports and exports for 1887, the value of the former amounted to $2,142,115.90, and that of the latter to $2,005,610.60, so that the imports exhibit an excess of $435,505.22. The difference, however, as President Escobar indicates in his annual message, is more apparent than real, as no account is taken of timber and other products sent out of the country free of duty.

Before the war Paraguay was prosperous and wealthy; the exports largely exceeded the imports, for in Montevideo and Buenos Ayres there was always a ready sale for all the yerba, tobacco, hides, and other produce that could be shipped down the river. The wants of the people were few, and a great part of the difference in trade returned to Paraguay in the shape of money and finery and jewelry, of which these people are fond.

Besides a few agricultural implements and a little lumber none of the imports come from the United States. The trade with the United States at present may be set down as nil.

TRADE WITH THE ARGENTINE REPUBLIC.

During the last ten years there has been an increase of 66 per cent. in the trade relations of the Argentine Republic and Paraguay, and still the trade with Paraguay amounts to scarcely 1 per cent. of the total foreign commerce of the Argentine Republic, amounting in 1885 to $1,631,904 out of a total of $176,101,069. This trade, too, is very one-sided, the exports from Paraguay during the period of ten years reaching an aggregate of $10,000,000 and the imports not exceeding a quarter of that sum.

The exports from Paraguay to the Argentine Republic for 1885 were: Yerba-maté (9,000,000 pounds), $726,655; tobacco (5,000,000 pounds), $204,286; timber, $253,917; railway sleepers, $109,612; sugar, $76,614; fresh fruit, $32,454; other articles, $68,245; total exports to the Argentine Republic, $1,471,783. The volume of this trade seems remarkable when we consider that the yerba-maté is taxed 55 per cent., sugar 77 per cent., and tobacco 55 per cent. at the Argentine custom-houses.

The imports from the Argentine Republic in the same year were 1,050 tons of grain, $61,000; 13,000 live cows, $53,000; sundries, $46,000; total imports, $160,000.

Besides this direct trade there is an increasing transit trade with the Argentine Republic. The transit trade for 1885 amounted to $518,822, of which only $13,547 passed through the Argentine Republic from Paraguay to foreign ports, while the value of the merchandise passing through the Argentine Republic to Paraguay reached to the sum of $505,275. The latter amount was made up as follows:

	Value.
Comestibles	$12,840
Liquors and wines	22,300
Cotton and woolen goods	344,824
Ready-made clothing	37,518
Manufactures of iron	30,407
Other articles	58,386
Total	505,275

NAVIGATION.

The following table shows arrivals and departures of steamers at or from the ports of Paraguay during the year 1886:

Description.	Arrivals.		Departures.	
	No.	Tons.	No.	Tons.
Sailing	2,844	106,741	2,796	95,676
Steam	470		482	

This compares with the years 1879, 1880, and 1881 as follows:

	Ships.	Tonnage.
1879	260	24,077
1880	241	30,172
1881	264	34,859

Of the boats entering Paraguayan ports in 1886 the following table showing the flag is interesting:

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Flag.	Entered.			Cleared.		
	Steam.	Sailing.	Tonnage.	Steam.	Sailing.	Tonnage.
Paraguayan	34	613	11,766	45	614	9,923
Argentine	312	308	62,793	318	317	57,684
Oriental	33	53	10,419	32	60	10,651
Brazilian	49	3	10,988	42	2	8,575
Bolivian	12	.....	1,829	14	.....	1,986
English	5	.....	1,362	7	.....	1,621
Italian	.....	2	214	.....	1	107
Portuguese	.....	8	78	8	4	39
Not specified	25	1,857	7,292	24	1,798	5,090

The United States flag is unknown in this part of the world. During a residence in Asuncion of the greater part of a year I have never seen the stars and stripes upon the river save on the passenger boat which brought up the American minister in April last.

CUSTOMS DUES.

All foreign merchandise not on the free-list is subject to a minimum duty of 25 per cent. The following pay a special rate:

	Per cent.
Fire-arms, powder, shot, alcohol, fine wines and liquors, perfumery, tobacco, cigars, matches	50
Clothing, hosiery, saddlery, harness, carriages	40
All articles made of silk, ordinary table wines, and beer	30
Jewelry and precious stones	10

Exempt from customs dues, horses, cattle, fresh fish, Portland cement, Roman earth, furniture for immigrants, gold and silver, coined or uncoined; empty bottles, printed books, globes, maps, scientific instruments, printing-presses and type, coal, iron, resin, soda, oil, animal black, and all agricultural implements for immigrants.

RAILWAYS.

The railway from Asuncion to Paraguari, a distance of 45.2 miles (72 kilometers, 417 meters), the first line constructed in South America, was built for Lopez during the years 1861–'64 by the Englishmen Burrell, Valpy, and Thompson, with a force of six thousand soldiers detailed for the purpose. It rested at Paraguari until recently, the war having stopped it midway on its course to Villa Rica, the proposed terminus. After many vicissitudes the building of the road has been resumed, and the new station, General Escobar, 11.20 miles (18 kilometers, 50 meters) beyond Paraguari, was opened last September. Work on the road-bed is being pushed, and a fine bridge across the Tebicuari of 260 meters is in process of construction. It is expected that it will be completed to Villa Rica during the coming year, a distance from Asuncion of 91.48 miles (147 kilometers, 242

meters). A concession to further extend the railway to Encarnacion, on the Paraná River, has been granted to certain parties, who are now in London negotiating its sale.

Trains run daily from Asuncion to Escobar and return, leaving the former at 6 o'clock a. m., arriving at Escobar at 12; leaving Escobar (returning) at 1 p. m. and arriving at Asuncion at 6 p. m. The old track to Paraguari has recently been thoroughly overhauled. New bridges and culverts have been built. There are four classes of cars. The first-class coaches, of Belgian make, are beautiful carriages, as fine in appearance as the best American coaches, and perhaps more ornate in their appointments. The second and third class coaches are plain, comfortable carriages. The fourth-class are simply trucks without seats, but it is very cheap and certainly a great convenience to the poor Paraguayans, mainly women, who patronize it. First-class fare, about 4½ cents per mile.

The railway traverses a very picturesque region. The orange and palm groves of Luque, the superb lake of Ipacarai, stretching out to the foot of the Cordillera; the Peak of Itaguá, the valley of the Pirayú, the Cerro Batovi, and the bold heights about Paraguari form a pleasing landscape of considerable variety. The section now being extended to Villa Rica will pass over a still more charming country.

The number of passengers carried last year amounted to 257,688; amount of traffic, $161,550. In 1881 the total number of passengers amounted to 81,807; total amount of traffic, $62,207. The passenger and traffic returns for 1887 show a considerable increase over those of 1886, in which year 120,865 persons were carried, and the traffic reached the sum of $85,606.17.

In 1876 a survey was made for a railway, which was to start from a town called Curitaba, in the Brazilian province of Paraná, near Paranagua, and run thence to Matto Grosso and Bolivia, thus placing Paraguay within five days of Rio de Janeiro.

The air of the River Plate is full of great railway enterprises just now, and new lines and gigantic combinations are projected in every direction. A late number of the Buenos Ayres Standard contains the following:

Messrs. Clark & Co. have long planned a vast net-work of railway in the South American continent, and the scheme for a line from Recife to the Pacific coast forms part of this bold plan. Such a line would eclipse the Panama Canal and rouse the wonder of the world. Rapid communication would be established between Australasia and Europe, and immigration to the Pacific coast would be considerably facilitated. The lines which the Messrs. Clark are at present building from Monte Caseros to Corrientes, Posadas, and Missiones also form part of the vast plan alluded to and are intended to connect us with the transcontinental Brazilian line. The plans were roughly drawn up in 1886 by these foreseeing and powerful railway kings. The first section, according to the plan, stretches from the Missiones territory as far as San Pablo, in a southwesterly direction from the lines at present in course of construction. At Curitiba, a branch line would be built to Paranagua, on the Atlantic, and at San Pablo there would be a junction with the railway running to Rio Janeiro, or with that terminating in Santos. The second section, which runs more in a westerly direction, would be the prolongation northward of the Missiones line. It would incline gently eastward, after crossing the

province of Paraná and San Pablo, then continue to the west of Minas Geraes and Bahia, and terminate in Pernambuco.

The third, an interoceanic section, would form a junction with the Transandine line. It would stretch from Villa Mercedes, in San Louis, through Villa Maria (as at present), Santa Fé, Esperanza, along the right bank of the Paraná as far as Corrientes. It would then cross the river a little higher up and stretch to Asuncion, thence to Paraguari, Villa Rica, and other towns, and finally into Brazilian territory to Para, communicating, by means of a branch to Braganza, with the Atlantic. Such is the gigantic scheme which the Messrs. Clark have been planning since 1886. The Emperor Pedro is highly in favor of it, and assured Mr. Matthew Clark in London that he would do everything in his power to assist him and his brother to carry out the greatest scheme of the age.

The often-discussed project of a great international railway to run from Buenos Ayres through Paraguay, Bolivia, Peru, and Ecuador to Bogota, in Colombia, thence to coast at Carthagena or Panama, on the Isthmus, has been ably and exhaustively dealt with by Minister Bacon in a recent issue of the CONSULAR REPORTS.

The Government, in September, 1887, concluded the following agreement for the sale of the present line of railway with a view to its extension to Villa Encarnacion on the Paraná River.

ARTICLE 1. The executive is authorized to make arrangements with Dr. William Stewart for the sale of the railway from Asuncion to Villa Rica and all appurtenances for 2,100,000 hard dollars gold. The purchaser being obliged to prolong the line to Villa Encarnacion.

* * * * * * * *

ART. 5. The executive concedes to Dr. William Stewart the right to build and work a railway from Villa Rica to Villa Encarnacion in accordance with the conditions specified in this law.

* * * * * * * *

ART. 7. * * * The company is at liberty to build such branches as may be found necessary, without, however, having the privileges of a guaranty.

ART. 8. The Government guaranties an annual interest of 6 per cent. on the capital sunk in this undertaking for twenty years. The maximum cost per kilometer not to exceed 30,000 hard dollars gold. * * * Government to determine tariff so soon as net earnings exceed 12 per cent. per annum.

Dr. Stewart is now in London to effect the sale as projected, but has not succeeded in doing so up to this time. The railway has been reported as sold several times during the year. The matter is one of great moment to those interested in the country, and the fate of the "Stewart concession" has been closely watched. It is now reported that Dr. Stewart has asked the Government for an extension of three months' time; also, that the Government does not feel inclined to accede to the request. I understand, further, that in case Dr. Stewart fails to place the concession in London, a Belgian company stands ready to succeed to his rights in the matter. There is no doubt that the road will be extended soon by some company.

POST-OFFICE AND TELEGRAPH.

The increase in circulation since the entrance of Paraguay into the postal union in 1881 may be thus shown:

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Items of mail matter, foreign and inland, handled.

	Pieces.		Pieces.
1881	130,113	1884	254,514
1882	175,820	1885	328,109
1883	210,146	1886	402,328

In 1880 the revenue from the post-office amounted to only $1,872; the next year it netted $2,272; in 1886 it had increased to $7,778.63, and in 1887 it amounted to $12,257.45. The rates of interior postage are: Letters of 15 grammes, 5 cents; postal cards, 2 cents; circulars, announcements, etc., 50 grammes or fraction thereof, 5 cents; newspapers and unbound periodicals, foreign or local, free; engravings, photographs, printed music, etc., 200 grammes or fraction thereof, 5 cents; letters to other countries in postal union, 10 cents; papers of 50 grammes, 6 cents. Letters may be registered to any part of the world.

There are two lines of telegraph in the country, both under Government control and directed by the post-office, one connecting Asuncion with the outside world, running to Paso de la Patria, where it meets the Argentine line from Buenos Ayres, the other following the railway to Paraguari and beyond. The interior line will, of course, be extended with the railway to Villa Rica. Besides, the Government has appropriated $500,000 for two new lines of telegraph, one from Asuncion north to Concepcion, the other from Paraguari south to Villa Florida.

While the revenue from the post-office proper shows a marked increase in 1887 over 1886, the revenue derived from the telegraph shows a slight falling off. In 1886 the revenue from this source was $8,927.06; 1887, $8,824.55. The cause of the shrinkage lies in the execrable service which it offers to the public. Letters sent from Buenos Ayres often beat a telegraphic message to Asuncion.

The postal routes of the country united formed in 1886 a distance of 1,794.69 miles (2,890 kilometers), and the number of miles traveled that year amounted to 296,168.78 (380,304 kilometers).

BANKS.

Four years ago there was no bank in the country. To-day there are five—all in Asuncion. The Banco Nacional is the pioneer establishment of credit. The Government owns one-third of the capital of this institution. It is a bank of issue, and is authorized to emit bills to three times the amount of its capital. The Bank of Commerce, founded in 1886, is also a bank of issue, and the paper emitted by these two banks forms the bulk of the circulating medium of the country. The Territorial Bank dates from 1887. An Agricultural Bank was opened this year, with the purpose of assisting actual occupants of agricultural lands, but owing to a lack of funds it has not been

able to do much as yet. The Hypothecary Bank, established this year, was expected to bring a large amount of money into the country. Its policy has been very conservative, and it has steadily refused to hypothecate unproductive lands on any terms. As almost all the land of the country is of that character it has not relieved in any way the stringency of the money market.

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The Banco Nacional did a business last year of $40,949,574.21, being $12,194,471.54 in excess of the previous year. The profits amounted to $216,317.93, the directors being able to pay a dividend to the stockholders of 15 per cent.

Money is and has been very scarce, and is loaned on the best indorsed paper at 3 and 4 per cent. per month.

COLONIZATION AND IMMIGRATION.

The hope of Paraguay lies in her success in attracting to her fertile, well-watered, and wooded lands a part of the surplus population of overcrowded Europe. Hitherto the Argentine Republic has absorbed the great mass of immigration which now annually pours into the River Plate, but the time is near at hand when the immigrant must go further inland, as the best "camps" in the Argentine have been taken, and besides all landed property is enormously inflated in value. It is a very gratifying harbinger of better things for the struggling Republic that the tide of immigration is beginning to set in toward Paraguay with considerable force.

There are at present three colonies in Paraguay. The first of the three, that at San Bernardino, was founded in 1881. It possesses 25 leagues of fine land situated on the borders of Lake Ipacarai, the largest body of water in Paraguay, opposite the railway station of Aregua, and distant 7 leagues from Asuncion. It numbers 600 inhabitants, mostly Germans, and is increasing constantly in population and wealth. The principal products of the colony are butter, cheese, and sugar, which they sell, as well as garden stuff, to the people of Asuncion. In 1886 they had 459 squares, or about 900 acres, in cultivation, raising maize, haricots, mandioca, mani, tobacco, rice, sugar-cane, and bananas.

The colony at Villa Hayes consists of 400 inhabitants. It is located near the town of the same name at a distance of 9 leagues above Asuncion on the Chaco side of the Paraguay River. The town was formerly called Villa Occidental, but received its present name in compliment to President Hayes, of the United States. The population of the colony is made up of French, Belgians, Italians, and Swiss. The cultivation of sugar-cane is the principal occupation. In 1886 164¼ squares (the square or cuadra is equal to nearly 2 acres) were in cultivation.

The Nueva Germania colony is situated on the banks of the Aguaray-Guazú, a navigable affluent of the Jejuy River, by which it is in easy communication with the Paraguay River. The colony possesses 12 leagues of land in the district of San Pedro. It is the newest of the colonies, and was founded by Dr. Fürster, its present head, a gentleman of wide cultur:, who

has written an interesting work on Paraguay. The colonists number about one hundred, composed for the most part of Germans. San Pedro is the most remote of all the colonies from the capital. Reaching it involves a steam-boat ride up the Paraguay from here of twenty hours, then four hours from the mouth of the Jejuy to San Pedro, a horseback ride of 9 leagues, brings one to the site of the colony. Villa Hayes is reached by a regular line of steamers from Asuncion, which employ an hour and a half in the trip. The visitor to San Bernardino takes the train leaving Asuncion daily at 6 a. m., and after an hour's ride finds himself at the railway station of Aregua. Leaving the train at this point he crosses Lake Ipacarai, and in an hour is in the colony on the opposite side of the lake.

It is estimated that there are now eleven hundred and sixty European families in the various colonies.

The immigration laws of Paraguay seem to be liberal. There is no doubt, however, that should immigration in any considerable numbers set in the Government must fail, from sheer inability, to fulfill its pledges and promises. The following are among the most important provisions of the statutes now in force:

A free passage to each family of agriculturists from port of embarkation in Europe to Asuncion.

Lodging and board in the immigrant hotel for five days following arrival, and at the end of this period free trasportation of persons and goods to their final destination.

A lot of 16 cuadras is given to each head of a family.

Each family receives necessary agricultural implements, seed for first crop, a cow and calf, and two oxen.

During the first three months of the present year 273 colonists came to make Paraguay their home, of whom 146 were Italians, 62 Germans, 21 French, 12 Spanish, 14 Swiss, 4 Austrians, 8 North Americans, 3 English, 2 Uruguayans, and 1 Argentine. The arrivals in the second trimestre amounted to 212 persons, of whom 81 were Italians, 80 Germans, 24 Swiss, 4 French, 1 English, 6 Austrians, 2 Spaniards, 11 Belgians, 1 Dutch, 1 Swede, and 1 Brazilian. From these figures it will be seen that the Italians here, as in the other River Plate countries and in Brazil, are largely in the preponderance.

The Government is doing all in its power to foment immigration, knowing that upon their success in attracting sober and industrious laborers of other lands and the diffusion of popular education hinge the destinies of the Republic. It has established an immigration office and a bureau of statistics in Asuncion, which issues in the French language a monthly periodical for general distribution called the Revue du Paraguay. This journal and occasional immigration pamphlets are spread abroad, mainly through the offices of the Paraguayan diplomatic and consular corps, which consists of one hundred and twenty-two officers (1886), most of them resident in Europe. Attention is being drawn to the resources and natural advantages of the country

by means of its display this year at the Barcelona (Spain) Exhibition. The Government is now preparing a larger and more ambitious exhibit for the Paris Exposition next year.

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The Paraguayan Congress, at the session just adjourned, has authorized an appropriation of 50,000 pesos toward the payment of passages of immigrants. Besides, various other inducements are offered to intending settlers. Any colonist who cultivates 8,000 plants of coffee is entitled to a grant of 5,000 pesos; 8,000 plants of cotton, 6,000 pesos; while any one who starts a sugar factory and exports 20,000 kilograms of sugar in two years is entitled to 25,000 pesos.

It is to be hoped now that an impetus has been given to immigration by governmental effort, and the country is being so extensively advertised that a part, at least, of the subsequent immigration may be voluntary and spontaneous. The unnatural beguiling of foreigners by contracting agents abroad is not just what is wanted to populate the waste places of this abandoned land, and such efforts are not productive of unmixed good either to the colonist or the country to which he immigrates. The good emigrant is he who goes to a new country of his own will to make a home with his own hands.

CATTLE AND STOCK RAISING.

In 1886 there were 729,766 horned cattle in Paraguay. The greater part of these were imported from the Argentine provinces of Corrientes and Entre Rios and the Brazilian province of Matto Grosso. Formerly this was the leading industry, and Paraguay has undoubtedly great natural advantages as a cattle-raising country. A yoke of oxen for the plow is worth $40; a milch-cow, $15 to $25; a horse, $15 to $25; a riding horse for town, $60 to $80.

It is conceded that the climate is too hot for sheep, of which there are only 32,351 in the country.

In 1886, 44,246 cattle, 18,441 horses, 1,599 mules, and 710 sheep and goats were brought into the country.

The subjoined table shows the increase in stock from 1877 to 1886:

Description.	1886.	1877.	Increase.
Cattle	729,796	200,525	529,272
Horses	62,386	21,140	41,424
Mules	1,925	1,299	626
Sheep	32,351	6,668	25,683
Asses	2,239	1,500	739
Hogs	12,250	3,026	9,224

The recuperation in this industry has been quite remarkable, considering that out of the large number of stock in the country before the war not more than 15,000 were left in 1870. Little or no attention has been paid to cultivating breeds. There is no sale for animals with a pedigree here. The best camps for stock raising are in Missiones, San Pedro, Concepcion, and the Chaco.

The cheapness of lands here, compared with the Argentine Republic, should be considered a great advantage to the stock raiser. Whereas land is worth from $15,000 to $40,000 a square league in the neighboring Argentine provinces of Entre Rios, Sante Fé, and Corrientes, excellent camp can be bought here for $5,000 or $6,000 a league—camp well watered and wooded, with fine, nutritious grasses, and admirably adapted in every way for stock raising. Should the comer not have means or inclination to purchase, lands may be rented at a nominal rate. A law was passed in 1880 by which Government lands could be leased for $60 a league. Whether this is in force now or not I can not say, but no trouble would be experienced in leasing large bodies of camp from private parties. Again, the severe frosts and long drouths of Argentine are unknown here. Comparing the prices of land per league, it should be said that the Paraguayan league contains but 4,500 acres, whereas the Argentine league contains 6,671 acres.

TOBACCO.

Agriculture is in its infancy and has not reached that extension which it should have considering the fertility of the soil; the actual population, compared relatively to the superficies of territory, shows plainly the want of laborers. Tobacco is one of the principal products of the country and is cultivated in all sections, though that grown at Luque, Itagua, Ita, and Villa Rica is most highly prized. In 1886 the amount of tobacco exported rose to 416,006 arrobes, valued at $832,012. Besides, large quantities are used at home. It has been estimated that the annual average consumption is from 12 to 15 pounds per capita, for smoking is universal and indulged in alike by men, women, and children. It is not uncommon to see children just able to walk with cigars in their mouths. Peti-hoby, the original kind cultivated in the reign of Francia, is blue, grown mostly at Villa Rica, and kept for home use. Peti-para, more recently introduced from Cuba, is yellow and chiefly sold for exportation. Analysis has shown that the former contains 3 per cent. and the latter 6 per cent. of nicotine. A species of Havana tobacco is grown at Luque and Villa Rica, cigars made from it having, it is said, a flavor equal to the best Bahia brands. The plants are put down in September, like cabbages, and transplanted in November. The gathering begins in January, and the leaves are hung out to dry till the "acopiador" comes around to buy. At the Paris Exhibition of 1855 a gold medal was awarded for samples of Peti-hoby and Peti-para. The industry has increased greatly of late years, for in 1829 the crop amounted to only 2,675,000 pounds, rising in 1860 to 15,000,000 pounds. Tobacco raising is very profitable, and is said to return 50 per cent. on the capital invested. The Argentine Republic and Uruguay have hitherto been the chief markets for this article of export, but as they have recently taken to its cultivation themselves and have placed a high duty on that imported, it is very desirable that Paraguay find a European market for this product.

The lack of favor with which it has hitherto met in European marts is attributed to its preparation and the mode of cutting it in vogue. In order to meet this the Government has placed an export duty of 25 per cent. per arroba on all tobacco cut in the old way, while that prepared in the most approved modes goes out free of duty.

A Dutch company, represented by Mr. H. A. J. Baetz, has recently begun the growing of tobacco on a large scale at Lambaré, near Asuncion. They have secured certain privileges from the Government, among them exemption from duties. The trials have been so far successful, and Mr. Baetz finds the soil peculiarly adapted for the cultivation of the tobacco plant. His Havana, Manila, Sumatra, Besocki, Kediri, and other seeds are in a most flourishing condition. The success of this venture, under skillful management and with improved machinery, will be watched with much interest.

The following table shows the amount of tobacco exported during the last six years, with official value appended:

Year.	Arrobes.*	Official value.†	Year.	Arrobes.*	Official value.†
1881	336,030	$672,060	1884	125,861	$251,722
1882	204,827	409,656	1885	214,324	428,648
1883	290,352	580,704	1886	416,006	832,012

* The arrobe is equal to 25 pounds. † Peso dollar = 70 cents.

AGRICULTURAL PRODUCTS.

Yerba.—Of the productions peculiar to the soil of Paraguay yerba (*Ilex paraguayensis*)—in Guaraní *caá mi*—is the most important. It is derived from the twigs and the leaves of a bushy evergreen tree, which is scattered more or less thickly through the wild forests of the central cordillera, from north to south. The districts in which it is most abundant are hence termed yerbales, and are named from their locality. The chief are the yerbales of Chiriguelo and Tacurupyta, in the extreme north; of Concepcion, at the head of the Ypané; of Caaguazú and Tacurupucú, on the shed to the Paraná; and of Yutí and Jesus, in the south. At present the yerba is not a cultivated product. In former times, however, the Jesuits recognized the great advantages and conveniences of having the yerba close at hand, and made large plantations of the tree about the southern reductions, there being a grove at Santiago of not less than twenty thousand yerba trees at the end of the last century. The trees of the far northern yerbales yield a finer tea than those of the south of Paraguay, and the yerba of Chiriguelo is stated to be the best of all. This, from its remoteness, has never been worked, and the yerba of trade is chiefly derived from the districts of San Pedro and Rosario. Under the Lopezes the yerbales were a Government monopoly, and yielded a large part of the Government revenues. In 1860, the time of the greatest prosperity before the war, the export of yerba amounted to over $1,000,000, and furnished over 60 per cent. of the total of products exported. The southern fields were granted to Messrs. Escobar & Co., on

January 1, 1880, for a period of ten years, on favorable terms. In return for this concession the company have built roads which have, after a certain time, become the property of the public. By a law passed in 1885 the yerbales belonging to the Government were to be sold at public sale at from $1 to $1.50 per cuadra. Under the provisions of this law the yerbales were disposed of to the extent of $491,625.31 the following year (1886). The proceeds from the rent of the yerbales amounted, in 1885, to $17,954.50; 1886, $29,632.50.

Yerba is the dry and powdered leaf of the *Ilex paraguayensis*, a tree in size and character bearing a close resemblance to the orange tree. The shrub, which belongs to the holly family, grows to a height of 15 or 20 feet, is indigenous to the country, and is found wild, without nurture, not only in Paraguay but in parts of Brazil and the Argentine Republic. It has ovate, lanceolate leaves, 4 or 5 inches long, with margins unequally serrate. The white flowers are in umbellate clusters, with a four-seeded berry the size of a pepper grain. The yerba contains nearly one-half of 1 per cent. (0.45) of caffeine, and 20.88 of caffeo-tannic acid. Besides, it possesses an aromatic oil, gluten, and a portion of theine. It has not the delicacy of flavor, while it has more bitterness and astringency than China tea. The Paraguayan yerba is considered to be superior to that grown elsewhere. Yerba is cheaper than coffee or tea, selling here at $2 per arroba (25 pounds). In the market of Buenos Ayres it sells at from $3.50 to $5.50 per arroba. While coffee involves a long process yerba can be prepared in thirty-six hours. Efforts to introduce it into Europe have failed, but it is used by eighteen millions of people, comprising Brazil, the River Plate countries, Peru, and Bolivia.

The Sociedad la Industrial Paraguaya, at the end of 1887, declared a dividend for the year of 62 per cent. This company exported 240,310 arrobes, but on account of the high waters were not able to send out of the yerbales 84,000 arrobes in addition, making a total product of 325,310 arrobes. The same company expect to produce 350,000 arrobes this year (1888).

The following table shows the amount of yerba exported since 1881:

Year.	Arrobes.	Value.
1881	496,876	$621,095.00
1882	518,381	647,976.25
1883	622,801	778,501.25
1884	583,481	729,351.25
1885	493,531	616,913.75
1886	442,940	553,675.00

NOTE. — For a detailed account of the manner of preparation of the yerba see report of Consul Baker, CONSULAR REPORTS No. 28, February, 1883. Yerba is often called yerba-maté; the maté, however, is the gourd out of which the tea infusion is sipped through a tube with punctured bulb at one end, called the *bombilla*.

Sugar-cane. — Sugar-cane is grown in all parts of the country, and of all the crops of the country it is the surest and most lucrative. The growing of cane is capable of almost indefinite extension, and should be the crop of the

future. Three varieties give good results, the *saccharum officianarum*, which is white and very sweet; the violet cane of Taïtai, which reaches maturity sooner than the others, known to the world from having long been cultivated in the English possessions; and lastly a third species, with slender stalk, fluting green, and joints far apart, which yields much sugar and has been successfully introduced into the Argentine Republic.

A plantation of sugar-cane requires a minimum of work on the part of the laborer, and the same plants last a period which varies from five to fifteen years, according to the nature of the soil and the kind of nurture. The only thing to be done is to weed out the grass at the time when the stems begin to show up; nine months after the cane is ready for cutting. Each hectare produces on an average 250 assumbres (1 assumbre is equal to half a gallon) of molasses. The caña, or rum, made from the native cane is in universal use in the country. It is often a vile product, owing to the rude manner of distillation, yet I have seen a clear and beautiful liquor from the best distilleries. Notwithstanding the excellent quality of the cane, for the production of which soil and climate are perfectly adapted, 500,000 pounds of foreign sugar are annually consumed. There are two sugar-mills of moderate capacity at Asuncion. Paraguay ought easily to produce sugar for her own domestic use. The fact that the Argentine Republic has of late taken to cane planting and sugar producing and protects the home article by heavy (prohibitive) import duties will confine Paraguay to a home market for this product.

Wheat and mandioca. — The general impression is that the climate is too hot for wheat. I do not know that it has ever been given a fair trial under favorable conditions. The mandioca forms a good substitute, growing almost spontaneously, and yielding one hundred to one hundred and fifty fold. The bread made of mandioca, called "chipa," is agreeable and nutritious, though a little oily.

Cotton. — Cotton grows spontaneously. The tree lasts ten or twelve years. An English gentleman has recently sent to the United States for gins, and proposes to experiment with the cotton-plant.

Rice. — Rice was much grown before the war, and the steamers of Lopez took 300 bags to Buenos Ayres each trip. It is of red color, grows well everywhere, but is not a product of export. The lowlands along the Tebicuari might easily grow enormous quantities of rice.

Maize. — Like rice, maize grows abundantly, yielding two hundred fold. It is, after mandioca, the chief support of the natives.

Coffee. — The coffee tree of Paraguay produces a beautiful berry, full and firm, but is said to lack flavor and aroma. However, large hopes are entertained of its extended cultivation. Owing to the scarcity of labor it is now grown on a small scale, and most of the coffee used is imported. Five years are required before the first crop can be gathered.

Hides. — Tanned hides form one of the chief articles of export. They are shipped to Buenos Ayres and Montevideo and thence to Europe. Their

weight is about 15 kilograms. Hides are used in the country as wrapping for yerba, etc. Last year the export of hides reached 100,000.

Rubber.—The manga ice, or india-rubber tree, grows abundantly in the northern part of Paraguay. Whether or not an industry in gum elastic is possible is as yet problematical.

Fiber.—The same remark may be made in regard to the textile plants, which flourish throughout the country. The caragutá and Utica utilis are thought by some to equal the Indian jute. Messrs Samuel B. Hale & Co., of Buenos Ayres, made an attempt to develop this industry some years ago, but it was a failure. At present the colony at San Bernardino have twenty squares planted with this aloe. The fibrous substance does not lie in the bark, as in the jute and ramie, but in the long, thick leaves which form the body of the shrub. These spreading and thickly clustered leaves are armed at every point with sharp-pointed spines, which render them difficult to handle.

MANUFACTORIES.

The manufactories of the country consist of two sugar-mills, two steam flouring mills, two steam soap factories, two macaroni factories, two match factories, a manufactory of artificial ice, a brewery, two vermicelli-mills, and numerous brick factories. There are also two or three steam saw-mills, and several tanneries. The supply of bricks has, of late, been far behind the demand, and they have been sold in Asuncion this last winter as high as $32 per thousand. The soap factories supply the internal trade and besides export considerable quantities to the neighboring Brazilian province of Matto Grosso. The potteries of Ita produce some very curious and excellent articles. Towels and other articles are made at Aregua of native materials. The women throughout the country make very intricate puzzle-rings of gold, and handkerchiefs and embroidery of Nandutay lace, which are famous in this part of South America. All these are remarkable for the delicacy of work and the originality of design. An American is engaged near Aregua in the extraction of essences from oranges, and hopes for good results. The essences find a European market.

All manufactories are in the most primitive state, and are waiting on the development of the country and the increased production consequent on its growth and progress. Almost everything consumed is imported, and thus poor Paraguay pays tribute to her neighbors.

FRUITS.

Paraguay would seem, on account of its soil, climate, and rain-fall, to be a country well adapted for raising fruit. There is not, nor has there ever been, any intelligent fruit culture. No care is taken to secure the best varieties; no attention is paid to approved methods of growing, pruning, transplanting, etc.; in short, the industry is in as primitive a state as it was three hundred years ago. The soil is porous and light, the climate belongs to the same isothermal belt as Naples, Malaga, Barcelona, and Algiers, whose fruits

are celebrated, and the rain-fall is abundant, averaging nearly six feet per annum.

Oranges—In any enumeration of the fruits of Paraguay the orange naturally comes first, for this country almost merits the name of a land of orange trees and groves. Orange groves form the background of every view; every town is buried in their luxuriant foliage, and they grow wild in every forest. The planting of this tree was introduced by the Jesuit fathers, and being produced without nurture, from the seed which were scattered in all directions by the birds, their dissemination has become universal. Millions of oranges rot on the ground every year for want of roads and means of transit to bring them to market. From April, when the fruit matures, to October the river boats carry great quantities to Buenos Ayres every trip, half a million frequently being piled up on the deck. They are delivered on board (women and children bearing them in baskets perched on their heads) at $3.50 per 5,000. It is estimated that the shipment of oranges last year aggregated 50,000,000.

The Paraguay orange is of large size and has a rich flavor. The tree begins to bear at six years, and produces fruit for ten years. The bitter orange grows wild.

The exports for the last few years are as follows:

Year.	Number.	Official value.
1881	23,958,850	$47,917.70
1882	15,761,600	31,523.20
1883	24,182,200	48,364.40
1884	27,275,000	54,550.00
1885	30,056,300	60,112.00
1886	32,482,500	64,805.00

Grapes.—The grape is indigenous to Paraguay, and was successfully cultivated in the time of the Jesuits, though, on account of the extreme moisture of the climate, it is liable to rot. There are now no vineyards worthy of the name in Paraguay.

Bananas, etc.—The banana (*musa sapiernium*) thrives in Paraguay. The hot summers bring it to perfection. The cherimolia, papa, cactus fig, nispero pomegranate, cacao, quince, plum, pear, pea-nut, and peach, all grow in this red soil. I have not seen cherries or apricots. In addition to these are a number of native fruits of excellent flavor, the repetition of whose Guaraní names would serve no useful end. Water and musk melons do well.

CHARACTER OF THE PEOPLE.

Paraguay is a land upon which nature has showered her gifts with a generous bounty and prodigality. But, although three centuries, marked by more complete and wonderful changes than the world had ever before seen, have rolled away since it was disclosed to European view, it is still in the swathing-clothes of infancy. Women do the work and the men do the smok-

ing, gambling, and cock-fighting. The country is very backward, and the progress of the last decade has taken root merely within the narrow precincts of Ascuncion. The people are a happy, contented set, without aspirations. They are characterized by an unconquerable apathy, which the leaders deplore, and which they are endeavoring to break up.

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PROSPECTS FOR TRADE WITH THE UNITED STATES.

The subject is enveloped with difficulties of every kind. There is at present, as is well known, no direct line of steamers from any American port to the River Plate. All goods of American manufacture destined for Paraguay must needs be twice transshipped, once at Rio de Janeiro and again at the mouth of the Plate. Again, here as elsewhere in South America, business is done on long credits, six months, and in some cases still longer time, being granted. The English and Germans are anxious to do business on these terms. My correspondence with American firms would seem to indicate that our people are not.

The general imports were divided as follows in 1886:

Description.	Official value.	Description.	Official value.
Eatables	$259,342.10	Drugs	$27,574.47
Wines, liquors, etc	235,855.53	Lamps	2,844.45
Cotton and woolen	676,444.90	Fire-arms	8,345.40
Mercery	96,267.55	Watches and clocks	1,127.40
Hardware	84,044.64	Musical instruments	4,871.50
Hats	54,378.95	Furniture	14,469.10
Shoes	22,443.55	Leather	5,667.00
Confections	30,969.43	Saddlery	8,437.76

This exhibit shows plainly the character of goods which find a market here and renders comment superfluous. The trade is considerable, and is, in my judgment, worthy of more serious attention than our merchants and shippers have hitherto devoted to it. Besides, business beginning now with the revival of activity in the long prostrate Republic must, in the nature of things, keep pace with the well-assured era of prosperity and progress just dawning. There is not at this writing one single dollar of American capital invested in trade, or endeavor to induce trade, in Paraguay. During my stay here one commercial traveler from the United States has made Asuncion a flying visit, and found no difficulty, he informs me, in securing a good bill of orders. He further states that tradesmen here, unlike those in other sections of his route, have no prejudice against novelties or new lines of trade.

The Government is stable and bent upon the development of the country with the aid of foreign enterprise and capital. Its cordial support may be relied on by any one endeavoring to establish trade relations. I have not been able to discover any special predilection on the part of the people here for Americans. They are as indifferent to us as we have been towards them. London is the loan market of the whole River Plate, and all these governments aim to establish credit with London firms. Buenos Ayres is the finan-

cial capital of Paraguay for almost all purposes, but when Paraguayans look beyond it their eyes are always fixed upon London and Paris. New York is only an idle name, and is scarcely ever heard.

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CONCLUSION.

It is not my province in making a report of this character, the sole purpose of which is to place an accurate picture of the present status of Paraguay before the people of the United States, and especially that portion of our people who are interested in extending American trade relations with other countries, to enter into a disquisition on the future prospects of the country. Still less do I desire to record any opinion as to its political horoscope.

Domestic tranquility is now assured, and the era of pronunciamentos in River Plate countries is doubtless over forever. Ideas are making themselves felt, and, though history repeats itself, such careers as those of Francia and the Lopezes are to-day impossible.

The Paraguayan people are not, as Mr. Washburn says in his history, "extinguished," but in sober truth they might as well be for all the aid they can ever be in redeeming the hard fortunes of their country. Of themselves they are impotent, and must continue to drag out an existence similar to that of the pariahs of India. Foreigners have made the Argentine Republic what it is. To them is due the upward movement which we see to-day in Chili, Peru, and other South American countries. The future of the country, then, lies in its ability to attract immigration to its fertile lands, and to induce foreigners to make their permanent homes within its borders. The infusion of this new blood, and the influx of capital following it, are the two factors which will determine the destiny of Paraguay and her position among the states of South America.

ACKNOWLEDGMENTS.

I have drawn liberally upon everything published regarding Paraguay in the foregoing report, besides gathering data from the lips of persons in whose statements I have reason to place confidence. In particular, however, I acknowledge my obligations to Mulhall's Hand-book of the River Plate, Keith Johnston's Travels in Paraguay (Geographical Magazine, London), a report made in 1883 by Mr. Vanittart, second secretary of the British legation at Buenos Ayres, and a report made by United States Consul Baker, of Buenos Ayres, in 1884.

FRANK D. HILL,
Consul.

UNITED STATES CONSULATE,
Asuncion, January 23, 1889.

BUILDING UP AUSTRIAN TRADE IN SOUTH AMERICA.

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REPORT BY COMMERCIAL AGENT HAWES, OF REICHENBERG.

A month ago the representatives of the glass industry in the Reichenberg chamber of commerce discussed the subject of establishing an exhibition of Austrian glass-ware in Buenos Ayres, with, however, a negative result. Now, however, one of the most prominent glass exporters in this district has received from a business friend in Buenos Ayres, to whom he had applied for information, the following letter, which will be made known to the chamber of commerce and brought to the attention of manufacturers of all classes of goods. On account of its importance I give a translation of almost the whole of it. It reads as follows:

In reply to your esteemed letter of the 18th of September, I quote the project of our present minister resident, Baron von Salzberg, concerning a trial exhibition of Austrian glass-ware as very timely, only in my humble opinion not only glass but also all other products which can be exported from Austria to advantage should be represented in this exhibition. Hollow glass-ware needs less the results of such an exhibition, as the buying public are already familiar with it, these goods having been imported in quantities for years under the name of "cristal de Bohème" or "imitation de Bohème." On the contrary, in connection with other Austrian products, glass-ware would take a conspicuous place and have practical success, when — as the minister resident has so pertinently remarked in his report in this connection to the minister of commerce — our prominent and well-known domestic glass industry should be represented in this exhibition. In such an exhibition the manifold manufactures of Austria are much to be desired and, at the same time, necessary, because in general, and with certain exceptions, as cloth and the various products of the Riesengebérg industry, very few Austrian goods, as such, reach here. They are sent from Germany, France, or England, and consequently are supposed to be manufactured in those countries. Although, in truth, this is not the case, our father-land is placed through these circumstances, from an industrial point of view, in a rather passive and unimportant position. And, unfortunately, this evil will continue to exist until the Austrian minister of commerce takes steps to establish by means of subsidies a direct and cheap line of steamers to Brazil and the La Plata states from Trieste. In the seventies the Austrian ship *Narenta* arrived here bringing rumors of an assured establishment of such a line. This threw us Austrians into an ecstacy easily to be understood, but our hopes then, as again in the eighties, fell to the ground. And yet there are so many good grounds for the establishment of a line to the South American continent.

We see every day — and this must be sufficiently known to the Austrian ministry — the remarkable growth of German trade, which was formerly sent through France and England, since the establishment of their own steam-ship lines; for example, the Hamburg-South American Steam-ship Company and the Bremer Lloyd. And, although the first-named companies have in the last ten years more than doubled their large and comfortably arranged steamers, four steamers monthly, carrying goods to Brazil, Montevideo, Buenos Ayres, and Rosario, do not always suffice for the trade. Although the return freight does not at all seasons remain proportionate to the out freight, yet the yearly dividends of this company show a prosperity greater than necessary. And an equally successful future could an Austrian line have, after a short time, should its permanent establishment be with certainty provided for. Should we export natural as well as industrial products — for these have a good field here — the steamers as well as the exporters would make a profit.

As an article of export wine should first be mentioned, from which, on account of its enormous consumption here, a profitable trade for the Austrian and Hungarian wine-handlers can be expected; wine in casks, as well as bottles, will find a ready market; beer also; then

all Austrian iron and steel manufactures, shooting, cutting, and sticking weapons of the newest systems, for the army and navy as well as for private use; scythes, razors, table cutlery, Vienna alpaca, etc., a large selection of Vienna specialties, enameled tin-ware from Brün for kitchen use (now much in demand), cloths, prints, bank-note fabrications, porcelain for house and kitchen, Bohemian finest, fine, and cheap linen-ware for table and other purposes, mock-jewelry, beads for trimming, mother-of-pearl buttons, as well as hundreds of other articles which can be exported with advantage from Austria, and the trade in which can be greatly increased by the establishment of a direct line of steamers. Sailing vessels come often enough from the Dalmatian coast, but they are too slow to be considered.

In this direction, the chambers of commerce of the various Austrian provinces would accomplish an important service for the trade of the father-land and its export industry, if they would take united action in behalf of the establishment of such a line and continue the pressure upon the trade ministry until the project at least becomes an accomplished fact. By the contract between the Imperial Royal State management and the Austro-Hungarian Lloyd Steam-ship Company (from March 19, 1888, Art. 1 al. 4) this company is already obligated to make six round trips annually from Trieste to Santos, Brazil; and the said company undertake, provided it pays, "upon the demand of the State management to prolong two of these trips to Montevideo and Buenos Ayres without extra compensation."

After this little departure I return again to the subject of the exhibition, and more especially to the matter of a suitable locality. If a suitable building can be obtained free from the Government, as the report of the minister resident leads us to hope, a great saving for exhibitors will result, as rents of business places have greatly advanced in the last year. For an exhibitor to rent a place himself would cause a failure of the experiment, as on such occasion the costs are greatly increased through freight, breakage, and loss on articles difficult to sell. Before the chamber of commerce takes further steps in the matter it is greatly to be desired that a suitable locality be obtained free through the minister resident.

The success of the exhibition itself will principally depend upon the choice of the exhibited articles. Objects of *fantasie* will always, as experience shows, be at a disadvantage against articles which combine nice appearance with positive use. These latter can be sold to pay in great quantities. A permanent collection of such samples, continually renewed and added to, would be of great value; but in this case exhibitors can not expect to get their rent free; each exhibitor must pay his share of the cost.

The above letter was written for the information of Austrian manufacturers, but, as a leading British trade journal, in printing a résumé of one of my recent reports, remarks, "there is no reason why British manufacturers should not avail themselves of his hints," so in this case there is no reason why the American manufacturer should not profit from the information furnished. Several points in this letter are worthy of special attention:

First, The plan of building up a trade in new and unknown articles by means of an exhibition of samples. I have already, by means of reports and through correspondence, urged this as the only means of introducing American articles in this neighborhood. Nearly every consular officer who has occupied himself with the study of how to build up an American trade has reported to the same effect. Our manufacturers read and approve and shower a lot of catalogues upon the consul. The European manufacturer follows the advice of the consul and gets the market. Our consular reports are renowned throughout all Europe for the valuable and practical information they contain, but our manufacturers do not follow up the advice given. That is why we rank only fourth in the foreign commerce of the world while Germany has advanced to the second place.

Second, It will be at once noticed that most of the articles mentioned in the above letter are those in the manufacture of which we excel and in which trade we should, on the American continent at least, lead.

Third, The influence of direct steam-ship lines owned by the country interested in the trade. There is no doubt that Germany's success is due largely to this, and America must own her own vessels or be left in the race.

JNO. B. HAWES,
Consular Agent.

UNITED STATES COMMERCIAL AGENCY,
Reichenberg, February 8, 1889.

EXPORT TRADE OF AUSTRIA-HUNGARY.

REPORT BY COMMERCIAL AGENT HAWES, OF REICHENBERG.

A topic of much interest has been presented to the trade here, and it seems of sufficient importance to form the subject of a separate report.

The minister of commerce has caused to be forwarded to the various chambers of commerce the following decree:

The imperial and royal minister of commerce learns through the imperial and royal minister of the exterior that in two reports of the imperial and royal consul-general at Bombay it is proposed —

(1) That consular officers shall be given the power to settle differences between Austrian exporters and foreign importers concerning the delivery of goods according to samples, and to give official certificates as to the result.

(2) That such a certificate shall have legal effect. This proposition is founded upon the necessity caused by the increasing abuse of delivering goods of worse quality than ordered, and in the interest of the importer, who thus suffers loss, and principally in the interest of the preservation and extension of the Austrian export business. Inasmuch as a copy of these reports are herewith inclosed, the chambers of commerce are invited to report concerning the actual condition of the export trade to south and east Asia and the means of bettering it; also to explain the irregularities described in connection with the filling of orders for export.

VIENNA, *February 8, 1889.*

The two reports which are now causing such a commotion seem to have rested quietly enough somewhere for nearly a year, as they are dated in April and June of last year, but they are of so much importance that I translate them in full.

REPORT OF THE AUSTRIAN CONSUL-GENERAL AT BOMBAY, APRIL 30, 1888.

The exporter of Austria is, in consequence of the geographical position of the monarchy, at a disadvantage compared with his European rivals, because the industrial provinces lie in the heart of Europe, and his products reach the sea only after a long and expensive journey by rail. This disadvantage will, of course, gradually disappear with the progress of culture and the gradual development of the southern country. To-day, however, and I fear for a considerable time yet, the existing conditions must be counted on, and the manufacturer as well as the exporter must meet the said evil by the perfection of mechanical dexterity as well as by tireless industry.

The great secret of the international trade of the world is adaptation to the life and customs of foreign people. Competency in producing is not sufficient alone; one must produce what others consume. But just in this respect are we behindhand. The Austrian manufacturer of the good old time produced his wares as did his father before him, and then sought a buyer. It was impossible to induce him to work after foreign samples. He would rather give up the business. He was impractically conservative, but upright and honorable.

The younger generation, progressing with the times, viewed the matter more practically. In the success of other nations in the domain of trade-politics they remarked the advantage which the exporter derived from sending travelers with samples to foreign lands and followed the example set them, and not without profit.

Unfortunately, it not seldom happens that it is sought to improve the modest result due to great competition by procedures which are not always correct. All orders, even such as can only be filled with loss, are accepted; but, instead of sending what was ordered, *goods of a cheaper price, not agreeing with the samples, are exported.*

From time to time enterprising young people establish themselves here as local agents, but only few carry out their original intention to deal exclusively in Austrian ware. Most of them find, after a short experience, that it is more to their advantage to engage in German or English business, which will be properly settled and involves less risk. Scarcely is the agent supplied with samples from Austria when he must run around among the bazars, under a temperature of over 90°, to procure his customers. Should he succeed in getting orders for one or more articles, whereby he earns 1 to 2 per cent., the goods as delivered often do not agree with the samples. The purchaser here, of course, makes the most of these circumstances, refuses to accept the goods, and the agent must, in accordance with the difference, allow 10, and often 30 per cent. indemnity, which will also generally be refused. Finally, surveyors are resorted to, by whose decision both parties are bound. Often these can not agree, and then is named an "impair." Each of the judges receive $6 to $10. The agent pays the difference to the purchaser and informs the exporter thereof. He, however, does not believe it, and will not hear of an indemnity, and the agent may thank Heaven if he be compensated for part of his loss. If these irregularities be repeated, the purchaser loses all confidence in the agent and gives him no more orders. Is it to be wondered, then, that most agents lose the desire to trade with Austria? It has gone so far that sometimes it is preferred to purchase Austrian goods in Germany or England, which enhances somewhat the price. They are, however, better delivered, because the Austrian manufacturer does not dare to serve the German or English merchant unfairly.

The Austrian agent abroad — this pioneer of the export trade, who, with perseverance and energy, intelligence, and sacrifice of his health, works in India, who struggles against the competition of England, Germany, and France, and who must prepare, step by step, the terrain — is without protection against improper deliveries. All his efforts and combinations remain without result, and when he does not also resort to unfair methods, there remains nothing for him to do, often, but to return home disappointed and unsuccessful.

As the complaints of an agent concerning the unmerchantlike proceedings of Austrian exporters increased, I agreed with him to inform myself of the condition of the wares immediately upon their receipt. In such cases I had the boxes opened and made tests. I compared the delivered wares with the samples upon which the orders were taken, and stated exactly the differences found in a certificate, which was handed to the agent. These tests and original samples, with attestations under official seal, were then sent to the manufacturer and the agent received, without difficulty, the amount paid the purchaser.

This precedent has been followed with the best success, and the claims thereupon decreased. This demonstrates that the improper element at home could not be forced to do right because there was no way to compel it to recognize the decision of the agent and arbitrators.

I here propose that the imperial and royal consular officers shall be empowered in the future to intermediate in such cases. I take the liberty also to remark that the consular em-

ployés should only decide the perceptible difference between the samples, not, however, the percentage of the consequent decreased value, as ordinary employés can not be expected to decide this.

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REPORT OF THE AUSTRIAN CONSUL-GENERAL AT BOMBAY, JUNE 30, 1888.

The improprieties which have transpired in filling orders were principally due to the lack of a means to hold those concerned to an account for losses.

What has damaged our home industry is scarcely to be remedied now, for other nations have employed the interval to crowd out, more or less, our national products, which is best seen in the glass business.

Bohemian glass, which for centuries could not be equaled, and which was sent to all countries, does not any more play the part in the world's trade as formerly. Little Belgium, France, and Italy govern to-day the field, and why? Simply because the Bohemian glass dealers do not always act properly. Instead of purple glass, in case such is ordered, white glass is delivered, of which the inside is covered with a layer of purple glass. Instead of gold ornamentation that is burned in, according to sample, goods are delivered gilded while cold, which ornamentation disappears if only touched. If the samples were ten lines thick, the goods are only five to six lines thick. Fraud is only too often to be noticed, and this the importer does not, of course, overlook, and claims result. The consequences of such procedures, which are of enormous disadvantage to Austro-Hungarian commerce, show themselves the best in the glass bead trade, which is nearly closed so far as India is concerned. The reason for this is neither depressed trade, low exchange, nor the Lloyd tariff. Goods have for years been badly delivered, and that has frightened the importer and consumer, and what has been the case with beads will also transpire with other articles if the imperial and royal Government does not strongly interfere.

According to Austrian commercial law, a merchant who is not satisfied with goods as delivered is at liberty to return them, or hold them subject to the exporter's orders. When this law was enacted it was not considered that Austrian goods would be shipped thousands of miles. Business at home is usually done by credits of from three to six months. The buyer, therefore, has ample time to inspect the goods and settle claims by letter, or he may place the goods at the disposal of the seller. But this can not be done when goods are shipped thousands of miles away from home. The goods are, first of all, paid for when delivered. The importer notices the differences when unpacking and comparing the goods. Apart from the fact that it takes at least two months before he can receive an answer to his claim, the matter is not even then settled, because the manufacturer prolongs the matter and claims to have delivered better goods than called for; he doubts all cause for censure, and finally pays no more attention to the subject. The agent and merchant, however, have invested their money in goods which are unsalable. They lose the interest, and are perhaps compelled to sell at any price, as many articles depreciate in value when stored, on account of the climate. The Austrian law protects the home merchant, but not the one living in a foreign country.

Provided my suggestion concerning the issuance of certificates by consuls be adopted, I take the liberty to propose, further, that such certificates or survey reports issued by experts, when legalized by the imperial and royal representative in a foreign country, shall have legal effect in the monarchy. How else can an unreliable exporter be compelled to pay damages to the agent or merchant.

The English agent occupies an enviable position in this respect. The law protects him. In England every survey report is of legal force. The English manufacturer has, therefore, to repay all damages, or in case the surveyors refuse the shipment altogether on account of too great differences, then the agent may sell the goods by auction for the account and risk of the manufacturer.

England has by this law caused proverbially correct delivery by the manufacturer, for, from the moment he saw the ease with which the importer recovered damages he saw the uselessness of seeking to take advantage.

When, in 1876, the German professor, Franz Reuleaux, in his report, characterized the German exhibits at the Philadelphia Exposition as "cheap and bad," a furious cry arose from German manufacturers and exporters, but after the storm had subsided it was seen that the professor had dared public indignation in order to convey the truth to his countrymen, and that his statements were correct. The German manufacturer thereupon pocketed his pride, improved his goods, and now is pocketing cash in every market.

We are now experiencing the storm caused by the consul-general's criticism. Meetings of exporters are held at which the statements are declared exaggerated and false, and calculated to ruin the Bohemian industry.

One can scarcely imagine a consular officer seeking to injure the trade of his own country. The consul-general was doubtless aware of the commotion his report would occasion when, like Professor Reuleaux, he showed his courage in giving his countrymen good, if unpalatable advice. He is also not unsupported in his statements.

The complaints of the Austrian chamber of commerce in Paris (Austria has also a chamber of commerce in Constantinople) were reported in my dispatch No. 43. Recently a consul in Greece has complained of the bad quality of gloves sent to that country by some firms in Prague. The consuls at Djedda, Alexandria, Cairo, etc., report repeatedly that, "miserable rubbish of matches are delivered, which damage the name of Austrian manufactures." The consulate at Alexandria writes that, "the Vienna make of shoes is of a careless, unsolid construction, the consequence of which is that Austrian wares are crowded out." In a like manner the consul at Sofia speaks concerning the same articles, and the consulate at Smyrna reports that, "concerning the solidity of Austrian manufactures (cloth for the Levant) complaints are heard."

It remains now to be seen whether Austria will follow the example of Germany, and after sufficiently denying the facts go to work to improve the condition of affairs.

I have no desire to injure the Austrian trade with America, and I make this report simply because I feel it my duty to inform my Government of the facts, which I have taken solely from Austrian official sources and which, consequently, I am justified in considering authentic.

I am sure that there are many reliable firms in this consular district who would never resort to the irregularities complained of and whose business is conducted in a most honorable manner. The evil probably arises from competition between smaller and more recently established houses which has depressed prices greatly.

Since my arrival here the number of exporters from this district has doubled, and, consequently, competition is very keen.

Whether importers in America feel the evils complained of, this office has no means of knowing, as complaints would naturally not be made here.

JNO. B. HAWES,

UNITED STATES COMMERCIAL AGENCY, *Commercial Agent.*

Reichenberg, March 9, 1889.

MANUFACTURING INDUSTRIES OF HOLLAND.

REPORT BY CONSUL ECKSTEIN, OF AMSTERDAM.

There seems to prevail a very general opinion abroad that Holland has no manufacturing industry worth speaking of, and that its material interests are almost solely of a commercial, agricultural, and financial nature, and shipping concerns. This opinion, no matter what caused it to have been formed, is far from correct. When considering this country's industrial interests, in comparison with those of certain other European countries, they certainly appear insignificant; but when taking into proper account various existing circumstances, such as extent of territory, population, the vast amount of Dutch capital otherwise invested in and out of the country, etc., they would seem to be of a great deal more importance than they usually are credited with.

It would be most gratifying to me to furnish full and comprehensive information as to all classes or kinds of goods produced in this consular district or in the country; such information as would show the annual output of the various manufactures by quantity or value, the amount of capital invested in the different industries, the number of hands employed in each, and other interesting or useful intelligence relating thereto, if necessary data and statistics for that purpose were procurable. This, I regret to say, is not the case. Statistics of manufactures, in such manner and form as they are from time to time published in the compendium of the United States census, or annually by the chambers of commerce of our larger cities, have hitherto not been prepared or issued, and are not in existence in Holland. I would here also observe that to apply to any manufacturer in this country for detailed or minute particulars, such as might be intended for or serve in figuring out the first cost of producing the unit of quantity, weight, or measure of any article, is invariably regarded as a highly improper proceeding.

It should and will, therefore, be noticed that any report upon the subject in hand, with such meager facilities for its preparation, can hardly be expected to contain really precise or valuable information.

TEXTILE INDUSTRIES.

In this place I subjoin a translated copy of a statement containing detailed and more or less interesting information relating to the character and extent of the textile industry of Holland. It has been prepared for me upon my solicitation by the proprietor of the principal wholesale dry goods establishments in this city, and it is as follows:

The district of Twenthe, in the Province of Overyssel, forms the chief seat of the cotton industry in Holland, the principal towns engaged therein being Enschedé, Almelo, and Hengelo; further, the villages of Neede, Borne, Haaksbergen, Oldenjaal, and Nyverdal. In Enschedé very much unbleached cotton, in all widths, is made, as well as cambric, principally for the Dutch Indian market; and of late much attention has been given to the manufacture

of beaverteens in imitation of the English article. Pillow, dimity (both indigo and grey), drillings, unbleached and dyed regattas, and several other articles are here produced. This place possesses also blue-dye mills, and weaving-sheds for checks. Many of the mills in this district are of considerable size and importance.

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In Almelo, also, there are several large factories, making unbleached cottons, half-linens, and shirtings. Here are some dye-mills, too.

At Amersfoort there is an article much in vogue for under-clothing; cotton tricots also form a considerable part of the business of that town.

In Hengelo there are large weaving sheds for checks, and the goods there produced are specially intended for the Dutch Indian market. Wierden has got part of this trade.

In Neede and Haaksbergen are some factories of a considerable size, which produce much bleached and unbleached linen and half-linen for napkins.

In Borne is a good-sized factory making the same articles as Neede, Haaksbergen, and Enschedé.

Nyverdal possesses a very large mill, where unbleached cotton, water-twist, and cambric are made.

At Oldenjaal there is a hemp spinning factory and two weaving-sheds for export cambrics, drillings, and shirtings.

Ryssen has a large hemp spinning-mill and weaving-sheds.

At Goor are large sheds for check-weaving intended for export, and there is also a weaving-shed for fishing nets.

Further in Twenthe there are large bleacheries, the most noted at Goor and Nyverdal, and new ones are being started. There are still more manufacturing villages, besides those mentioned above, in Twenthe, which may briefly be called the Lancashire of Holland. The manufacturing industry has, of late years, made rapid strides.

The province of North Brabant possesses many factories, though the articles there produced are quite of another kind.

Tilburg ranks first, producing large quantities of baize, beavers, and flannel. Buckskins, cloths, duffels, friezes, and such like articles, which were formerly only made of the most ordinary qualities, are now made of a better quality and in large quantities. Indeed, this is the most prosperous and thriving district in the whole country.

At Geldorp and Eindhoven, besides the buckskin-mills, there are also others for petticoating and apron stuffs.

At Helmond are many weaving-sheds for checks, both cotton and linen. Most of these are worked by steam. There are also three dyeing houses of importance in that place. The largest print-works in Holland are in this town. Furniture prints, chintzes, calicoes, and drills are made in large quantities, and special attention is paid to render them suitable for the Indian market. Lately, both in this province and Limburg, special attention has been given to the blanket trade. Leyden, in South Holland, is the great seat of the blanket trade, and there, also, knitting yarns and worsted and cotton yarns are chiefly produced. There is, moreover, a large establishment for printing calicoes and cotton goods, both for home and Indian consumption.

Kralingen, near Rotterdam, possesses a large print-work for calicoes and furniture stuffs.

Hilversum, in North Holland, is the seat of the carpet industry, and has one mill for unbleached cottons and drillings.

At Arnheim, in Gelderland, there is a moderately-sized factory for cotton, woolen, and linen tapes, and such like articles.

Veenendaal, in the province of Utrecht, has a factory of some importance for woolen yarns as well as weaving-sheds for cottons.

To show what sort of data or material I can manage to gather for reports upon the manufacturing industries of the country, and such only by dint of much exertion and by availing myself of the advantage of my long residence

here and a widely extended acquaintance among representative manufacturers. I further submit herein copies of several communications received by me in answer to requests for the information on the subject. The next following is from the proprietor of one of the principal cotton-mills at Enschedé. It is a copied version, the original being in the English language:

We have will to reply to your favor of the 10th inst., and beg now to send you a few particulars about the cotton trade in 1882. We are glad to say that the cotton industry has generally been much better than in the year before. The Java markets, which are of such importance to our trade, have consumed the goods as they arrived from the country, and are still taking all fair quantities, although just now they are showing signs of stopping. The same trade has continued to take an average quantity of goods, and we think, will continue to do so for some time.

GENERAL MANUFACTURING INDUSTRIES.

From a list before me, kindly supplied by the proprietor of a publication devoted in part to the matters herein treated, I now give a statement showing some of the Netherlands' chief manufacturing industries, where located, and the products of which figure more or less extensively among the exports from the country.

Cottons.—Cotton-mills, spinning and weaving, as well as bleaching, dyeing, and printing establishments, are situated at quite a number of places in several provinces, but the principal seat of the cotton industry is located in a section of country called "Twente," in the province of Overyssel.

Woolens.—Woolen goods in considerable variety, including large quantities of very fine blankets, are made in the cities of Helmond, Eindhoven, Veenendaal, and Leiden, but the main woolen industry is to be found at Tilburg, in North Brabant. Worsted goods, especially "say or serge," are rather extensively turned out at Leiden, where nine factories making such goods are situated.

Linens.—Linen goods, particularly for household and table use, and in considerable quantities, are manufactured at Neede and Haaksbergen. The former-named place is in the province of Gelderland, and the latter in the province of Overyssel. Linen articles of various other descriptions are also produced at Helmond, in North Brabant.

Carpets.—The carpet industry (imitation Smyrna), situated at Deventer, Overyssel, and at Amersfoort, in the province of Utrecht, is quite celebrated, and its products find a ready market, or, rather, are made to order for customers in many European countries. The carpet factories at Hilversum, North Holland, supply more generally the home demand.

Leather.—The leather industry—tanning, boot and shoe making, and the manufacture of sundry other articles—is carried on on a somewhat extensive scale. It is chiefly located in North Brabant, at Tilburg, Boxmeer, but still more particularly in a section of that province named the "Langstraat" (Longstreet).

Diamonds.—The diamond industry—cleaving, cutting, and polishing—located at Amsterdam, it would almost seem superfluous to mention, its ex-

istence is so universally well known. It may, however, prove interesting to be stated that the paper from which this list is prepared speaks of nine hundred cutting and polishing establishments here, in thirty of which steam-power is used.

Gold and silver. — Gold and silver ware are, to a certain extent, produced for export purposes in the factories at Utrecht, Gonda, and Voorschoten.

Candles. — Candle making is also quite an important industry in this country, the factory at Gonda employing between five and six hundred hands, and there is, furthermore, a large factory at Amsterdam and another at Schiedam.

Glass and earthen ware. — The earthen-ware, glass, and porcelain manufacture is far from being trifling, as many articles, and large quantities of them, find their way, as I understand, to such foreign countries as France, England, Germany, Belgium, etc. The principal seat of the industry is at Masstricht, and for the so-called and well-known "blue goods" the factory or works of Hooft and Labouchére, at Delft, has, I believe, a world-wide reputation.

Distilleries. — The distilling interests of this country are very large. At Schiedam, where most of the gin is made, there are said to be over three hundred and fifty distilleries; nor is the industry confined to that place, as at Rotterdam and at other points the article is also produced in considerable quantities.

Liqueurs. — Liqueur distilling or fabrication is also very extensively engaged in at many places in Holland, but more especially at Amsterdam and Rotterdam. The product, in great variety, is exported to many countries in and out of Europe.

Breweries. — The brewing business, the making of so-called "Bavarian beer" and "stout," is quite large, and constantly increasing. The Amsterdam breweries product is to some extent exported to France, India, and other countries.

Yeast. — The yeast manufacture, situated, principally, at Schiedam and Delft, has acquired large dimensions. The article is exported in considerable quantities, mostly to England.

Chocolate. — The cocoa and chocolate industry forms an important interest, which seems to be very prosperous and progressive. There are large establishments for the production of these articles at Weesp, near this city, at Amsterdam, Rotterdam, and other places, and the export trade in them is regularly on the increase.

Machinery. — Machinery of various kinds is rather largely produced at works located at Amsterdam, Haarlem, Hengelo, Rotterdam, Fyenoord, and Flushing. Mills and factories, agricultural wants, and shipping are, to a considerable extent, supplied by them. Orders for machinery from France, Spain, Portugal, Italy, and Dutch India are said to be of frequent occurrence, dredging-machines having not long since been made for and sent to South America and to Central America — Panama.

Ship-building. — Ship-building has been, for a short time back, is just now, and is likely to remain for some time to come, more prosperous than for many

years last past. The yards have orders for various classes and sizes of boats and steam-ships intended for Rhine navigation and for the East India trade, etc. www.libtool.com.cn

Carriages. — Wagon and carriage making is also of more or less importance. Railway carriages and street-cars are made at Haarlem, and at Amsterdam and The Hague there are extensive carriage and wagon factories, the products of which not only largely supply the home demand, but are exported to India, and even to other foreign parts.

Starch. — Starch factories are found at places along the River Zaan and at Utrecht. This article, in moderate quantities, is also exported.

Cigars. — Cigar factories abound in great number throughout the country, but more particularly in the city of Eindhoven. The great domestic consumption operates as a "feeder" of the industry, and there is, besides, a not inconsiderable amount of export trade in the article, particularly with the colonies.

Canned goods. — The canned goods industry, or the putting up and preserving of eatables of very many descriptions (*verduurzaamde levensmiddelen*), has, within a few years last past, become quite an extensive interest. It is carried on at Amsterdam, Rotterdam, Leiden, Haarlem, and at still other places. Large quantities of the different sorts of goods, put up in stone, tin, and glass, are exported to the colonies, and to some extent to other countries.

Butterine. — The artificial butter or butterine industry, of comparatively recent origin, has attained, as is generally well known, huge proportions. The number of large factories is variously stated. I read of as many as from forty to fifty, and they are established at different places and in nearly all sections of the country. The annual output of the article is enormous. One of the prominent dealers here in oleomargerine furnished me some time ago an estimate of the value of the product for the year 1887, which reached the sum of 75,000,000 florins. The great bulk of it is exported to England.

Paper. — The paper fabrication is also quite deserving of notice. There are mills established at more than a dozen places, and, taken together, they turn out nearly every kind of paper, inclusive of wall-paper. Straw paper is said to be extensively exported to England, printing and writing paper does not find a foreign market to the same extent, whereas, hand-made paper in considerable quantities is shipped to England, France, and other countries, where it is much in favor for use by publishers in bringing out especially elegant works, and for official documents which are required and intended to be preserved for long periods of time.

Quinine. — Quinine is produced in this country. A large factory making the article is established at Amsterdam, and it is extensively exported.

Sugar. — The very important interests of sugar refining and coffee and rice hulling and polishing may, perhaps, also properly be classed with the manufacturing industries of the country.

I have now finished translating and transcribing the list above alluded to and which purports to contain an enumeration of the manufacturing industries of this country, the products whereof are more or less exported as well as for home consumption. I am not quite satisfied that the statement is really a complete one, but am under the impression that there exist still other industries which ought to be mentioned. At any event I deem it in place to remark that in addition to the above there are manufactured in Holland a great number of articles which go to supply the domestic demand, wholly or in part.

It is known to me that there are two factories, one at Amsterdam and another at Haarlem, making different kinds of india-rubber or caoutchouc goods, and even a corset factory, employing several hundred girls, at Amsterdam.

Furniture of every class and description is manufactured in many places, in nearly every section of the country; and so are billiard tables, pianos and organs, sewing-machines, and iron safes among the articles manufactured in Holland.

Rope and sail making is largely carried on, whilst the making of fishing nets forms a sort of house industry, in which the fishermen of the country are engaged during the winter season.

CONDITION OF THE WORKING PEOPLE.

The gentleman who prepared for me the statistics covering the textile industries, inserted in the first portion of this report, has also kindly prepared the following concerning the condition of the work-people of Holland:

This, we think, has rather improved, compared with the year before, because there has been a constant good demand for labor, and, as a rule, full wages have been paid, while at the same time there has been a tendency among manufacturers to limit the hours of labor and to pay more regard to the wishes and wants of their work-people. There is, as you will be aware, a bill introduced in our second chamber to legislate the hours of labor for young people under thirteen years of age, of women under eighteen, and to restrict the hours that the latter may be worked. We think that this measure will, with some alteration, become law, and, if it is not followed up by other legislation, it may work well.

Should the Government, however, feel induced to take more stringent measures, we fear that it may cause injury to our trade. However well meant Government measures for the benefit of the work-people are, in very many cases they do more harm than good by injuring the trade itself and thus restricting employment.

The strike in our town has terminated with the submission of the hands, who were very unreasonable in their demands, being under the influence of socialist agitators. When their real or pretended grievances had been removed by their masters, the Messrs. Jannink, they made fresh and most unreasonable demands. The masters did all they could to settle it amicably, but as the hands refused they took up a firm attitude, and, being well supported by the other manufacturers, the hands gave in. About twenty of them, the worst agitators, confirmed social democrats, were locked out and have been obliged to leave this town.

Altogether, we think we may look back upon 1888 as a reasonably prosperous year for the cotton trade of this district.

THE DIAMOND INTEREST.

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The proprietors of one of the largest diamond-cutting establishments here kindly furnished me some notes relating to the trade and industry of rough and polished goods, and, thinking they may be of some utility to parties in the trade in the United States, a verbatim copy of them is here appended, the original being in the English language:

In December, 1886, we had the pleasure of handing you a report of the diamond trade and diamond industry in this city, to which we have not now much to add. In that report we pointed out that several companies had been formed with a view to combining the claims which were then being worked either by private individuals or by companies with small capital. This has since been effected on a large scale, so that we can now state that mining business is, with a few exceptions, in the hands of companies, who work the mines systematically and regulate the supply of rough diamonds, while, by carefully noting the state of the market they prevent excessive fluctuations.

Hence we do not hesitate to say that the prices of rough diamonds have not been subject to any important variation during the past two years included in this report. Only when there was but slight demand for cut stones the prices were sometimes lower; but as soon as the demand increased, either in consequence of the low quotations or from some other cause, the prices of rough stuff rose accordingly.

In the following list we give the names of the diamond companies whereof the stock is regularly dealt in: De Beers, Anglo-African, Griguland-West, United, Bullfontein, South African, New Consolidated, Spes-Bona Bullfontein, with a total capital of £7,833,060. There is very much speculation in these shares, and also in those of the Transvaal gold fields, although, as a rule, the merchants of Amsterdam do not take part in it.

Cut diamonds. — Amsterdam still remains the principal market for this article. It is becoming more and more general for American, Russian, and French merchants to come here to buy. The latter come here nearly every week, while the Russian merchants stay here for several months together. The middle-men, such as brokers, and more especially commission agents, are making every effort to draw the attention of foreigners to Amsterdam, and offer buyers great facilities, such as guarantying the credit, when very trustworthy foreign houses buy for future delivery, and by sending goods on approval; besides which they offer special rooms, where foreigners have their temporary offices.

It is, however, difficult to send articles on approbation to America on account of the high duty; consequently only articles of fixed market price and quality can be sent to that country.

It is not likely that the market for cut stones will be transferred from Amsterdam to some other city in the near future, as the cutting of large quantities of rough diamonds necessarily produces different qualities, ranging from $10 to $100 per carat and higher. All these different qualities find a ready sale in Amsterdam in consequence of the various demands of the numerous foreign buyers who come here.

As a rule, America buys only the best articles as regards purity of water and excellence of workmanship. Europe comes next, with a demand for medium sorts, while the inferior goods are sold to the remaining markets. The certainty of finding a sale for all the various qualities enables manufacturers to fix the prices of their goods according to the market value, while if the market were removed to another city, less accessible to merchants from the different countries, the goods in general demand would have to be raised considerably in price in order to reduce the prices of the less salable sorts as much as possible. This would be an insurmountable obstacle, especially at first, on account of the very large amount of even inferior articles produced.

The above-mentioned circumstances, which caused the stability in the prices of rough diamonds, also prevented any serious fluctuation in the quotations of cut stones. A tendency to

a slight fall was noticeable; consequently the prices were not always in proportion to those of the rough material, and sometimes forced realizations produced a loss.

It must further be remarked that the demand for brilliants from 3 carats upwards has very much diminished, so that holders will not be able to sell without incurring a heavy loss. It would be useless to give a list of the prices paid for brilliants during the past two years, as each diamond is separately valued according to its water, purity, brilliancy, and the good proportion of the facing. Thus, a lot of 1-carat diamonds is worth from $30 to $80 a carat, according as it answers to the above requirements.

Regarding the diamond industry, we may remark that the competition between the workmen is continually becoming keener. The wages are feeling the effects of this. Only those who really excel in their work make an exception to the rule. Clever cutters of small diamonds can also still obtain the wages fixed in the preceding year.

The manner of cutting the stones was not altered, although sometimes a different form is attempted; but the "brilliant" form is still the most in demand, as all other shapes prove detrimental to the sparkling of the diamond.

THE SHOE AND LEATHER INDUSTRY.

The next following is a translated copy of a communication received by me from a gentleman residing at Waalwyk, North Brabant, and who is extensively engaged in the shoe and leather industry:

In answer to your esteemed letter of December 6, 1888, I beg to say that in my opinion the boot and shoe industry in Holland may be said to be improving in so far that the masters and workmen are becoming better acquainted with their business.

The production of 1888 was just about the same as in 1887, but the prices have been declining, and manufacturers have often suffered considerable losses in bad payments of storekeepers in the principal towns of the country. In fact, the shoe-shop keepers have the reputation of being among the worst payers of any tradesmen in the land. Had the raw material not also become cheaper the manufacturers would have been greater sufferers still.

The shoe making is carried on mainly by small manufacturers, employing two or three journeymen. These men work with next to no capital, live sparingly, and have customers who take the work off their hands at once for cash.

Next in rank are masters employing from five to ten men. This class has suffered most from a variable market, because they have been obliged to pay higher wages, and the success of former years had led them into a higher style of living.

Then the large factories, which make use of machinery to a certain extent, employ from fifty to one hundred workmen. Some of these devote themselves entirely to making military boots and shoes, while others, again, do the general trade. The latter employ one or two travelers, or agents, who sell the article by sample.

This is, in fact, worthy of mention as a system only lately introduced into the shoe trade of Holland. Formerly it was never heard of, orders being given by letter, only when the master felt inclined to a change and a holiday he would start off in search of one or two new customers, for then it was the custom to work for one or more large buyers. This change we owe to foreign competition.

Foreign uppers, or vamps (*leestklaar werk*), are still imported in large quantities, but the importation of ready-made boots and shoes has steadily decreased for the last couple of years.

The large manufacturers are succeeding well, as one may see by the successive enlargements taking place on their premises. Their work-people are thriving and prosperous, and skilled workmen well paid; also, the work is so arranged as to keep them employed all through the winter. Very few unemployed are to be found among the journeymen shoemakers, and still fewer among the tanners.

Tanners have been as busy in 1888 as in 1887. Hides have fallen in price, which has incited them to take advantage of the market. Time will show whether they have acted

wisely. Doubts are expressed on this point, as prices are still falling, and the quantity of hides in the principal markets of Europe is ever on the increase. Dutch tanners can no longer export their leather, because of the high duties levied by the foreigner. However, the import of foreign leather is not increasing. The prospects in the near future are, in my opinion, not very brilliant for tanners, either in this country or any other.

In this trade many changes have taken place of late years. Up to ten years ago every tanner followed the system of his predecessors. Now, however, the oak bark is to a great extent replaced by garonillé, African root bark, valonia, mimosa, and mirabolane. Extracts are used, as, for instance, oak wood and chestnut wood extracts, which are chiefly applied in tanning sole-leather. As a rule, very good sole-leather is produced. Less attention is paid to the production of leather for uppers. The tanners of horse hides, however, form an exception to this rule.

In the district of Waalwyk there are several large tanneries specially for horse hides, and one of these has made a name for its "tops" for top-boots. All these tanneries are doing a profitable business. They chiefly use extracts and other imported tannin in conjunction with oak bark. This oak bark is mostly of native growth.

THE IRON INDUSTRY.

The owners of a large rolling-mill at The Hague have recently, and very briefly, favored me with some information in writing regarding the state of the iron industry, which, in substance, amounts to this:

That in general the iron industry of the Netherlands was in 1888 in a languishing condition, without any apparent prospect for an improvement in the near future. It should, however, be observed that the best ship-builders were well employed, and booked some Government and other orders for the current year.

That there seemed to be large numbers of workmen out of employment who would willingly have worked for reduced wages; but such was not the case at their place—The Hague—where about an equal number of hands were employed and where their wages remained about the same as in 1887 and before. Orders came in slowly throughout the year, and they at low prices, owing to strong competition at home and from abroad.

CONCLUSIONS.

My purpose in preparing and submitting the foregoing being no other than to report as nearly correct and full information respecting and showing the different classes of goods produced by the present existing manufacturing industries of Holland as facilities for so doing admit of, and to demonstrate that the industries in question constitute a far greater interest than is usually and comparatively accorded to them, I persuade myself that I have, in a measure at least, accomplished it.

D. ECKSTEIN,
Consul.

UNITED STATES CONSULATE,
Amsterdam, March 13, 1889.

SUGAR INDUSTRY AND TRADE OF THE NETHERLANDS.

REPORT BY CONSUL ECKSTEIN, OF AMSTERDAM.

Several weeks ago I solicited of the directors of a sugar refinery of this city some data or information relating to the sugar industry and trade in 1888.

Since then I received from them, in compliance with my request, and to my gratifying surprise, quite a lengthy communication in English, the contents of which I regard as most interesting and valuable, and so complete in substance and form as to induce me to subjoin hereunto a verbatim copy of it.

D. ECKSTEIN,
Consul.

UNITED STATES CONSULATE,
Amsterdam, February 22, 1889.

[Inclosure in Consul Eckstein's report.]

AMSTERDAM, *January 25, 1889.*

SIR: In reply to your esteemed favor of December 4, ultimo, wishing us to place you again in possession of some information relating to the Dutch sugar industry and trade, we beg to give you the following particulars:

The disproportion between the relative values of raw sugars and refines which ruled throughout 1887 still continued during the first months of 1888, the margin being altogether insufficient for working. All the Dutch refiners have been compelled to reduce their production during the latter part of 1887 and the first trimester of 1888. If prolonged, this state of things would surely have driven them to suspend work.

In April a recovery took place, and, owing thereto, full work has been resumed and carried on during the latter part of the year.

According to the official returns the quantity of duty-paid raw sugar (melted in the Dutch refineries) imported from abroad and grown in our own country amounted to 124,996 tons during 1888, supplied by the following countries:

	Tons.
Belgium	29,614
Germany and Austria	66,574
United Kingdom	947
Java and Surinam	589
All other countries	1,197
Total imported	98,921
Dutch growth	26,075
Total	124,996

Against during 1887, 126,252 tons; 1886, 123,636; 1885, 139,382; 1884, 136,263.

Our exports of refines amounted to 85,744 tons, having the following destinations, viz:

	Tons.
Belgium (chiefly in transit to River Plate)	7,244
Germany (chiefly in transit to Switzerland)	4,389
Hamburg (chiefly in transit)	251
River Plate	1,598
Scandinavia	4,525

	Tons.
United Kingdom	67,391
All other countries	346
Total	85,744

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Against during 1887, 88,759 tons; 1886, 75,368; 1885, 80,801; 1884, 92,047.

The above statement indicates that Dutch refines chiefly are finding their outlet in the United Kingdom. The whole quantity of foreign refines imported into that country amounted to 315,000 tons during 1888; of course, our share thereof was 21 per cent.

Although our position in the British markets has improved on account of the falling off of American imports, which in 1888 only reached 10 per cent. of the figure of 1886, we fear this improvement will be very temporary, as the increasing imports of other bounty-fed sugars (from Germany and France) are neutralizing the useful effect of the drying up of the American source.

For our unprotected sugar-refining industry it is to be hoped no obstacles will occur to obstruct the proper course of the contract signed by the delegates of the governments which kept last year an international sugar conference in London for the purpose to take such measures as shall constitute an absolute and complete guaranty that no open or disguised bounty shall be granted on the manufacture or exportation of sugar.

If this convention (on which some restrictions have been made on the part of France and Austria-Hungary) might go into operation, competition between sugar industrials will be a fair one, which we can enter upon with the reasonable prospect to keep our legitimate share of the sugar trade. If not, a struggle against our subsidized competitors will be most difficult.

No alterations have been introduced into our sugar duty system during 1888. In a short time, however, a bill is to be expected from our treasury department for the purpose of abrogating, in accordance with the principle of the London convention, any protection granted by our actual law to Dutch sugar manufacturers (growers).

The value of sugar has gone, in 1888, from a higher to a lower level; at no time, however, has the minimum of 1887 been reached, and for the greater part of the year quotations have come more within the upper than the lower range of value. The average, therefore, of the entire year is exceeding its predecessor, and this feature, from a grower's point of view, is a step in the right direction.

Besides this, it should be borne in mind that, pressed by the hard times, producers generally have introduced economics and improvements in their factories, and, on the other side, enhanced their productiveness, by which the general expenditures and the cost-price of sugar have been reduced. On the whole, beet-sugar making has been a paying business in 1888.

The average value of 88° beet-sugar has been, during 1888, 17 florins,* against 15 florins in 1887; the maximum price was 20 florins, the lowest 15¼ florins, as is exhibited by the following statement per 100 kilograms:

1888.	Highest.	Lowest.	1888.	Highest.	Lowest.
	Florins.	*Florins.*		*Florins.*	*Florins.*
January	20	17¾	August	18⅛	16⅞
February	18⅛	17¼	September	18¼	16⅛
March	17⅝	17¼	October	17	15⅛
April	17¼	16⅜	November	16⅛	15¼
May	16⅜	15⅛	December	17⅜	16⅛
June	17	16	Average	17	.....
July	17¾	16⅞			

The proceeds of the sugar duty collected by our Government have been 8,209,493 florins during 1888, against 8,480,148 florins during 1887, 7,991,233 florins during 1886, 7,860,238 florins during 1885, and 5,846,982 florins during 1884.

* 1 florin = 40.2 cents.

We hope the above particulars may prove of some interest to you and, if necessary, we are ready to give you further elucidations.

In the meantime we are, sir, yours most truly,

De Hollandsche Suikerraffinaderij,

(Signed) J. H. G. FERMAN, Jr.,
G. E. J. HAM.

D. Eckstein, Esq.,
United States Consul, Amsterdam.

BOUNTY TO EXPORTERS OF FRESH MEAT.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

EXPORTS OF BEEF PRODUCTS.

The principal industry of the Argentine Republic continues to be the raising of cattle and sheep. The total number of sheep now in the country is estimated at 80,000,000, and the number of horned cattle at 20,000,000. As the sheep are raised principally for their wool, of course the prosperity of the sheep industry depends upon the foreign demand for that staple. But for several years the Argentines have been at a loss what to do with their surplus cattle, after supplying the home consumption. Heretofore the stock was kept down by the *saladeros*, or slaughtering establishments, which utilized the carcasses in the preparation of what is called *charque*, or jerked beef. For this they found a ready and profitable market in Brazil and Cuba, where it was used as food for the lower classes, while the bones, tallow, etc., were shipped to Europe. The extent of these shipments for the last ten years will be seen from the following figures made up by the statistical office:

Year.	Jerked beef.	Tallow.	Bone-ash.
	Tons.	*Tons.*	*Tons.*
1878	36,600	21,897	39,231
1879	32,336	15,454	36,430
1880	26,116	11,868	27,692
1881	22,412	10,687	34,763
1882	26,966	18,434	28,212
1883	21,543	15,814	25,798
1884	18,869	14,335	28,255
1885	32,055	23,260	35,423
1886	37,388	12,701	21,369
1887	23,984	7,170	23,546

I have not the figures for 1888, but they are smaller than those of 1887. From these figures it will be seen that while in the last ten years the number of horned cattle have increased from 15,000,000 to 20,000,000, the exports have fallen off from 97,728 tons to 54,700 tons, a decrease of nearly one-half. It is well known that for several years the Argentine slaughtering establishments have been losing money, and a number of the largest have been compelled to close. Ten years ago nearly half a million of cattle were slaughtered annually in the province of Buenos Ayres alone. Last year the number did not exceed 100,000.

DECREASE IN THE VALUE OF CATTLE.

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Owing to this decrease in the demand for jerked beef, the cattle industry has become greatly depressed. Whilst the number of horned cattle has been annually increasing, as there was no demand for their carcasses, the price has been annually getting less until, from $12 to $20 a head, they are now a drug in the market, at from $3 to $6 a head. In other words, they are selling now for but little more than the value of their hides; and this in spite of the large numbers which have been required for opening up new *estancias* on the frontiers.

REPEAL OF THE EXPORT DUTY.

In this emergency the Government has been called on to interfere in behalf of the cattle *estancieros*. The first move in their behalf was to abolish the export duty, amounting to 4 per cent., on the product of the slaughtering establishments. With the repeal of this duty, there was a temporary spurt given to the *saladero* interests, as will be seen from the shipments for the years 1885 and 1886; but for the last two years the falling off has been very marked, and at last the idea has occurred to the cattle farmers that instead of jerked beef they must send fresh beef to the markets of the world, and that if this can not be done there is no salvation for the cattle industry of the country.

BOUNTY TO EXPORTERS OF FRESH BEEF.

In this view, at the last session of the Argentine Congress, a law was passed by the terms of which the National Government offers a guaranty of 5 per cent. for ten years on the capital employed in the business of exporting beef, "either in a fresh state or preserved by processes not injurious to health." As a matter of no little importance to the cattle interests of the United States, I give the law in full below:

GUARANTY OF 5 PER CENT. FOR TEN YEARS.

ARTICLE 1. The executive is hereby authorized to grant an annual guaranty of 5 per cent. for ten years on the capital of companies formed for the purpose of exporting beef, either in a fresh state or preserved by processes not injurious to health.

ART. 2. The total capital on which such bounty may be paid is hereby limited to $8,000,000 national currency, and no larger amount than $1,000,000 nor less than $500,000 can be guaranteed for a single company. The guarantied capital shall be distributed as follows:

For meat factories in Buenos Ayres province, the capital of the Republic, and Pampa territories	$3,500,000
For those in Santa Fé	1,500,000
For those in Entre Rios	1,500,000
For those in Corrientes	1,500,000

ART. 3. Companies desirous of availing of the benefits of this law must petition the executive for the guaranty, in the form prescribed in the reglamentary decrees in reference to it. Should the applications exceed the capital fixed in article 2, they will be dealt with in the order in which they are presented, and in cases where the date is the same lots will be drawn for the preference.

ART. 4. No guaranty will be granted until the executive shall first have approved the estimates for the installation and materials of the company and the amount of capital with which it proposes to work, and all this must be set forth in the deed of agreement between the State and the company.

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ART. 5. Guarantied companies must reserve at least 20 per cent. of their capital for subscription in the Republic.

ART. 6. They shall be likewise bound: (1) To have in the Republic a board of directors, the members of which reside in the country and hold a recognized social, commercial, or industrial position; (2) to keep their books and accounts in Spanish; (3) to establish their legal domicile in the Republic; (4) to furnish the executive with all the data and information it may ask for, and in conformity with whatever rules may be established for the better enforcement of this law.

ART. 7. The executive shall determine, when drawing up said rules, and according to circumstances and the general state of the industry on which the guaranty is given, the minimum weight of beef that must be exported yearly in relation to the guarantied capital of each company.

ART. 8. The calculation of the profits for the purpose of guaranty shall include the working of all branches of the business, such as hides, bones, horns, ash, tallow, extract, and all other uses whatsoever to which the animal can be turned. The companies must lay before the executive a detailed account of their working during each past year, to enable the guaranty to be calculated.

ART. 9. In the contracts shall be set forth the annual amount of the gross receipts to be written off for wear and tear of the working plant, in accord with those scientific and commercial rules generally accepted in the matter.

ART. 10. The executive will appoint for guarantied companies inspectors, with such powers as may be conferred on them in the reglamentary decrees, to enforce the due fulfillment of the contracts; the salaries of such inspectors to be paid pro rata by the companies interested. The data given to the inspectors shall be held secret, and only used to the extent necessary to ensure the carrying out of this law.

ART. 11. Guarantied companies shall be exempted from all national and provincial taxation for the time the guaranty contract is in force.

ART. 12. Guarantied companies shall be subject to all rules in reference to safety and health that may be enacted by the competent authorities.

ART. 13. When the net profits exceed 5 per cent., the overplus shall be devoted to the repayment, with interest, of the advances made by the Government in the shape of guaranty; but those companies that may be established during the first year in which this present law is in force shall be exempted from this provision for a period of three years.

ART. 14. Guarantied companies shall have the right at any time to throw up the guaranty, having first made arrangements with Government to repay the amounts advanced.

ART. 15. Law No. 2234, of November 20, 1887, is hereby repealed in so far as it refers to the export of live horned cattle or fresh beef.

ART. 16. The cost of putting this law in force shall be defrayed by the sale of public lands.

ART. 17. The executive shall draw up rules for putting this law into force.

ART. 18. Let this be communicated to the executive.

Given in the sessions hall of the Argentine Congress this 3d day of November, 1888.

REGULATIONS UNDER THE BEEF BOUNTY LAW.

In pursuance of this law Vice-President Pellegrini, in the absence of the President, has issued the following decree to regulate the payment of the bounties provided for:

Whereas it is necessary to regulate the application of the beef-bounty law promulgated in November, 1888, the Vice-President of the Republic decrees—

APPLICATIONS.

ARTICLE 1. The capital and guaranty alluded to in this decree are understood to be in gold, as likewise the service on the guaranty. The total guarantied capital must not exceed $8,000,000, as follows:

Province of Buenos Ayres, capital, and Pampa territory	$3,500,000
Santa Fé	1,500,000
Entre Rios	1,500,000
Corrientes	1,500,000

The capital of one company can not exceed $1,000,000, nor be less than $500,000.

ART. 2. In all applications for guaranty the following must be specified:

(1) The name and domicile of the legal agent of the company.
(2) The name of the district in which the establishment is situated.
(3) The amount of capital.
(4) The detailed conditions of the concern.
(5) The minimum number of kilograms of beef the company export annually.
(6) The estimates of cost of 1 ton of beef.
(7) Loss in wear and tear of machinery, etc.
(8) Salaries paid to staff and board of directors, if any.

ART. 3. All applications must be sent to the finance minister. If the applications for guaranty exceed the amount assigned by law to the respective district, such applications shall be considered by order of date, and no attention shall be paid to those applications not drawn up in accordance with article 2.

ART. 4. In the case of several applications being presented from one district, preference shall be given to the most important zone of that district. The procurador-general shall be consulted on the question, and also the Rural Society.

ART. 5. The decision in the case shall be published in a newspaper in the city. Should the decision be favorable the company, within six days, shall deposit in the National Bank $5,000 in gold as guaranty of good faith, and five months shall be allowed to present plans, etc.

ART. 6. The decree annulling any concession shall be published in a newspaper in the city, in order that the companies whose applications have been thrown out may have an opportunity of applying a second time for the guaranty. The applications shall be considered and a decision shall be given under the conditions already stipulated, preference being given for twenty days to those companies whose former applications have been thrown out.

CONTRACTS.

ART. 7. The contract, independently of the conditions mentioned in article 2, must specify:

(1) The time required for the opening of the establishment.
(2) The minimum quantity, in kilograms, of beef which the company propose exporting per annum, under penalty of forfeiting the guaranty.

ART. 8. For the purposes of guaranty the companies shall present, every quarter, a detailed account of their capital paid up. If, on the signing of the contract, all the shares have not been placed, three months shall be allowed for total payment of the subscribed capital, which term may be extended to six months.

The contracts must also be drawn up in accordance with conditions 2, 3, and 4 of article 6, and articles 8, 10, 11, 12, 13, and 14.

THE GUARANTY.

ART. 9. The guaranty extends over the capital invested in the establishment, the cost of working, the salaries of the staff, and the ready capital employed by the company, and is limited to a maximum of 5 per cent. per annum of the total sum, which must not exceed the amount assigned to each company.

On the 2d of January of each year the company shall present a sworn statement of the amounts of their capital, upon which the guaranty shall hold good.

ART. 10. The statement already mentioned shall contain an account of the returns and expenses in resumen approved by the inspector.

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ART. 11. Should the losses sustained by a company affect its capital, Government shall be at liberty to demand all data and details with a view to ascertain the cause, and in the case of said cause being bad management a committee shall be appointed to make all requisite reforms. In the event of continued bad management the Government shall be at liberty to suspend the guaranty. It is understood that all reduction in the capital shall entail a corresponding reduction in the guaranty, which must never exceed 5 per cent.

INSPECTORS.

ART. 12. The inspecting staff shall comprise one head inspector and five assistants. The head inspector shall be the first to inspect the annual statements of the company, and shall see that the law be carried out. The five inspectors shall be employed as follows: Two in the city, province of Buenos Ayres, and Pampa territory, and one for each of the three other districts.

ART. 13. The head inspector shall be named on the opening of the first establishments, and his assistants according as their services are required.

ART. 14. Salaries shall be fixed by the Government, and paid pro rata by the companies. No one can be named inspector without a guaranty of $10,000.

ART. 15. The companies shall keep their books and accounts in the language of the State, and shall place said books and accounts at the disposal of the inspector when required.

ART. 16. The inspectors shall be at liberty to inspect the establishments at any moment, and shall be compelled to inspect them at least twice a month.

SUNDRY PROVISIONS.

ART. 17. The board of directors alluded to in article 6 shall comprise the number of members stipulated in the statutes, which number must be at least three.

ART. 18. In all questions between the State and the companies the Rural Society shall be consulted.

ART. 19. Let this be published, etc.

PELLEGRINI.

W. PACHECO.

EIGHT MILLIONS FOR TEN YEARS, ETC.

Under these regulations it will be seen that the guaranty of 5 per cent. will be paid in gold; that the entire amount to be guarantied shall not exceed $8,000,000 of national money; that parties applying for the guaranty for any particular establishment must give full details as to owners, the form of operation, the amount invested, the quantity of meat it is proposed to export annually, estimates of costs per ton, etc.; that all applications for the benefit of the law must be made to the minister of finance; that the largest amount of capital guarantied in any one establishment will be $1,000,000 and the smallest $500,000; that when two or more parties ask for the guaranty in the same district the wants and particular circumstances of the district will be taken into account, so as to make the privilege as extensive as possible; that where an application is granted the petitioners must deposit the sum of $5,000 in the National Bank as a guaranty of good faith on their part; that all establishments which come under the guaranty must present a quarterly account of operations; that a board of inspectors shall be appointed,

who will exercise periodical supervision of the books and accounts of the different establishments, and in case questions shall arise between the Government and the establishments the same shall be submitted to the Rural Society for settlement.

PREPARING TO OPERATE UNDER THE LAW.

It is understood that several establishments are now preparing to take advantage of the guaranty thus provided by the Government, and that they are going into the export of fresh beef on a very large scale, with special steamers duly fitted up with all necessary machinery for freezing and stowing their cargoes. They will have warehouses both in England and France for receiving and marketing the beef. The average time of passage of these steamers will be about twenty-five days. It is hardly necessary to add that the Argentines are expecting wonders from the benefits which these bounties will confer upon the cattle industry of the country, and are already anticipating that it will now take a new departure of prosperity.

HOW THE BOUNTY WILL AFFECT SHIPMENTS FROM THE UNITED STATES.

How far the Argentines will, with their 5 per cent. bounty, be able to interfere with the fresh beef shippers of the United States remains to be seen; but, until new methods are adopted here for the preparation of beef for exportation, I do not think that the law will produce any great competition. At present what is known as stall-fed cattle are quite unknown in this country; all bullocks for the market are taken directly off the grass, and, of course, the meat is soft and watery. Until they discover that such meat will not bear profitable exportation, and learn that dry food is absolutely necessary in order to prepare fresh meat for foreign markets—especially for the long distance which it has to be transported—I doubt if the present movement of the Argentine Government for a 5 per cent. guaranty on the exports will have any perceptible effect upon the cattle business of the United States.

E. L. BAKER,
Consul.

UNITED STATES CONSULATE,
Buenos Ayres, February 11, 1889.

PORT WORKS OF BUENOS AYRES.

REPORT BY CONSUL BAKER.

At last I am able to announce that Buenos Ayres has a port. The standing joke, first perpetrated by the late President Sarmiento, that "the people of this city were called *porteños* (belonging to the port) on the principle of contraries, because they had no port," is no longer applicable. It is at last an accomplished fact. There is no longer any necessity for even the largest class of ocean steamers anchoring 12 miles from the shore; there is no longer any necessity for paying the excessive charges for lighterage, sometimes amounting to more than the entire freight from Europe or the United

States, which during all these years has constituted such an enormous tax upon importations to the Argentine Republic. The first section, or basin, of what is to be a port large enough to answer all the necessities of the commerce of the country for centuries to come, was duly inaugurated and opened to the public yesterday.

HISTORY OF THE PROJECT.

The inception of the movement for the construction of this great work dates back half a century, to the days of Rividavia, the liberator of the country from Spanish rule, but the magnitude of the enterprise and the expense which it involved placed it then beyond the means of the infant Republic. It rested as an undeveloped idea until 1860, when Señor Eduardo Madero, one of the wide-awake, progressive men of the nation, presented himself to the Government and proposed to build a dock "in front of the viceroy's custom-house," and to dredge a channel thence to the deepest part of the River Plate. The proposal was submitted to engineers for examination, and a report was made by them approving the project. But here the matter rested. Congress doubted the feasibility of the scheme; or, in the unsettled political condition of the country, thought the time inopportune for embarking in the enterprise.

THE RIACHUELO PORT.

Meanwhile a counter-project was brought forward and approved, utilizing for the purposes of a port the Riachuelo River, a little stream (very like the Chicago River) which runs through the city and empties into the River Plate; and during the last twelve years the work of deepening the channel of this stream and building a mole, or levee, along the same has been steadily prosecuted by the Government. In connection with it a channel, or canal, has been dredged 6 or 7 miles out to the deep waters of the River Plate, capable of receiving vessels drawing 24 feet of water, thus affording a provisional port for the city and greatly assisting not only the river but the ocean commerce of Buenos Ayres.

THE MADERO PORT WORKS.

It was this provisional port which delayed and postponed the greater work which Señor Madero proposed. In the face of all the support he could bring to bear upon the scheme, and in spite of the approvals successively of Presidents Mitre, Sarmiento, and Abellenada, it was not until the administration of President Roca that the sanction of the national Congress was finally given to the project—just twenty-five years after it was first proposed. Upon the plans and estimates drawn up by Señor Madero the enterprise was quickly floated in England. On the bonds of the nation the means necessary to construct the work were secured without difficulty. The contracts were made, and in 1885 the work of construction was commenced. In the face of all manner of difficulties, and in spite of the repeated destruction of unfinished

embankments by southeast storms so common in the River Plate, the enterprise has never been permitted to stop for a moment, and gradually we have seen the great project assume its massive proportions.

INAUGURATION OF THE FIRST SECTION.

As I have said, the first section, or "south basin," as it is called, was duly opened and inaugurated yesterday. A great concourse of people assisted at the ceremony. There was a general flying of flags and a continuous firing of cannon. In the absence of the President from the capital Vice-President Pelligrini (whose father, by the way, was the first engineer who reported in favor of the port) represented the nation on the interesting occasion, and as one after another a fleet of great ocean steamers, headed by the *Admiral Bown*, the flag-ship of the Argentine navy, drawing 24 feet of water, moved down the channel and passed through the open gates into the basin the enthusiasm was intense, and cheer after cheer greeted their entrance. Amidst the flowing of wine and the offering of toasts Vice-President Pelligrini made the inauguration speech. His opening words were as follows:

I esteem it a high favor of fortune that I should preside over this ceremony and inaugurate, in the name of the nation, this first section of the port works of the capital. We have waited long for this movement, but its slow and laborious gestation is proportionate to the results which may be expected from the port when fully launched into active and vigorous existence. Of all the public works which have been the result of national effort none is greater, none more transcendental than this; for it is not only another feature of our progress, but the crowning work, which completes the fundamental attire of this emporium, and its beneficent action will not only be felt through the country at large, but it will extend its power to the neighboring republics. The work which we so auspiciously inaugurate to-day will, when completed, be the central point from which the iron rails will radiate across the Andine, the Bolivian, and the Paraguayan frontiers. Here, from all the far interior, they will meet at this focus of trade and industry, solidly forged to these docks that now form a new and stronger link in the world's commerce.

And he concluded thus:

I must not close without an expression of national gratitude to the promoters and executors of this great work. All honor to Rividavia, the greatest of Argentine statesmen, who, in the cradle of our national existence, decreed half a century ago that this was a work which must be done. Years rolled by, but the idea always lived. After sixty years of expectancy the Congress of 1882 voted the great law, and President Roca signed the contract. None supported Rividavia's idea with such energy, such persistency, such perseverance as Eduardo Madero; and in token of their appreciation of his labors the people have christened the port with his name, thus immortalizing him on earth for all time to come. His engineers, Messrs. Hawkshaw and Hayter, have here confirmed the reputation they had previously earned in their own country. In stating that this is the first great work in this country finished within the terms of the contract and within the original estimates, I give no faint praise to the contractors, Messrs. Walker & Co. In the name of the nation, I thank both engineers and contractors.

In the name of the Creator, the blessed source of all truth and fountain of all knowledge, I now open this basin to the national commerce.

The archbishop of Buenos Ayres then blessed the work, and Dr. Costa, the minister of foreign affairs, who stood sponsor for the work, concluded the ceremonies in a short speech, in which he spoke of the immense advantage

which the country would reap from the realization of this great enterprise, "destined to facilitate and stimulate the development of the commercial relations of the Argentine Republic with foreign countries;" henceforth, "it can no longer be said that the *porteños* of Buenos Ayres have no port," and "the joyful news of this colossal monument which the Government to-day opens to commerce is now being cabled to all civilized countries."

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WHAT REMAINS TO BE COMPLETED.

There are three other basins or docks, of equal size with the one just opened, in process of construction, connected by gates and with deep canals on each side, all of them approached from the outer roads through the channel of the Riachuelo. They are all progressing rapidly towards completion, and within two years it is expected that the entire port will be opened to commerce.

OFFICIAL PORT CHARGES.

The Government has to-day published a decree in reference to the charges for entering the basin. They are arranged as follows, to-wit: All ocean-going vessels, 10 cents per ton register for the first seven days, and 1½ cents for subsequent days; river steamers, of 50 meters and less in length, $10 per diem; upwards of 50 meters and less than 75, $15; upwards of 75 meters and less than 100, $20; upwards of 100 meters, $25 per diem. To this 50 per cent. will be added for loading or discharging.

E. L. BAKER,
Consul.

UNITED STATES CONSULATE,
Buenos Ayres, January 29, 1889.

ARGENTINE GRAIN SHIPMENTS.

REPORT BY CONSUL BAKER, OF BUENOS AYRES.

In regard to the exports of grain from the Argentine Republic for the year 1887, I have the honor to inform you that the official figures are as follows:

	Tons.
Exports of wheat	237,866
Exports of corn	361,848
Exports of linseed	81,208

Of this, it likewise appears that the shipments to the United Kingdom were as follows:

	Tons.
Shipments of wheat to Great Britain	145,948
Shipments of corn to Great Britain	177,769
Shipments of linseed to Great Britain	62,975

In regard to the amount carried respectively by steamers and sailing vessels, there is no data at my command from which I am able to obtain the information, for the reason that a large proportion of the vessels leaving this

country for foreign ports did not clear for any specified port, while many others cleared for Falmouth for orders. In many cases these orders sent the vessels to continental ports. Under these circumstances all I can do is to give the total shipments abroad, by steamer and sailing vessel, respectively, as follows:

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Ports of shipment.	Craft.	Wheat.	Corn.	Linseed.
Buenos Ayres	Steam	44,837	125,553	13,770
Do	Sailing	3,700	118,844	19,127
From all other ports	Steam	130,948	79,440	18,566
Do	Sailing	58,381	38,011	29,745
Total tons shipped		237,866	361,848	81,208

It appears, from the official returns of navigation, that during 1887 three hundred and eighteen steamers, with a total tonnage of 437,990 tons, cleared from Argentine ports for the British islands with cargo. During the same time, three hundred and forty-six sailing vessels, with a total tonnage of of 148,155 tons, cleared with cargo for the British islands. Of the latter, two hundred and thirty-one sailing vessels, with a tonnage of 99,759 tons, cleared for Falmouth for orders.

The average time of passage from the River Plate to Great Britain is thirty days for steamers and seventy days for sailing vessels.

E. L. BAKER,
Consul.

UNITED STATES CONSULATE.
Buenos Ayres, January 31, 1889.

NEW REGULATIONS FOR THE PORT OF LA GUAYRA.

REPORT BY CONSUL BIRD, OF CARACAS.

I have the honor to transmit herewith a copy and translation of a decree of the President of Venezuela, from which it will be seen that the port of La Guayra has passed under the management and control of the Breakwater Company, and that a schedule of import and export tolls to be levied on commerce is therein published and ratified by the Government.

WINFIELD S. BIRD,
Consul in charge.

UNITED STATES LEGATION,
Caracas, March 23, 1889.

[Translation of regulation.]

Dr. J. P. Rojas Paul, President of the United States of Venezuela, in use of the authority conceded him by article 1 of Law VI. of the code of Hacienda; and in consideration of the fact that the first section of the port and breakwater of La Guayra has been opened to the custom-house and commercial service in conformity with article 13 of the contract celebrated to that effect, that was approved by Congress May 12, 1886, decrees—

ART. 1. The Breakwater Company will, in the future, take charge of the embarkation, disembarkation, storage, and porterage of coastwise and imported merchandise and of the national productions to be exported, all under the orders and inspection of the employés of the custom-house and coast-guard under the formalities established by the laws, with the understanding that the chiefs of customs shall exercise complete fiscal jurisdiction over all the ground occupied by the works of the port and breakwater.

ART. 2. The company is authorized to engage the services of the launches that embark and disembark merchandise and products; but this service will continue subject to the rules of the police of the port and to the instructions that the collector of customs, in his character of port captain, may dictate to preserve order and regularity.

ART. 3. The freight handling party of the La Guayra custom-house will be disbanded in two months from the date of publication of this decree, which term is conceded to the laborers that compose it in order that they may seek employment in the said Breakwater Company, that has engaged to employ them, or in the service of commerce for the transport of merchandise and produce from the custom-house to the warehouses, or *vice versa*, or in any other work.

ART. 4. The Government approves the tariff established by the La Guayra Port and Breakwater Company, agreed upon with the commerce of the port, for imports, exports, porterage, and storage, embraced in the following terms:

IMPORTS.

(1) Dry goods, hardware, and other articles that pay duty, per 100 kilograms, 32.69 centimes.

(2) Provisions (except those classed in article 3) and foreign woods, per 100 kilograms, 28.84 centimes.

(3) Flour, rice, corn, beans, peas, and potatoes imported, per 100 kilograms, 19.23 centimes.

(4) Machinery, coal, cement, caustic soda, resin, tallow, stearine, and other similar articles, per 100 kilograms, 17.30 centimes.

Packages that weigh from 2,000 to 4,000 kilograms will pay double the tariff prices; those in excess of 4,000 will pay conventional rates.

On merchandise, etc., that may have been deposited in the warehouses or stowed on the grounds of the company to be again shipped, there will be collected per 100 kilograms, 3.846 centimes.

On pieces or packages that measure from 80 to 160 cubic feet there will be collected 25 per cent. more than the stipulated prices. Each 80 feet in excess will pay at the same rate.

Empty casks, bottles, boxes, demijohns, or other similar articles will pay 50 per cent. more than the price stipulated in article 1.

EXPORTS.

(5) Products for export and hides in bales, per 100 kilograms, 17.30 centimes.

(6) Loose cattle hides and horns, per 100 kilograms, 34.61 centimes.

COASTWISE MERCHANDISE.

(7) Entrance and clearance, per 100 kilograms, 19.23 centimes.

(8) Loose hides and horns, per 100 kilograms, 34.61 centimes.

A rebate of 10 per cent. on the above fixed prices will be made to coastwise vessels that are loaded or discharged at the wharves without assistance from the launches.

Storage, per 100 kilograms per day, 3.846 centimes.

Ground rent, per square meter per week, 7.692 centimes.

Ballast for embarking to ship's side, per ton, 1.44 centimes.

Baggage tariff.—For landing each passenger, with 50 kilograms of baggage, 96.15 centimes; for each kilogram of baggage in excess, 1.923 centimes; for porterage on baggage

to custom-house, railway station, hotels, warehouses, or private houses, per kilogram, 1.923 centimes.

ART. 5. It being necessary, for the continuance of the port works, that the use of the central wharf shall cease, it is declared closed. Said service will, in future, be carried on through the basin, wharves, and warehouses constructed by the company; and the examinations of all those articles that, on account of their excessive size, weight, and other circumstances, have heretofore been made at said central wharf will now be practiced in said warehouses.

ART. 6. Whenever the custom-house shall prescribe unusual hours, either on Sundays or feast days, for the dispatch of any vessel, the company will be obliged to furnish the service necessary for freighting or discharging said vessel.

ART. 7. The custom-house, coast-guard, and the company will punctually observe the laws of Hacienda in reference to imports, exports, and coastwise trade without other modifications than those indicated providing for the new form of conducting the traffic.

ART. 8. The minister of Hacienda is charged with the execution of this decree.

Granted, signed by my hand, sealed with the great national seal, and countersigned by the minister of Hacienda in the federal palace at Caracas, March 22, 1889.

J. P. ROJAS PAUL.

Countersigned:

J. M. LARES,

Minister of Hacienda.

BELGIAN MERCHANT MARINE.

REPORT BY CONSUL BUTTERFIELD, OF GHENT.

A comparison of the figures given in the table entitled "the merchant marine of Belgium," and annexed hereto, shows that the total number of merchant vessels at the end of any one of the given years has often and, on the whole, diminishingly varied; but the carrying capacity, as exhibited by the tonnage, with the exception of the periods comprised in the years 1857 to 1863 and 1866 to 1871, has, on the contrary, increased. It is noteworthy that the consistent decline in number and tonnage for the years 1857 to 1863 corresponds to the trade revival in England after the panic following the Crimean war and the crushing of the Indian mutiny. Thus, to the more active competition of Great Britain, the temporary falling off in Belgian shipping must probably be ascribed. In 1871 the yearly tonnage reached its ebb (26,004 tons), but the causes thereof are sufficiently indicated in the disturbance of commerce caused by the Franco-Prussian war. Since then, however, favorable progress has been the rule, and in fifteen years the tonnage has more than trebled, although the comparative difference in the number of vessels is but five (sixty in 1871, sixty-five in 1887). This eventual growth is probably due to the legitimate development of judicious enterprise.

It will also be observed that the class of boats has greatly changed, for in 1857 steamers formed less than 3½ per cent. of the entire fleet, whereas in 1871 the number rose to 20, and in 1887 to 84½ per cent. If we look to the origin and subsequent vicissitudes we find about 1⅓ per cent. launched in Belgium, over 1 per cent. condemned, 5 per cent. wrecked, and 7 per cent. sold to foreign buyers.

The classification table shows to what ports the vessels of the fleet belonged on the 31st of December, 1887, together with their tonnage.

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THE MERCHANT MARINE OF BELGIUM, 1857–'87.

Causes of increase and decrease of merchant vessels.

Dec. 31—	Launched.		Naturalized.		Wrecked.		Condemned.		Broken up.		Sales (foreign).	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
1857	11	6,705	6	2,651	8	1,748	3	745	.....	.....	6	6,399
1858	1	600	1	1,050	5	2,503	1	178	1	463	3	1,052
1859	1	180	6	1,641	8	2,379	2	937	.....	.....	3	487
1860	2	1,600	3	1,182	5	1,648	4	1,075	2	373	12	3,091
1861	1	315	1	117	4	1,090	2	796	.....	.....	1	776
1862	.....	.....	2	1,185	5	1,179	1	180	.....	.....	4	2,016
1863	1	600	3	1,613	5	1,324	3	1,445	.....	.....	2	1,169
1864	.....	.....	22	10,251	3	517	1	233	.....	.....	8	1,825
1865	.....	.....	13	6,248	3	427	1	526	.....	.....	5	1,032
1866	.....	.....	2	1,448	5	1,502	2	709	.....	.....	9	1,436
1867	.....	.....	10	5,321	4	684	1	1,274	.....	.....	13	3,691
1868	3	256	2	551	2	1,082	.....	.....	1	138	17	7,511
1869	.....	.....	7	5,000	2	946	1	824	.....	.....	6	1,677
1870	.....	.....	2	1,439	5	2,207	1	276	.....	.....	8	1,676
1871	.....	.....	4	1,096	4	1,542	1	187	.....	.....	7	3,614
1872	.....	.....	10	8,828	4	1,472	.....	.....	.....	.....	8	1,639
1873	.....	.....	15	16,713	1	645	.....	.....	.....	.....	4	1,922
1874	.....	.....	8	8,660	6	2,871	.....	.....	.....	.....	12	5,960
1875	3	4,131	6	4,408	5	4,313	1	645	.....	.....	3	576
1876	.....	.....	6	2,164	3	3,067	.....	.....	.....	.....	10	3,942
1877	1	896	8	7,341	1	285	.....	.....	.....	.....	6	3,205
1878	1	869	16	19,380	4	2,671	1	290	.....	.....	3	1,425
1879	2	875	8	13,390	2	1,603	.....	.....	.....	.....	4	899
1880	.....	.....	10	11,446	4	3,509	.....	.....	.....	.....	4	1,613
1881	.....	.....	5	10,094	5	4,691	1	593	.....	.....	7	3,621
1882	.....	.....	6	6,152	4	3,025	.....	.....	.....	.....	2	612
1883	3	2,844	4	10,492	4	8,647	.....	.....	.....	.....	3	1,214
1884	1	1,312	2	5,026	1	2,032	.....	.....	.....	.....	2	439
1885	1	1,343	6	9,364	1	1,103	.....	.....	.....	.....	5	5,120
1886	.....	.....	4	3,327	.....	.....	.....	.....	.....	.....	1	658
1887	.....	.....	4	4,495	1	690	1	865	.....	.....	4	3,455

Actual condition at end of each year.

December 31—	Number.			Tonnage.		
	Sail.	Steam.	Total.	Sail.	Steam.	Total.
1857	142	5	147	40,397	2,050	42,447
1858	136	6	142	38,831	3,317	42,148
1859	131	4	135	35,632	1,559	37,191
1860	108	8	116	28,857	4,254	33,111
1861	103	8	111	27,252	4,484	31,736
1862	96	7	103	25,663	3,284	28,947
1863	91	6	97	24,533	2,714	27,247
1864	99	8	107	30,902	4,075	34,977
1865	104	8	112	35,509	4,220	39,279
1866	91	7	98	33,239	4,686	37,925
1867	81	9	90	31,198	6,357	37,555
1868	68	11	79	23,141	8,752	31,893

Actual condition at the end of each year—Continued.

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December 31—	Number.			Tonnage.		
	Sail.	Steam.	Total.	Sail.	Steam.	Total.
1869	67	12	79	23,981	8,762	32,743
1870	55	12	67	20,648	9,501	30,149
1871	48	12	60	17,262	8,742	26,004
1872	40	19	59	16,205	16,141	32,346
1873	41	28	69	16,434	30,005	46,439
1874	33	24	57	14,925	30,397	45,322
1875	32	27	59	14,756	35,430	50,186
1876	25	23	48	15,130	29,850	44,980
1877	22	28	50	10,547	37,858	48,405
1878	24	34	58	10,319	50,389	60,708
1879	25	39	64	11,655	59,536	71,191
1880	24	42	66	10,442	65,224	75,666
1881	18	41	59	7,354	70,486	77,840
1882	16	46	62	6,750	75,897	82,647
1883	15	47	62	6,458	79,902	86,360
1884	13	51	64	5,925	74,667	80,592
1885	11	54	65	5,053	79,809	84,862
1886	12	55	67	5,554	81,283	86,837
1887	10	55	65	5,500	80,891	86,391

Classification, according to tonnage, of merchant vessels belonging to the various ports of Belgium on the 31st of December, 1887.

Vessels of—	Antwerp.			Ghent.		Nieuport.		Ostend.		Total.		
	Sail.	Steam.	Tons.	Steam.	Tons.	Steam.	Tons.	Sail.	Tons.	Sail.	Steam.	Tons.
	No.	*No.*		*No.*		*No.*		*No.*		*No.*	*No.*	
1,600 tons and above	1	21	51,994	.....	.....	.....	.....	.....	.....	1	21	51,994
900 to 1,600 tons	1	13	18,210	2	2,287	.....	.....	.....	.....	1	15	20,497
800 to 900 tons	.....	2	1,706	.....	.....	.....	.....	.....	.....	.....	2	1,706
700 to 800 tons	1	5	4,438	.....	.....	.....	.....	.....	.....	1	5	4,438
600 to 700 tons	1	5	3,910	1	680	.....	.....	.....	.....	1	6	4,590
500 to 600 tons	1	1	1,036	.....	.....	.....	.....	.....	.....	1	1	1,036
400 to 500 tons	1	1	907	.....	.....	.....	.....	.....	.....	1	1	907
300 to 400 tons	.....	1	379	.....	.....	1	303	.....	.....	.....	2	682
200 to 300 tons	.....	1	201	.....	.....	.....	.....	.....	.....	.....	1	201
50 to 200 tons	.....	1	97	.....	.....	.....	.....	4	243	4	1	340
Total	6	51	82,878	3	2,967	1	303	4	243	10	55	86,391

F. W. L. BUTTERFIELD,
Consul.

UNITED STATES CONSULATE,
Ghent, February 28, 1889.

RAW SILK PRODUCTION OF SYRIA.

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REPORT BY CONSUL BISSINGER, OF BEIRUT.

In view of the recent unprecedented rise in raw silk (commercially known as "soie grège"), attributed mainly to the immense purchases of a formidable syndicate, said to be American, the following items with reference to the Syrian raw silk production for the year 1888 may prove opportune and of some interest to the American silk industry, especially as Syrian silk growers now look covetously towards that market, which has, in a very short period, developed into phenomenal proportions.

The harvest of silk cocoons for the year under review, which, according to carefully collected statistics, amounted to a grand total of 5,626,697 pounds, was mainly remarkable for its deficit of from 15 to 30 per cent., according to locality. The upper region of Mount Lebanon suffered most, owing to the prevalence of unusually cold weather, which destroyed a great part of the foliage of the silk or mulberry tree. This caused the more timid cultivators to throw away part of their silk-worms as an offset to the diminished yield of the mulberry tree, and with a view to keep, if possible, the price of the leaf within reasonable limits, a calculation, however, which proved wholly fallacious, for the price of a load of about 56 pounds of mulberry leaves — the only nourishment of the silk-worm — rose rapidly from about $2.96 to about $5.36. Those cultivators, therefore, who threw away all their worms and sold their mulberry leaves did an excellent stroke of business, since the price obtained for them was fabulous and out of all proportion to the average price realized for raw silk.

The quality of the cocoons also left much to be desired, and this the silk growers claim to be invariably the case when the leaves are dear or scarce, because the worms are then either insufficiently, or, at least, less generously, fed. The ruling quotations for cocoons in the Syrian market during the harvest of 1888 were from 75 to 90 cents per oke; this, after reeling and incidental expenses, such as cost of transportation, etc., makes the Syrian raw silk cost about 45 francs ($8.69) per kilogram of 2.2 pounds in French markets, while, as a matter of fact, the prices realized in Marseilles and Lyons were in many instances not above 42 francs, or about $8.10, per kilogram.

Syrian silk reelers, apprehending a still further decline, and encumbered with old silk at the beginning of last year's crop, were reluctantly obliged to sell to a yielding market, which continued its downward course until the second week in December, 1888. The last sales were at great sacrifices, and over 200 bales are reported to have been disposed of at between 39 francs ($7.53) and 43 francs ($8.30) per kilogram.

The syndicate referred to at the beginning of this report had in the meantime been formed and quietly bought up all the old raw silk that was offering at these ridiculously low prices. Manufacturers of silk stuffs, working at full speed, became aware of and were surprised at its immense purchases

and hastened to lay in a new supply of raw silk, which produced such a firmness in the market that it rapidly advanced within one week over 5 francs (96.5 cents) per kilogram. The reeling establishments in Syria, however, had already entirely disposed of their previous year's product and partially of that of 1888, on the remaining portion of which they will, especially if present prices continue to prevail, be able to indemnify themselves in a measure for the losses suffered in preceding years. The latest sales reported from France were made at from 46 to 52 francs ($8.88 to $10.04) per kilogram, according to quality and mark.

The silk eggs now almost exclusively used in Syria are those coming from the Island of Corsica and from Var, in France, as stated in a previous report, dated June 30, 1886.

The comparatively rigorous beginning of the winter we are now experiencing promises an excellent harvest for 1889, barring a recurrence of the belated spring frost of the past year.

In consequence of last year's low figures for the quality of raw silk necessary for the native Syrian silk industry and the disproportionate high price paid for cocoons during harvest time, the reeling establishments of this country prepared all their raw silk in the manner usually required by European silk-weavers, depending wholly on the Chinese markets for the needful supply of the home manufacturers. This, however, has so far proven a very disastrous speculation, for the extreme Orient (China) readily responded to the general rise in prices in Western markets, while the principal consumers of the products of the Syrian weavers, viz, Constantinople and Cairo, are still well stocked with their textile fabrics, and decline to purchase at advanced prices.

DIRECT TRADE WITH THE UNITED STATES.

It is well known in Syria that the United States has become, in an incredibly short time, an immense consumer of raw silks, and the silk reelers here are manifesting much anxiety to establish direct intercourse with our manufacturers and merchants. They claim that their raw silk compares very favorably with the product of other countries and is superior to that of Broussa, in Asia Minor, which, I am informed by a leading firm here, now finds its way directly to the United States.

What puzzles the average silk cultivator here is to know why the manufacturer in the United States should want to pay an advance of at least 8 to 10 per cent. for Syrian silk in the form of commission, brokerage, etc., to Marseilles and Lyons, when he could address himself direct to any of the many reputable houses here and make his own terms. As has already been stated in previous reports, I would reiterate that there are many respectable firms here of approved commercial probity and ample resources who are most anxious to make a direct beginning with the United States, and would offer every facility within their power to induce and establish upon a firm basis mutually profitable relations with our people.

It has been said, I believe, that the Syrian silk, as now reeled, is unsuited to American requirements, the latter demanding a stronger thread. The manufacturers here claim that nothing would be easier than to spin the silk any given size or thickness; the change, if any be necessary, could be easily effected and would probably only tend to reduce instead of increase the cost.

The Syrian raw silk is now exclusively sold to French firms at Marseilles and Lyons, who, at harvest time, make advances to some of the reeling establishments here to enable them to purchase all the cocoons they may need in addition to those raised by themselves to supply the demand for their mark. These advances are in the shape of three months' acceptances, against which the Syrian silk reeler consigns his raw products, but there are also many spinners who are independent of foreign aid and who are free agents in the disposal of their raw silks.

Our manufacturers will not find it difficult, upon examination and reflection, to decide for themselves whether it will be more remunerative to address themselves directly to the producers here for their Syrian silk, or to continue to cover their purchases through Marseilles and Lyons commission houses.

ERHARD BISSINGER,
Consul.

UNITED STATES CONSULATE,
Beirut, February 21, 1889.

COREAN TRADE.

I have the honor to inclose herewith the quarterly returns of trade for Corea — July, August, and September, 1888 — from the North China Herald of November 31, 1888.

CH. CHAILLE LONG,
Charge d' Affairs, Ad. Int.

LEGATION OF THE UNITED STATES.
Seoul, Corea, December 16, 1888.

CUSTOM-HOUSE,
Yuensan, October 5, 1888.

In conformity with the instructions contained in your dispatch No. 143, of 1885, I now transmit to the statistical department at Shanghai, for publication, the statistics of the trade of this port for the third quarter of the year 1888.

TONNAGE.

The number, tonnage, and movements of vessels, entered and cleared during the quarter, are set forth in the following table:

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Description.	July.		August.		September.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Entered.								
Sailing vessels	.....	.....	2	166	.....	.....	2	166
Steamers	3	4,218	3	4,218	3	4,218	9	12,654
Total	3	4,218	5	4,384	3	4,218	11	12,820
Same quarter, 1887	6	4,452	7	4,518	6	4,499	19	13,469
Cleared.								
Sailing vessels	2	253	.....	.....	2	166	4	419
Steamers	3	4,218	3	4,218	3	4,218	9	12,654
Total	5	4,471	3	4,218	5	4,384	13	13,073
Same quarter, 1887	5	4,398	4	4,272	9	4,708	18	13,378

Of sailing vessels entered one was from Fusan, and one from Osaka. Of nine steamers entered five were from Fusan and four from Vladivostock. The four sailing vessels cleared were for Osaka; remaining in port, none. Of nine steamers cleared four were for Fusan and five for Vladivostock; remaining in port, none.

IMPORTS.

The principal articles of import from foreign countries and Corean ports during the quarter, as compared with the same period of previous years, have been as follows:

Description of goods.	1885.	1886.	1887.	1888.
Cotton goods:				
Shirtings—				
Gray.....yards...	2,017,515	1,582,115	1,985,959	2,224,619
White.....do.....	1,800	8,280	20,280	36,360
T-cloths.....do.....	.....	.....	24,000	2,400
Drills.....do.....	1,280	3,600	50,605	19,336
Sheetings.....do.....	.....	16,800	34,820	28,000
Lenos.....do.....	48,132	11,900	111,981	458,330
Turkey reds.....do.....	31,200	.....	55,686	29,200
Lawns.....do.....	141,886	60,960	436,320	575,076
Cottons, dyed and figured.....do.....	.....	.....	84,893	99,686
Chinese nankeens.....do.....	16,960	25,600	204,368	94,780
Handkerchiefs.....dozens...	63	108	754	289
Towels.....do.....	75	231	323	502
Japanese piece goods.....yards...	5,592	10,224	28,099	19,449
Yarn.....piculs...	20	43	31	100
Woolen goods:				
Lastings.....yards...	2,040	.....	29,671	13,230
Cloth, Russian.....do.....	450	.....	1,410	1,750
Blankets.....pairs...	17	26	562	562
Metals:				
Iron—				
Old.....piculs...	411	550	247	2,273
Nails.....do.....	18	46	86	115
Lead.....do.....	8	.....	.....	137
Copper—				
Japan.....do.....	.....	44	231	1,554
White.....do.....	12	28	12	33
Spelter.....do.....	418	.....	.....	915
Compound tin.....do.....	66	.....	5	30

IMPORTS — Continued.

Description of goods.	1885.	1886.	1887.	1888.
Foreign sundries:				
Beer and porter.....value in dollars...	1,360	1,752	896	2,937
Cigars and cigarettes.....do.....	321	1,159	1,499	2,169
Coal and coke.....tons...	250	887	347	944
Dyes, aniline.....piculs...	120	20	222	154
Flour, American.....do.....	181	259	191	859
Grass-cloth.....yards...	10,230	8,844	22,790	51,256
Iron-ware.....value in dollars...	1,426	5,299	2,150	2,429
Machinery.....do.....	10,375	7,225	4,554	367
Matches, wood.....gross...	3,248	2,763	3,521	10,982
Needles.....mille...	4,000	1,530	12,024	9,610
Oils, kerosene.....gallons...	58,170	6,840	47,980	15,700
Porcelain.....value in dollars...	910	6,128	5,973	5,096
Saké and samshu.....piculs...	289	530	270	519
Silk piece goods.....yards...	51,470	6,250	136,645	100,007
Sugar.....piculs...	201	475	318	446
Wines.....value in dollars...	564	2,535	1,741	1,343
Native sundries:				
Beans.....piculs...	.....	3,543	2,848	2,153
Coal.....tons...	.....	.....	.....	319
Copper.....piculs...	93	.....	99	10
Fish.....do.....	4	428	1,922	2,637
Grass-cloth.....yards...	4,050	75,600	149,456	329,000
Iron, pig.....piculs...	.....	.....	.....	130
Paper.....do.....	.....	90	.....	228
Rice.....do.....	.....	17,017	39,758	62,174
Saké.....do.....	8	101	25	30
Sea-weed.....do.....	265	66	194	1,505

EXPORTS.

The principal articles of export to foreign countries and Corean ports during the quarter, as compared with the same period of previous years, have been as follows:

Description of goods.	1885.	1886.	1887.	1888.
Beancake.....piculs...	.....	.....	.....	11
Beans:				
Black.....do.....	.....	.....	.....	662
Red.....do.....	.....	.....	.....	2,429
Yellow.....do.....	833	.....	30,730	49,510
Other kinds.....do.....	.....	.....	.....	758
Bicho de Mar.....do.....	39	.....	6	21
Bones, cow.....do.....	705	.....	1,974	1,865
Feathers, herons'.....value in dollars	.....	.....	.....	224
Fish-maws.....piculs...	16	18	17	28
Ginseng, white.....do.....	18	5	7	45
Grass-cloth.....yards...	.....	.....	.....	5,200
Hides, cow.....piculs...	972	768	1,123	1,526
Nut-galls.....do.....	22	3	52	139
Paper.....do.....	.....	18	2	97
Rice.....do.....	1,010	.....	177	4,511
Sea-weed.....do.....	.....	.....	.....	148
Sharks' fins.....do.....	3	.....	.....	3
Silk:				
Piece goods.....yards...	.....	.....	1,570	360
Raw.....piculs...	18	20	20	40
Skins, tiger and leopard.....pieces...	6	31	19	3
Wheat.....piculs...	.....	.....	.....	869

RE-EXPORTS.

The re-exports to foreign countries and Corean ports of the principal imports of foreign origin during the quarter, as compared with the same period of previous years, have been as follows:

Description of goods.	1885.	1886.	1887.	1888.
Cotton goods:				
T-cloths.....yards...	.....	.....	.....	4,800
Lawns.....do.....	1,760	7,200	.....	17,928
Sundries:				
Dyes, aniline.....piculs...	.....	.....	.....	10
Saké.....do.....	.....	.....	6	32
Silk piece goods.....yards...	.....	.....	24	1,268

SPECIAL TABLES.

The following tables give separate statistics in connection with the passenger traffic and import and export of treasure:

Passenger traffic.

From or to—	Inward.				Outward.			
	Coreans.	Chinese.	Japanese.	Other foreigners.	Coreans.	Chinese.	Japanese.	Other foreigners.
China.....	7	238	4	12	8	188	7	9
Japan.....	14	6	214	21	11	19	159	35
Fusan.....	83	.....	27	.....	70	1	23	3
Total.....	104	244	245	33	89	208	189	47

Treasure.

From or to—	Imported.				Exported.		
	Gold.	Silver.	Copper cash.	Total.	Gold.	Silver.	Total.
China.....	.....	.....	.....	.....	$22,490	$8,653	$31,143
Japan.....	.....	$16,200	.....	$16,200	150,981	16,170	167,151
Corean ports.....	$7,220	.....	$3,494	10,714	.....	8,797	8,797
Total.....	7,220	16,200	3,494	26,914	173,471	33,620	207,091

REVENUE.

The following table shows the net dues and duties collected during the quarter, as compared with the corresponding period of previous years:

Description.	1886.		1887.		1888.	
	Foreign.	Native.	Foreign.	Native.	Foreign.	Native.
Import duty.....	$17,430.36	$20.63	$28,336.70	.....	$33,607.91	$7.76
Export duty.....	769.42	.....	2,835.20	.....	4,541.41	.....
Tonnage dues.....	173.71	20.46	211.62	$7.27	207.66	5.98
Total.....	18,373.49	41.09	31,383.52	7.27	38,356.98	13.74

TOTAL COLLECTION.

1886	$18,414.58
1887	31,390.79
1888	38,370.72

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J. F. SCHŒNICKE,
Acting Commissioner of Customs.

CHIEF COMMISSIONER OF CUSTOMS, *Seoul.*

INOCULATION FOR SHEEP DISEASES IN NEW SOUTH WALES.

REPORT BY CONSUL GRIFFIN, OF SYDNEY.

The disease known as anthrax, or splenetic apoplexy, which for so many years has been devastating the flocks and herds of New South Wales is in a fair way of being very effectually checked by M. Pasteur's system of inoculation.

The series of experiments which have been conducted near the town of Junee, about 290 miles from Sydney, have been so successful that farmers all over the colony whose flocks and herds have suffered from the disease are taking active steps to adopt M. Pasteur's system. Great credit for the success of the enterprise is due to Mr. Alexander Bruce, chief inspector of stock in New South Wales. Mr. Bruce has, on various occasions, pointed out the evil effects of the disease, and through him much valuable information was obtained as to the preventive means employed in other countries.

A series of interrogations were prepared by Mr. Bruce, and submitted to the various foreign governments, especially those of Germany, France, Belgium, England, and the United States. As soon as the information was obtained it was submitted to the intercolonial stock conference, which assembled in Sydney in September, 1886, when it attracted great attention. The subject was also brought before the conference of delegates from the pasture and stock boards, appointed to consider the stock and pasture bill, held in Sydney, May, 1887. A resolution was passed by the conference urging the Government to continue its investigations with the view of acquiring a thorough knowledge of the best means for preventing the disease.

Correspondence was opened with Doctor Katz, a German scientist, who had been engaged in microscopic work for the Sydney board of health, and Mr. Stanley, the veterinarian surgeon to the New South Wales Government, very strongly urged that a sufficient sum be placed at Doctor Katz's disposal to enable him to conduct experiments upon a scale worthy of the importance of the subject, and that a salary suitable to a properly qualified expert be given him.

Mr. Bruce, who has for many years taken the deepest interest in the subject, was, from the first, inclined to adopt the system of M. Pasteur, and at last succeeded in obtaining the sanction of the Government to communicate with that gentleman as to the terms upon which he would teach certain persons to be named by the Government his system of inoculation, and the cultivation of the virus. Mr. Bruce's communication did not reach M. Pasteur until

the arrival of Doctors Hind Lohr and Germont in Sydney, who had been sent here by M. Pasteur for the purpose of conducting experiments for the extermination of the rabbit pest. The subject of anthrax was at once brought before these gentlemen, and a cablegram was sent to M. Pasteur at Mr. Bruce's suggestion, and negotiations were entered into which led to the experiments at Junee. The successful issue of these experiments is very gratifying to me, for I have taken the deepest interest in them from their inception to the close.

In the month of April, 1886, I forwarded a communication to the Department of State, at Washington, D. C., requesting information for the New South Wales Government as to the disease in the United States, and the methods employed there for controlling it. The Secretary of State submitted the correspondence to the Commissioner of Agriculture, who replied to the effect that anthrax was not a common disease in the United States; that when it appeared it was usually confined to a single flock, or to a small area of country, and did not occur continuously or with any regularity as to seasons. He stated further that M. Pasteur's method of inoculation, so far as he was aware, had not been practiced, nor had any experiments been made with the cultivation of the virus from animals affected with the disease in the United States.

Mr. Bruce learned, however, that the disease was prevalent in Belgium and India, and that M. Pasteur's method of inoculation had been successful in controlling its ravages in both countries. The Government of Belgium was so favorably impressed with M. Pasteur's system that it has undertaken to supply the vaccine matter gratis, notwithstanding its high cost.

The New South Wales Government was informed by Doctor Germont, on the 24th day of July last, that he had received a supply of vaccine from M. Pasteur, and shortly afterwards preparations were made for the experiments at Junee. Doctor Wiss, in the columns of the daily press, objected very strongly to the agreement with M. Pasteur, but the objections were very clearly shown to be unreasonable by the chief inspector of stock, and a commission was appointed composed of Mr. Bruce, Mr. W. M. Hamlet, Government analyst; Edward Stanley, Government veterinary surgeon; Mr. Arthur A. Devlin, and Mr. J. De V. Lamb, the latter being chosen chairman. The experiments were begun on the 4th instant. Besides the commission several hundred persons were present, amongst whom were Mr. E. M. Carr, chief inspector of stock of the colony of Victoria; Mr. P. R. Gordon, chief inspector of stock, of Queensland; Mr. T. M. Tarbot, chief inspector of stock, Tasmania; Professor W. F. Kennedy, M.R.C.V.S., principal of Melbourne Veterinarian College; Mr. G. Park, M.R.C.V.S., Tasmania; Dr. Ashburton Thompson, of the board of health, Sydney; Mr. R. G. Higgins, and others.

The experiments were conducted by Doctors Lohr and Germont in a paddock of about 40 acres, belonging to T. W. Hammond. There would have been a larger attendance had a more accessible place been chosen. Junee was selected on account of the prevalence of the disease in that neighborhood. *Both* Mr. Bruce and Mr. Stanley, the Government veterinarian, estimate the

loss of sheep in New South Wales by anthrax at about 200,000 per annum. The actual loss is probably much greater than the estimate, and, besides, the disease is not confined to this colony, but is prevalent in other parts of Australia. Mr. Stanley, in a recent report, says: "Anthrax is the most universal disease that attacks animals, whether domesticated or wild, and is communicated to mankind." He admits, however, that there are different forms of the disease, and that the symptoms vary in degree and situation of the lesion. The symptoms are also modified by country and kinds of animals attacked, splenic fever being the most common form.

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The word anthrax is the Greek for coal or charcoal. The disease is known by various names. The French call it charbon maladie du sang, carbon symtomatique; the Germans, anthrax milzbrand; the Italians, charbon carbunculo; the Spaniards, lobado alevosa carbunculo; the Americans, splenic fever; and the Australians, Cumberland disease, the latter name being derived from Cumberland county, New South Wales, where the disease first made its appearance in Australia.

A report by Sir E. Deas. Thompson says that it was first noticed in 1847, when some cattle belonging to a Mrs. Cordeaux, between Liverpool and Camden, in Cumberland county, were supposed to have been maliciously poisoned. The disease was recognized as anthrax by experts, but no skill was able to check it, and it spread rapidly throughout various parts of the colony, and subsequently extended to Victoria and Queensland. The farmers attributed the cause to poisonous plants.

Mr. Charles Moore, the Government botanist, thought the disease had been introduced by imported sheep, just as British weeds were brought into the country and spread with stock and merchandise traveling into the interior. Others thought it was produced by miasma.

Mr. Stanley states that there can be no question about the disease being caused by a micro organium named bacillus anthrasis, contracted by animals passing over an infected country. He says:

It is very satisfactory to be able to state the cause of the disease so definitely, because so long as it was attributed to such mysterious agencies as miasma, fog, cobwebs, dew on the grass, noxious plants, too nutritious feeding, enzootic or epizootic influences, no one understood its treatment. There can be no doubt that the microbes are immensely influenced by surrounding conditions — character of the soil, herbage, season, climate, and situation. Briefly, I may say that it is a vegetoid organism, and thrives outside the animal body, even passing an independent existence, like a ground weed, for years. Therefore, as supplementary causes, I mention the spring and summer seasons with light rains and warm nights; rich, deep soil, such as grows rich herbage on river frontages or surrounding creeks or swamps, the sort of soil worms, beetles, and caterpillars luxuriate in. Lime and saline country are least favorable to the life of these germs.

Mr. Stanley holds that anthrax is incurable, and that every known remedy proposed has proved a failure. I take the following from Mr. Stanley's report:

The bacterides, or anthrax, discovered by Davine, and their life history worked out by Koch, were, in 1877, announced by M. Paul Wert, to be neither the cause nor the effect of anthrax, but that the disease was due to a liquid virus without organisms. Pasteur resolved

to inquire into it, and, having procured professional medical assistance, he took some anthrax blood and allowed it to settle so that the solid particles would gravitate to the bottom of the vessel; then, on taking the liquid plasma from the upper part and inoculating an animal he found no results, but on taking the sediment, which swarmed with bacilli, the animal inoculated died with anthrax. Pasteur exclaimed: "Is there not here the proof that the bacteride is really what constitutes the virus; that the charbon (*i. e.*, anthrax) is the disease of the bacteride, as trichnosis is of the trichina, and as scab is the disease of the acarus?"

Mr. W. M. Hamlet, F. J. C., F. C. S., the Government analyst, in a paper entitled "The History of the Anthrax Bacillies," read at Junee on the 2d of October last, describes a microbe as a little living thing, quite invisible to the naked eye, growing with or without air, and propagating its species at ordinary temperature, if provided with water and nourishment. Its business in life is to bring about certain changes in the composition of matter, some of these changes giving rise to products which may be the most deadly poisons, whilst others may be harmless, or, perhaps, beneficial to animal life, or even the antidote of the poison it first elaborated. Mr. Hamlet mentions that three hypotheses have been put forward to explain the pathological action of the microbe:

First, That the bacillus attacks the delicate blood corpuscles, completely arresting their functional activity, whereupon a struggle ensues in which, if the corpuscles win the battle, the animal lives, but dies if the microbe proves victorious.

Second, That the bacilla gradually appropriates some of the blood serum for its own nutriment and sustenance, and at the same time secretes a poisonous principle, resembling an alkaloid, which in time kills the sheep.

Third, That the development of the microbe in the blood circulating in the system fills or chokes up the blood vessels, more especially the capillaries, and thus causes death.

Fourth, That the oxygen of the arterial blood, in which it finds all the conditions necessary to its own existence, is greedily seized upon by the microbe, while the sheep consequently dies of asphyxia.

Mr. Hamlet states that the last-mentioned explanation is the right one, and he is confident that the experiments he has in hand will establish beyond question its accuracy.

From Mr. Stanley's diagnosis I learn that the disease is highly virulent, and has all the characteristics of acute inflammatory fever, and is easily communicated from cattle to sheep and from sheep to horses and other animals. It usually proves fatal with sheep in thirty-five or forty hours, and with cattle and horses in two or three days.

The symptoms are unmistakable. The first symptom noticed is an unusual liveliness in the animal; then the skin, especially under the eyes and on the nose, assumes a bright red tint. The youngest and fattest sheep are the first to be attacked. When the flock is moving about the sheep attacked stop for a few moments, stretch out the head, dilate the nostrils, open the mouth, and breathe with difficulty; many lick the ground and search for salt. If they have been driven hard, they seem blind and stumble along for a few

paces and fall on their backs or sides in convulsions, where they die in from five minutes to three hours. Sometimes the attack is very sudden and the end more rapid. Cattle often decline to feed, lose their milk, seem disturbed and restless, mucous membranes are conjested, they shudder or tremble, and have muscular twitchings, then become weak and listless, respire with difficulty, their temperature rises, the pulse becomes quick, small, and weak, they have convulsions and fatal collapse with a sanious discharge from the mouth and nares, also with the excretions. In the horse the symptoms are similar but less acute, and local swellings are more frequent.

The chief inspector of stock recommends the burning of carcasses of animals known to have died from the disease. Vaccination, he says, will save the stock from infection, while fire will leave no infection to fight against.

The first vaccination at Junee took place on the 10th of September, thirty-nine sheep and six cattle being selected for the purpose. Twenty sheep and four cattle were operated upon by Doctors Germont and Lohr in the presence of the commission. The following is abbreviated from the report of the commission: The sheep were vaccinated on the inner side of the off thigh by the hypodermic injection of one-eighth part of a cubic centimeter (about 2 minims) of attenuated virus of anthrax — "first vaccine of Pasteur." The cattle were similarly operated on behind the shoulder, each receiving one-fourth part of a cubic centimeter (4 minims) of first vaccine. The temperature of each animal treated was taken immediately afterwards, the normal temperature being, sheep, 103° to 104°; cattle, 101° to 102°. It was also taken on the 5th, when a general rise of the temperature of the sheep was discerned, and in the case of one of the sheep had risen to 106.2°. On the following day the temperature had in most cases slightly fallen. This was also the case in regard to the sheep whose temperature had reached 106°. Another had gone up to 106°, but on the following day was found to have gone down to 102.3°. The sheep between this and the second vaccination continued to be closely watched, but exhibited no symptoms of being affected by the operation.

On the 18th of September Doctors Germont and Lohr re-vaccinated the twenty sheep and four cattle, this time with the same quantity of Pasteur's second vaccine of anthrax. The temperature of the animals was taken immediately afterwards, when it was found it corresponded with that of the previous vaccination. On the following day a considerable rise of temperature was noticeable in those sheep which had shown no rise after the first vaccination, some of them going as high as 107°. On the following day there was a considerable fall in all the sheep, except one, which registered 105.2°. The vaccinated and unvaccinated animals were allowed to run together, but no ill effects were noticed.

On September 18 Doctor Germont also inoculated two sheep in the presence of the board with a cultivation of the virulent virus of anthrax (Cumberland) disease. This virus had been originally procured by the Govern-

ment veterinarian, Mr. Stanley, in May last from Mr. A. A. Devlin's sheep at Uarah, and was handed by him to the Government analyst, Mr. Hamlet, on September 13 for this inoculation, the object being to test its efficacy, and, if still effective, to obtain a supply of fresh virulent virus for the demonstration. As showing that the virus had lost none of its vitality the two inoculated sheep died at 8 p. m. on the following day, being thirty-two hours after inoculation. Careful post-mortem examination of these sheep by Mr. Stanley and Mr. Devlin, in the presence of Mr. Hamlet and Dr. Germont, showed unmistakable indication of the disease anthrax, and the microscope revealed its characteristic bacilli. Blood was taken by Mr. Hamlet from one of these sheep for the purpose of preparing a cultivation for the final test, and the cultivation was carried out in his laboratory in Sydney under his supervision by M. Lohr. The following is the conclusion of the report:

The cultivation of virus prepared under Mr. Hamlet's supervision was taken on September 29 to Junee Junction, and on the 30th three sheep were inoculated with different quantities of this cultivation by Dr. Germont, in the presence of Mr. Devlin and Mr. Bruce, at the experimental station, with a view to have the deaths occurring at different times for the purpose of the demonstration. Of these, the first sheep died at 6 a. m. on October 2, thirty-four hours after inoculation; the second at 3.30 p. m. of the same day, forty-three and a half hours after inoculation, and the third sheep at 9 a. m. on October 3, fifty-nine hours after inoculation. At 3.30 p. m. one of the sheep inoculated on September 30 died as anticipated. After post-mortem examination and inspection of the blood under the microscope, and the board being satisfied as to the cause of death, Dr. Germont and M. Lohr commenced, at 4.45 p. m., the inoculation of the thirty-nine sheep with the blood of this sheep, doing the vaccinated and unvaccinated sheep alternately, using the same syringe and the same quantity of blood for each, viz, one-eighth part of a cubic centimeter, equal to 2 minims. The six head of cattle were also inoculated with blood from the same sheep, with the same syringe, receiving one-fourth part of a cubic centimeter. The whole of the sheep, both vaccinated and unvaccinated, were then placed in the same inclosure, fed upon the same food, and drank from the same trough. Green food was scattered about the floor, upon which the unvaccinated sheep were dying, and sanious discharges contaminated the food. The vaccinated sheep, in addition to the inoculation, also had to undergo the risk of contracting the disease by taking up the blood or other excreta from the unvaccinated sheep, which died in the same pen where they were confined and fed for four days after the inoculation took place.

The first of the nineteen unvaccinated sheep succumbed to the disease at 8.15 p. m. on October 3, being about twenty-seven hours after inoculation, and the last of that number died at 5.30 a. m. on Friday, October 5, sixty hours and fifteen minutes after inoculation. Of the two unvaccinated cattle, Nos. 88 and 33, the former died at 10.30 p. m. on Saturday, October 6, while the latter, though having been very ill, is likely to recover.

Mr. Stanley made a post-mortem examination of all the sheep that died, and found the lesions of anthrax very decidedly indicated in every instance. The diagnostic changes were the black semi-fluid blood, the enlarged, softened, blackened spleen, and the dark, bloody color of the urine. These conditions were well marked in each case. During the examination the changes produced by the disease, such as the blood stains, patches of inflammation in various parts of the body, the gelatinous bloody effusion at the point of inoculation, and other points of interest, were explained to the visitors. A healthy sheep was killed for the purpose of comparison of the organs with those of a diseased sheep, and the blood of the same was examined and exhibited. In order to remove any possibility of doubt as to the cause of death the board requested Mr. Hamlet, Government analyst, to examine the blood of the sheep at the post-mortem examination, and in every case the blood, when submitted to that test under the microscope, contained bacilli anthracis.

The experiments have been so successful that many stock-owners are anxious to have their sheep vaccinated at once. Not long since an offer was submitted to the Government of this colony for the vaccination of any number of sheep. Doctors Germont and Lohr state that M. Pasteur would be willing to vaccinate sheep at the rate of 3*d.* (6 cents) per head, being 2*d.* (4 cents) royalty to M. Pasteur and 1*d.* (2 cents) for necessary expenses.

G. W. GRIFFIN,
Consul.

UNITED STATES CONSULATE,
Sydney, October 26, 1888.

COMMERCE OF NEW SOUTH WALES, 1888.

REPORT BY CONSUL GRIFFIN, OF SYDNEY.

RELATIVE VALUE OF THE FOREIGN TRADE OF NEW SOUTH WALES.

The commerce of New South Wales is greatly in excess of that of any other of the Australasian colonies. Indeed, there is no part of the British Dominion where the trade, in proportion to the population, is anything like as large as it is in New South Wales. The population of Canada is about 4,000,000; the total annual value of her import and export trade rarely exceeds $194,660,000, of which $97,330,000 are imports and $87,597,000 exports. The trade of New South Wales very nearly equals those figures, although the population is only about one-fourth of that of Canada. A still more striking contrast is found between the trade of India and that of New South Wales. The population of the former country is about two hundred and fifty times greater than that of the latter, and yet the combined import and export trade of British India is only about four times greater than that of New South Wales. The total annual value of the imports and exports of British India is about $764,035,000, of which $350,383,000 are imports and $413,652,000 are exports. The total annual value of the import and export trade of Sydney is $145,723,000. In years of depression it falls to $126,529,000. The complete returns for the whole of the colony for 1888 have not yet been printed, but the returns for Sydney alone show the total imports and exports to be $149,777,795.

COMMERCE OF SYDNEY.

As Sydney is the great commercial center of the colony the complete returns are likely to show very little increase over the figures given. Of the total value for 1888, $87,859,080 were for imports and $61,726,860 were for exports. There was an increase of 28.8 per cent. in the value of the imports over that of the year previous, and an increase of $10,820,408 in the value of the exports. The subjoined table shows the value of the imports and exports of New South Wales for each year, from 1884 to 1888, inclusive,

together with an estimate of the mean population, and the value of the trade per head:

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Years.	Mean population.	Imports.	Exports.	Trade per head.
				£ s. d.
1884	880,000	£20,605,817	£12,166,025	37 4 9
1885	930,000	19,861,050	11,172,821	33 7 0
1886	980,000	16,792,490	9,882,128	27 4 3
1887	1,022,000	14,030,792	10,267,755	23 15 6
1888	1,066,783	18,077,810	12,700,572	28 17 6

It will be seen from the preceding table that the values per head for 1888 are in excess of those for 1887, but below those of 1884 and 1885.

PRICES OF IMPORTS.

There has been a decided increase in the price of all kinds of imports. The increase is due to the improved condition in the markets of Europe, America, and other parts of the world. At the beginning of 1888 galvanized iron brought in Sydney $87.59 per ton, to-day the cost is $107.06. The price of fencing-wire is about the same as it was a year ago, owing to a heavy supply and the drought and the uncertainty of legislation affecting the fencing of lands, etc. The prices range from $51.09 to $55.96 per ton for No. 8 and No. 10, respectively. Sheet-lead is quoted at $91.13 per ton, against $85.64 at the close of 1887. The price of some commodities, however, has declined. The fluctuation in the price of tin has affected the price of tin-plates. At the close of 1887 tin-plates were quoted at $4.40, to-day they are only worth $3.89. The collapse of the tin syndicate in London caused the price of tin to decline from $827.30 to $486.65 per ton.

The trade in tallow was depressed throughout nearly all of last year. Recently there was a slight advance in the price, the quotations now being 11½ to 12½ cents per pound for best brands. These figures, it is said, leave no margin for profit.

The consumption of kerosene is steadily increasing in all the colonies. The strike in the New South Wales coal mines occasioned considerable speculation in that article owing to the proposed suspension of the manufacture of gas. The stocks of kerosene at the close of the year were heavier than usual, but the prices showed a tendency to increase, principally due to the increase in the cost of freights. The present quotations are from 38 to 45 cents per gallon for high tests, and 30 to 34 cents for low tests.

The supply of salt is unusually large, the importations to Sydney during the year being in excess of those of 1887, with prices steadily advancing, owing to the action of the salt union and the increased cost of freight. Black Horse brand brought $19.46 to $20.68, against $17.02 for the corresponding period of the year previous Rock salt is quoted at $21.89, against $19.46 for last year.

The imports of timber show no signs of falling off, notwithstanding the check to building operations.

The supply of wool-packs is in excess of the demand. The heavy orders for these, given in the early part of the year, overstocked the market.

The partial failure of the wheat crop occasioned a decline in the price of all kinds of grain bags. The harvest in Victoria suffered less than that of any of the other colonies. The estimated yield of the present crop in Victoria is 5,000,000 bushels larger than that of the last harvest. The yield will be below the average, however, in every one of the other colonies. The price of wheat and flour shows signs of increasing. Arrangements have been perfected for heavy importations of those articles from the west coast of the United States. The barley crop was short last year, both in Victoria and New South Wales, and the price went up to 5*s.* 6*d.* per bushel. The shipments from California, which were fairly remunerative, were larger than usual.

Oats are in brisk demand, the prices ranging from $1.09 to $1.17 per bushel. The proposal to increase the duty on oats in Victoria occasioned a disturbance in the market.

The failure of the sugar crops in New South Wales and Queensland brought about considerable fluctuation in the price of sugar. The imports from China in white sugar were well sustained throughout the year, but in regard to other grades the demand was not great, and it was difficult to obtain cost prices for such as were imported. The supply of colonial sugar is still limited and the price low. The cost of this article, however, is regulated by the tariff of the Colonial Sugar Refining Company. I give below a table showing the prices of the various brands from the 1st of January to the 20th of September, 1888:

Month.	Brewing and extra No. 1.	No. 1.	No. 2.	No. 3.
	£ s.	£ s.	£ s.	£ s.
January 1	24 15	24 0	23 0	20 0
January 14	25 5	24 10	23 10	20 10
March 6	24 10	24 0	22 10	22 0
March 21	23 0	22 10	21 10	19 10
September	23 10	23 0	22 0	20 0

The average of these prices is much below the equivalents of those imported; but for sugars other than white, such as grainy yellows, browns, etc., prices have steadily ruled high, owing, as I have said, to the scarcity of supply. The trade in sugar by the middle-men has been greatly contracted on account of the business being almost wholly monopolized by the Colonial Sugar Refining Company.

INDIAN TEAS.

The tea trade has also been very unsatisfactory, the demand being light up to the close of the season of 1887–'88, when large stocks were sold at auction, principally below cost price. The Foo-Chow market opened this year at good prices. The chief feature in connection with the Australasian trade in tea is the increased consumption in the Indian and Ceylon products. A few years ago only two or three firms imported Indian teas; now they are largely dealt in by every house in the trade. With the increased production of tea in India and Ceylon, and the decline in the export from Foo-Chow, the port from which nearly all the China teas are drawn for the Australasian market, it is reasonable to expect that the imports of Indian teas will increase to very large proportions. The country tea dealers complain that the Sydney wholesale merchants are sending their supplies direct to the consumer instead of through the local store-keepers.

FREIGHT ADVANCES.

The steady advance in the price of freight is a remarkable feature in the trade and commerce of Australasia, the advance in freight being over 50 per cent. This is said to be due partly to the combination of shipping brokers and to a scarcity of vessels. There are indications of the revival of ship building in England, and should this prove to be true it is possible that the London shipping ring will be unable to fix the price of freight. The Australian merchants chartering vessels in London labor under many difficulties, the cost of tonnage per register from London to Sydney being three times as much as it was ten months ago. The rates in February, 1887, were about $4.86 per ton register; now vessels can not be obtained at less than $14.59 per ton, and they are scarce even at that figure.

The advance in the cost of chartering vessels from New York to Sydney has not been so great, but it has more than doubled in the last eight or ten months. The number of vessels dispatched from England for Sydney during 1888 was larger than that of 1887, the steamers for the former year numbering 113, against 93 for the latter, and the number of sailing vessels 143 against 121. The subjoined table shows the number of steamers and sailing vessels dispatched from England to New South Wales, with the value of their cargoes, for each year from 1884 to 1888, inclusive:

Year.	Steamers.		Sailing vessels.	
	No.	Value of cargoes.	No.	Value of cargoes.
1884	112	£5,185,000	149	£3,398,000
1885	112	5,305,300	146	4,208,900
1886	101	5,880,000	146	4,198,900
1887	93	3,716,200	121	3,272,900
1888	113	4,194,600	143	4,609,200

DROUGHT AND DAIRY PRODUCTS.

The most striking fluctuations during the year in the prices of commodities were in dairy products. Twelve months ago butter of good quality sold in Sydney at 12 and 14 cents per pound; now the prices are from 300 to 400 per cent. higher. This is due principally to the drought, which was the severest ever known in the history of the colony. Dry weather was experienced from February until May, when it was partially broken up, but it began again before June and lasted for six months. In November the outlook was distressing in the extreme. The coast districts, which usually receive about 50 inches of rain, received only 15 inches. In the west stock died by hundreds and thousands. Forest fires were raging everywhere. The farmers were compelled to pay more than double the ordinary price for hay and fodder. Towards the close of the year rain came and changed the aspect of affairs in nearly every district in the colony. Unfortunately, however, in a few districts the rain came too late, and in the southwest there was none at all. At Wilcannia the rain-fall was 2½ inches during the year; at Wentworth it was 4 inches, and in Bourke and Balnarald it was less than 7 inches.

The early fruit crop was almost destroyed. The grape crop, however, is in good condition, and the yield of wine, it is thought, will be in excess of that of last year.

EXPORTS.

The principal increase in the exports of New South Wales produce consisted in wool, skins, tallow, and copper. The export of wool increased from 339,457 bales in 1887 to 402,012 bales in 1888. The number of bales of skins increased during the same period from 6,694 to 7,735; copper ingots, from 307,053 to 391,714; bales of leather, from 3,700 to 7,161; casks of tallow, from 28,075 to 28,854; tin ingots, from 218,747 to 222,574. The export of preserved meat, however, declined from 183,639 cans in 1887 to only 86,799 in 1888. Kerosene shale declined during the same period from 12,044 tons to 10,657.

The value of the export of gold coin increased from £995,411 in 1887 to £1,642,083 in 1888. The value of the export of uncoined gold declined from £26,682 to £14,931.

MINES AND MINING.

The mining returns for the year just closed have not yet been printed, but it is known that there has been a decline in the gold product of all the colonies except Victoria, and even there the increase is very slight. The gold return of that colony has just been given by the mint and the customs department at 636,200 ounces, against 620,298 ounces for 1887, showing an increase of 1,602 ounces. Speculation in mining stock appears to have run higher in the colonies than at any other period during the last quarter of a century.

The extraordinary development of the silver mines in the Broken Hill country, New South Wales, under the direction of Mr. Patton, who formerly

had charge of a group of the celebrated Comstock mines in Nevada, created a boom in the silver market. The shares of the Broken Hill Proprietary Company rose from $875.97 in January to $2,014.73 in February. This extraordinary rise awakened a speculation in other mining shares, such as the White Rock, Mount Costigan, etc. In a short time White Rock tumbled to almost nothing, and Mount Costigan declined from $21.89 to $3.65, whilst those of the Broken Hill Proprietary Company fell to $1,435.61. The shares of the latter company now show a tendency to advance, as smelting operations have begun again. The Australians are becoming sensible of the necessity of improving the character of their machinery. A system for crushing for gold like that in use in the United States is wanted, where the base metals are also retained and turned to profit. At Broken Hill it formerly took the whole of the silver in the ore to pay the expense of crushing, but with the help of American experts, together with the scientific information gathered by a private commission dispatched through the silver states, the cost of production has been so reduced that a handsome profit accrues to the shareholders.

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BANKING.

Although New South Wales is a wealthier colony than Victoria, her import and export trade exceeding that of Victoria by several millions sterling, the latter is far in advance of her in the extent of her banking operations. Indeed, the annual deposits in the banks of Victoria exceed those in New South Wales by seven or eight millions sterling, whilst the average advances are in still greater proportion. Out of the total advances made from October 1, 1887, to September 30, 1888, for the whole of Australasia, Victoria has more than one-half. The following are the figures: The advances for the whole of the group were £14,969,975, whilst those of Victoria alone were £8,666,462, and it is remarkable that in the previous year Victoria banks showed an increase on their advances amounting to £2,359,789, whilst those of the other colonies showed a decrease of £1,081,753 ($5,264,350.97). There was an increase in the deposits during the twelve months amounting to $38,923,794, but the advance having been about $34,065,000 in excess of the deposits, the banking position was weakened. The amount of coin and bullion, however, was not lessened to that extent. The average coin and bullion in the banks at the end of the September quarter of 1888 amounted to £18,208,473. The operation of loaning £14,969,975 ($72,851,332) and showing an increase of £197,384 of coin and bullion, when there was only an apparent increase of deposits of £7,988,428 ($38,875,134), is accounted for by the fact that the banks bought the difference from England. The subjoined table shows the course of banking in the Australasian colonies for the quarter ended September 30, for 1887 and 1888:

Year.	Circulation.	Deposits.	Coin and bullion.	Advances.
1887	£5,118,486	£93,335,718	£18,011,089	£111,224,888
1888	5,707,689	101,334,146	18,208,473	126,194,663

The banks in New South Wales appear to have acted with great caution and kept their resources well in hand. The following table shows the average of deposits and advances in both colonies for the years 1887 and 1888:

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Third quarter.	New South Wales banks.		Victorian banks.	
	Average deposits.	Average advances.	Average deposits.	Average advances.
1888	£31,074,888	£36,553,814	£38,518,327	£45,324,751
1887	29,128,908	33,529,358	34,671,511	36,658,289
Increase	1,945,980	2,984,556	3,846,816	8,666,462

The year closed with the following bank rates: For deposits, 3 per cent. for three months, 4 per cent. for six months, and 5 per cent. for twelve months; discounts, 7 per cent. for 3 months' bills and 8 per cent. for four months and over.

The financial situation of the colony may be described as satisfactory. The steady increase in the deposits furnishes very good evidence of the increase of the wealth of the community.

In April New South Wales put upon the London market a loan of £3,500,000 ($17,032,200), and the average price obtained for her debentures was £103 12*s.* 2*d.* ($504.20), better rates than were ever obtained before. The Government, notwithstanding the popularity of the borrowing policy, is placing fewer loans than for many years upon the market. In 1887 no money was borrowed at all, and in 1888 the amount was the smallest since 1884. The following table shows the loans obtained by the New South Wales Government, from 1884 to 1888, with the average price realized:

Year.	Amount.	Average realized.
		£ *s.* *d.*
1884	£5,500,000	93 13 7
1885	5,500,000	91 13 5
1886	5,500,000	95 8 3
1888	3,500,000	103 12 2

REVENUE.

The revenue of nearly all the Australasian colonies for 1888 is in excess of the expenditures. The excess is larger in Victoria than any other, due principally to the policy of protection.

New South Wales has for many years been laboring under a heavy deficit, but the customs and other returns for 1888 show a substantial increase over those of 1887. It would have been much larger than it is, except for the drought, which acted seriously on the prosperity of the colony, and especially during the last quarter of the year. There was a deficiency in that quarter over the corresponding one of 1887 of £197,684, due principally to a decline in the receipts from the rent and sale of Crown lands.

The returns for the year show a total revenue of £8,886,360 ($43,245,470), against £8,582,807 ($41,768,180) for 1887. The revenue for spirits was £805,619 ($41,768,180), against £758,895 ($3,692,933) for 1887; wine duties yielded £51,107 ($248,686), against £45,237 ($220,145) for 1887; tobacco, £207,405 ($1,009,335), against £108,997 ($530,433). The receipts from cigars declined from £106,722 ($519,362) in 1887 to £100,762 ($490,358) in 1888. Coffee and chicory declined from £13,069 ($63,599) to £10,757 ($52,348); sugar and molasses, from £134,895 ($656,461) to £122,063 ($594,019). The receipts for opium increased from £21,643 ($105,325) to £22,012 ($107,121); rice, from £18,515 ($90,463) to £19,238 ($93,621). The receipts from excise tax were £259,836 ($1,264,486), against £204,420 ($994,809). Ale, beer, and porter gave £115,039 ($559,836); spirits declined £13,009 ($63,264.50); excise on tobacco, cigars, and cigarettes, £130,413 ($624,654.86); tobacco factory license fees, £1,374 ($6,686.50). Stamps yielded £409,657 ($1,993,595.89), against £321,746 ($1,564,268.95) for the previous years. The land revenue amounted to £2,268,249 ($11,038,433), showing a falling off from the year previous of £110,542 ($537,952). The revenue from the railways and tramways amounted to £2,759,279 ($13,427,975), against £2,510,334 ($12,216,490) for 1887.

G. W. GRIFFIN,
Consul.

UNITED STATES CONSULATE,
Sydney, January 21, 1889.

CATTLE AND HORSES IN HONDURAS.

REPORT BY CONSUL HERRING, OF TEGUCIGALPA.

The following correspondence will explain itself:

[Consul Herring to Consul-General Valenzuela.]

UNITED STATES CONSULATE,
Tegucigalpa, January 4, 1889.

SIR: I am informed that you have a cattle ranch within the limits of this consular district, near Comayagua. I would like very much to have the actual written experience of such a man as yourself in the cattle business in Honduras. I want it for publication in our consular reports. Your own intelligence will best suggest the information desired, and your high official position alone is enough to give credibility to your statements.

Thanking you in advance for the trouble I occasion you, I am, etc.,

D. W. HERRING,
United States Consul.

Hon. ALONZO VALENZUELA,
Consul-General for Belgium, Comayagua, Honduras.

[Consul-General Valenzuela to Consul Herring.]

BELGIAN CONSULATE-GENERAL,
Comayagua, January 7, 1889.

SIR: I received your esteemed letter the 4th of January, in which you request me to inform you about the cattle-raising in Honduras, and give you my opinion as a practical man in the cattle business. I, therefore, and with pleasure, transmit to you herewith my report, according to my knowledge and long experience in such business, as follows:

THE CATTLE INDUSTRY OF HONDURAS.

Origin.—In all the histories of Honduras which I have examined they are spoken of as cattle of the country descended from those brought over by the Spaniards and Mexicans.

Breeds.—There is only one breed, but in this there are variations, showing that at least three breeds were originally imported, the longhorns, the shorthorns, and the polled cattle.

Uses.—These cattle are only good for beef and labor. Milk and cheese are made in small amounts for local consumption.

Milk.—In this country the increase of foreign population has increased the demand for cows' milk. The cows are corraled at night, milked in the morning, and herded during the day on the open pastures. A cow will give about 3 quarts of milk per day for three months. After three months the cows and calves run loose until about eight months after the calf was dropped.

Butter.—Butter making is almost unknown, although there are some ranchos in the country where they make very good butter for local consumption.

Cheese.—A small amount of a sort of cheese is made and sold immediately in the cities near the ranchos. It is usually made into round, flat cakes weighing about 20 pounds.

Variation of breed.—On the lowlands near the coast the cattle grow large. The animals generally adapt themselves to their surroundings. In the high regions the hoofs are smaller and tougher, the animals are agile and sure-footed.

Grasses.—All this cattle run wild and feed the year round on the wild grasses and bushes. The grasses are numerous and some of them very succulent.

Water.—Water is afforded by the various lakes, rivers, crystal streams, and pools. The value of a pasturage is largely dependent upon the amount, location, quality, and permanence of water supply. In the higher country and during the dry seasons the water is scarce.

Herds.—The largest herds of cattle are held in the departments of Olancho, Comayagua, Chaluteca, Fegwigalpa, Santa Barbara, and Yoro.

Value.—The prices of all kinds of live animals, as cattle, horses, mules, sheep, goats, etc., have greatly increased within a few years.

Bulls.—The bulls run with the herd all the year, calves are dropped all the year round, but more generally in March, April, and May. The bulls serve cows at two years, but are most effective at from three to six years. After that age they get so heavy they are not serviceable. They are then castrated and broken to the yoke, or killed for beef.

Cows.—Heifers take the bull at about three years of age, and cows usually drop one calf a year. The calves run with the mother until she turns them off. The annual increase in a herd, when the grass and water are abundant, averages about 65 per cent. Many of these cows grow to an immense size, and the horns are as long as those of the oxen.

Duties.—All cows, heifers, and bulls entered for breeding purposes are free of duties in Honduras, and the Government gives especial concession to importers. A duty of $2 per head is imposed upon bulls and steers exported, and $16 for each cow exported.

Export.—The total export of live cattle every year into the adjoining republics—Guatemala, Salvador, and Belize (British Honduras)—is estimated at about thirty thousand head, which are always sold at $22 a head, which value represents a total sum of $66,000 per year. Fattened cattle can be sold at any time in the markets at $25 a head. Cattle from four to five years old can be bought here at from $10 to $12 a head, and six months after can be sold in the adjoining republics at $22 a head.

Driving.—For driving cattle from the interior of the Republic to Guatemala, Salvador, and other countries the roads are good, and the country is comparatively open and very level. In good seasons there are plenty of water and grass. My averages show the losses on this route not to exceed 6 per cent.

Climate.—The average temperature in the cattle regions is about 65° F. The coldest weather is usually in January, but there are no snow-storms or hard winters. Honduras offers many and great natural advantages to cattle men. This country equals, and, I dare say, sur-

passes any part of the United States as a cattle-growing region. No serious disease among the cattle has ever existed. The spring, alternating with summer, gives healthful, balmy breezes, which play over the prairies covered by succulent grasses and watered by streams and refreshing showers.

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Land.—National lands can be obtained at $2 an acre, especially for cattle raising, and, with the expense of $50 an acre, could be fenced with solid stone fence. The cattle business in Honduras is a sure investment and the capital increases 50 per cent. a year. Cattle ranchos can be bought now at 25 per cent. less than value and payable by terms.

Hoping that my report will be useful to cattle men in the United States, I am, sir,

Yours very respectfully,

ALONZO VALENZUELA,
Consul-General.

Hon. D. W. HERRING,
United States Consul, Tegucigalpa.

HORSE RAISING.

From a book recently published, entitled "Honduras," I send the following upon the subject of horse raising:

Mares of fair size and quality can be bought in Honduras for $10 to $12 each. The cost of establishing and managing a stud in Honduras need not be nearly as great as that of keeping a stud of like numbers in any part of the States. As the mares are healthy and perfectly sound, accustomed to taking care of themselves and their foals, and will never suffer from lack of food or water, nor from exposure to storms, they may be confidently expected to breed surely and well. Probably fully 75 per cent. of a stud of such mares would each year produce foals, which would sell for an average of at least $75 each when four years old. By using stallions of high breeding and uniform style and color, selected as far as practicable from one family, a large number of almost perfectly matched spans would be got each year from a stud of, say, one thousand such mares as can be bought in Honduras. From the grade fillies which would come from the use of such a lot of stallions a large percentage of the foals will match very closely, and would bring higher prices than unmatched spans would. The results which can be obtained by proper management are approximately indicated by the subjoined estimate, based on the assumption that of a stud of mares 60 per cent. will each year drop foals that will be sold at an average of $75 each or come into bearing at the age of three years. It is also assumed that the money received for half of the male get will be used in the purchase of native mares at the prices indicated, to be added to the original stud; also, that the fillies born in the stud will remain to breed. Starting with 1,000 mares on this basis the following results should be attained in the first ten years:

Years.	Breeding mares.	Males born.	Number of mares sold.	Average value of mares.	Total value of mares sold.	Average price mares bought.	Number of mares bought.
1	1,000	300	150	$50.00	$7,500	$12.00	625
2	1,000	300	150	50.00	7,500	12.00	625
3	1,000	300	150	50.00	7,500	14.00	536
4	1,775	532	266	60.00	15,960	14.00	1,140
5	2,550	765	382	60.00	22,920	15.00	1,528
6	3,236	971	485	65.00	31,525	15.00	2,102
7	4,642	1,393	696	70.00	48,720	20.00	2,436
8	6,552	1,966	983	70.00	68,810	20.00	3,440
9	9,139	2,742	1,371	80.00	109,680	25.00	4,387
10	12,271	3,682	1,841	90.00	165,690	30.00	5,525
Total	12,271	12,951	6,474	75.04	485,805	21.74	22,342

In this estimate the average price of native mares has been put at $21.75, instead of $12, for which they can be bought now. This is to make allowance for any advance in price which may come from the development of this branch of the stock business. At the end of the ten years there will be on hand, if not otherwise disposed of—

1,000 superannuated mares, fourteen years old or older, worth, say	$1,500
7,364 foals, all high grades, worth, say, $25 each	184,100
5,484 yearlings, high grades, worth $50 each	274,200
3,932 two-year-old grades, worth $75 each	294,900
Total	754,700

Sales of stallions to the people of Central America would save a part of the cost of shipping the surplus to foreign markets. Desiring to improve their stock, and having no other convenient source of supply, the people there will buy quite a number of the best young stallions in the stud at fair prices.

D. W. HERRING,
Consul.

UNITED STATES CONSULATE,
Tegucigalpa, January 18, 1889.

COMMERCE AND TRADE OF MEXICO.

REPORT BY CONSUL-GENERAL SUTTON, OF MATAMOROS.

There are some thirty-eight Mexican custom-houses, of which nine are on the Gulf, one on the Guatemala frontier, fifteen on the Pacific coast, and the remainder on the American frontier. This number varies from year to year, because of commercial necessities, but has never exceeded forty.

GULF PORTS.

Matamoros.—Matamoros is situated on the right bank of the Rio Grande, some 25 miles from its mouth, 165 feet above sea-level, in longitude 97° 26′ west from Greenwich and latitude 25° 53′ N. The present population is about 12,000, but during the civil war in the United States it was for a time one of the chief commercial ports of the world, and had a population of some 40,000. This trade, however, gradually grew smaller year by year until, in 1883 and later years, the American railways to the upper border towns took away all except the small local importations. It is a good agricultural region, one of the finest in Mexico; is on what would be the most direct route from Houston, Texas, to San Luis Potosi and the City of Mexico, and, with railways built out each way, would regain much of the former trade.

Matamoros was the first port in the Zona Libre (1857), and has had a very eventful history. The climate is rather trying, owing to the intense heat of summer and the sudden changes in the cooler months when the "northers" blow.

The country around is slowly settling up, and with continued peace larger crops of cotton (nearly one thousand bales this year), sugar, and corn are raised each year.

The principal exports are horses, mules, cattle, hides, skins, bones, etc. The cotton and wool, formerly exported to the United States or Europe, now go to the interior, where there is a good and annually increasing market.

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There is no good harbor at the mouth of the river — usually only 5 or 6 feet on the bar — and little or no navigation returns.

The only railway is the Matamoros and Monterey, which is now built to San Miguel, 76 miles up river. At Brownsville, across the river, is a railway to Point Isabel, on the Gulf, 21 miles. Both of these are narrow-gauge. There is now a project for building a railway down the river to near the mouth and then deepening the channel so as to get back some of this marine trade.

The imports for the half-year ending December 31, 1885, were, in United States coin values, $369,724, and the exports for the year ending June 30, 1887, were, in United States coin, $343,590. The duties collected, reduced to United States coin at 80 cents on the dollar of Mexico, were $402,640.

Tampico. — Tampico is situated on the right bank of the Pánuco River, some 6 miles from where it empties into the Gulf of Mexico, in longitude 97° 5′ W. and latitude 22° 52′ N. At the entrance to the river is an iron light-tower, 141 feet above the sea-level, showing a dioptrical fixed white light of the second class, with triple flash every thirty seconds, visible in clear weather for a distance of 28 nautical miles. It has a population of some 5,000, and a very hot, moist, unhealthy climate. The situation of the town, surrounded as it is on three sides by the river, adds to its dampness, and the neighboring country shuts off much of the sea-breeze. It is about 300 miles from the City of Mexico and 250 from San Luis Potosi, to which the Mexican Central Railway Company is building a branch line. This same company has lately contracted with the Mexican Government to improve the harbor, and when both these are done the trade of Tampico will be greatly increased. The line to San Luis is difficult to build, and will be expensive to operate. It is thought, however, that it will be cheaper as to both than the Vera Cruz line, and that it will be a formidable rival to the latter, especially as regards the commerce of the northern central portion of the country. The harbor at present is very poor, and there are very serious difficulties in the way of making any permanent improvements. The terms of contract were given in a recent report.

During the year ending June 30, 1887, 47 steam vessels entered, off, with a tonnage of 70,109 tons. Of these 46 were laden and 1 in ballast, and they brought 336 passengers. There were 26 entries of sail vessels (5,261 tons), 11 laden and 15 in ballast. The clearances of steam vessels were 46 (70,417 tons), all laden, and carrying 235 passengers. Of sailing vessels, 23 cleared (5,014 tons), 19 laden and 4 light, carrying 13 passengers. There are only about 7 to 8 feet of water on the bar, and a pilot is compulsory. There is fair anchorage outside, except in northers, in 6 fathoms; when northers threaten the only refuge is under the Lobos Islands, some 60 miles distant.

The neighborhood of Tampico and the country between it and Matamoros have not been gone over carefully, and the products can only be estimated. Along the coasts are deposits of guano, petroleum, and asphalt. Salt is made in the lagoons, coal is supposed to exist in the Huasteca region, and the wealth of a virgin and luxuriant forest is almost unstudied. The whole coast-line, from Matamoros to Tampico and further south, is well adapted to the raising of oranges, lemons, grapes, pine-apples, bananas, and a multitude of other tropical fruits. For stock raising there is no place in the world that is better, even if as good, as this state of Tamaulipas.

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The imports at Tampico for the half-year ending December 31, 1885, in United States coin, were $121,701, and the duties collected, reduced to United States coin at 80 cents on the dollar of Mexico, $76,665. The exports for the year ending June 30, 1887, were, in United States coin, $610,317.

Túxpan.—Túxpan is in the northern part of the State of Vera Cruz, on the small Túxpan River, near the Gulf, about 100 miles south from Tampico, in longitude 96° 40′ W. and latitude 20° 56′ N. The population is quite small, some 2,000, and the trade is unimportant.

The country around is, however, well adapted to fruits, and the forests are rich with resinous trees. The chicle or gum—the base of the best chewing-gum—goes from here, and all to the United States. Coal, petroleum, and other valuable products are believed to exist in paying quantities in the adjacent country. There was formerly a considerable colony of Americans in and near Túxpan.

During the year ending June 30, 1887, 19 steam vessels, with a total tonnage of 28,359 tons, entered, off, 18 laden, 1 in ballast, and bringing 49 passengers. During the same period there were 21 arrivals of sail vessels (6,487 tons), 10 laden and 11 in ballast. Many of the steamer passengers were for other ports, but were counted as arrived; probably less than 75 passengers actually disembarked.

The imports for the half-year ending December 31, 1885, were, in United States coin, $39,907, and the duties paid thereon, reduced to United States coin at 80 cents on the dollar, $21,274. The exports for the year ending June 30, 1887, in United States coin, were $960,206.

Vera Cruz.—This ancient and historic city is situated on the Gulf coast, in longitude 96° 15′ W. and latitude 19° 12′ N. It is the chief commercial port of the country, a rank which it has held from its first settlement to the present time.

The city is comparatively low, built in a semi-circle facing the Gulf, has a population of some 8,000, and is one of the cleanest cities in the world. In spite of this, however, it has for some three hundred years been noted for being the abode of the worst form of yellow fever. Within the last few years the wall which surrounded the town, a survival of the octroi dues and revolutions, has been removed and free circulation of air allowed. Whether from this, or this and other causes, the virulence of the fever has diminished year by year for some years, and it bids fair to be a reasonably healthy place.

Speaking comparatively, one-half of the import and export trade passes in and out through this city. There is no harbor, only an open roadstead between the town and the island San Juan de Ulloa, a half-mile or more away. A fine mole is, and for many years has been, building, and extensive harbor works are under contract. These, when finished and in use, will greatly facilitate commerce and tend to retain some of the trade, which, since the building of the railways to the American border, has been going elsewhere. It will also help to build up the local traffic and develop many possible industries in that section of Mexico.

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The famous Vera Cruz and Mexico City Railway connects it with the capital of the country, 263 miles distant. The scenery along this magnificently constructed line is probably the finest in North America, but the expense of maintaining and operating is so great that the financial future of the road is always threatened with other and less expensively built rivals for its trade. Some of the most powerful locomotives made are in use, steel ties are being put in year by year, and there are some 15 miles of 82½-pound steel rails in use. The road earns per mile per week about $200, United States coin. The annual earnings are nearly $4,000,000, some 70 per cent. of which are from freight traffic. Probably another railway will be built within a few years to the capital by a more circuitous but less expensive route. A railway down the coast to Minatitlan and on toward Tabasco and Campeche, with a branch across to Tehuantepec, is a probability of the near future.

The whole range of country from Matamoros to Guatemala is the finest portion of Mexico, and is capable of great development. The Vera Cruz cigars are justly celebrated, and, with increased cultivation of the plant, the annual product will increase and their sale will be pushed in new markets. It is said that with good seed, care in the selection of the district and in curing, a tobacco equal in all respects to the Vuelta Abajo leaf can be produced.

The coffee of the immediate region is also famous, and perhaps, when carefully prepared, unequaled by that of any other country in the world.

A good crude sugar is produced, and the annual crop might be increased many fold. Formerly a considerable quantity was exported, but the interior demand has so increased of late years that, although the product has increased, the export has steadily diminished.

The possibilities of the woods exports are only limited by the demand, and the supply will last for a long period.

Vera Cruz is the chief maritime port of the country, although for the year I quote Progreso was a close second. During the year ending June 30, 1887, there were 159 entries of steam vessels (263,043 tons) and 52 entries of sail vessels (18,307 tons). There were clearances of 157 steam vessels (267,706 tons) and of 44 sail vessels (15,843 tons). Besides these there were, in the coasting trade, 107 entrances of steam vessels (29,674 tons) and 249 of sailing vessels (15,485 tons); 107 clearances of steam vessels (30,296 tons) and 240 sail vessels (15,502 tons). The number of passengers brought by the steam ships was 3,626, and the number carried away 3,020.

The value of the imports for six months ending June 30, 1885, was, in United States coin, $5,040,687. The exports for the year ended June 30, 1887, reduced to United States coin at 80 cents on the dollar of Mexico, amounted to: Precious metals, $12,280,513; other products, $3,854,008; total, $16,134,521.

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Coatzacoalcas.—Coatzacoalcas is a small town near the mouth of the river of the same name, and is the port of the interior city of Minatitlan. It is some 150 miles south and east from Vera Cruz, in longitude 94° 35′ W. and latitude 18° 10′ N., near the head of the Coatzacoalcas Bay. Its present importance is very slight, but, as the possible Gulf terminus of the Tehuantepec Ship Railway, it may in the future become a great port. In the midst of a region of great natural agricultural wealth, it is now almost entirely undeveloped.

In the year ending June 30, 1887, there were 29 entries of sail vessels (7,948 tons), 5 laden and 24 light. In the same period 39 sail vessels (10,294 tons) sailed, 36 laden and 3 in ballast.

The imports for the half-year ending December 31, 1885, invoice values in United States coin, were only $750, and the exports for the year ending June 30, 1887, reduced to United States coin, were $118,362, all fine woods.

Frontera.—Frontera, the next port on the coast, is about 150 miles east from Coatzacoalcas. It is a small place of some 3,000 inhabitants, on the bank of the Grijalva River, in longitude 92° 36′ W. and latitude 18° 30′ N. It is the port for San Juan Bautista, the capital of the state, some 50 miles in the interior, and has considerable possibilities of development.

There is a system of lakes, lagunas, and sluggish rivers in this section, which might, with more population, be of importance. The soil is also very rich, but it is low and moist. From these causes it is not very healthy, and many virulent fevers prevail in the warmer parts of the year. Along these water-ways are primeval forests and soil of unsurpassed fertility. The forests are full of valuable woods for veneers, dyes, and caoutchouc. The little cocoa raised is of very fine quality; the "corral" tobacco is highly prized, and fine rice, coffee, and cane are raised. Almost the whole export trade is in fine woods, a large portion of which goes to Liverpool.

During the fiscal year 1886–'87, 18 steam vessels touched or anchored off, with a tonnage of 26,110 tons. Thirty sail vessels (7,978 tons) cleared, all laden but one.

The imports, in United States coin invoice values, for the six months ending December 31, 1885, were $85,312, and the exports for the year ending June 30, 1887, in United States coin values, were $276,876.

Isla del Carmen.—Isla del Carmen, the port next east on the coast from Frontera, is on the western end of the island of the same name, in longitude 91° 35′ W. and latitude 18° 39′ N. It is in the state limits of Campeche, is low, damp, and not very healthy. The population is estimated at 9,000, and depends almost entirely on the preparation and export of fine woods. Nearly one-half of the total Mexican exports of fine woods goes from this port.

Its interior water-way traffic possibilities are even greater than Frontera, and they are equally undeveloped. The Laguna de Terminos, with its branches and the many rivers which flow into it, covers a large area of water-front. In the neighboring forests men cut down trees in the cooler months and raft them out to the port for shipment.

There is a light-tower near the west end of the town, 190 feet above the sea, showing a light, obscured every thirty seconds, and visible from a vessel's deck about 18 miles out. Vessels anchor in the entrance to the lagoon in 3 fathoms of water

For the year ending June 30, 1887, no steam vessel entered or cleared. There were 137 entrances of sail vessels (37,413 tons), 18 laden and 119 light. The clearances were 152 (40,673 tons), all laden but four.

The imports for the half-year ending December 31, 1885, invoice values in United States coin, were $73,310, and the exports for the year ending June 30, 1887, in United States gold values, were $661,253.

Campeche.—Campeche lies northeast from Carmen, in longitude 90° 26′ W. and latitude 19° 53′ N. It is the capital of the state, and is a handsome, curious place of some 12,000 inhabitants, founded in 1540, on the catacombs of the Maya tribe of Indians. As it lies a little north of Vera Cruz and has a good situation, its climate is better than that of the latter, and had it a good, or even passable, harbor would be of considerable importance.

The state of Campeche, like Tabasco, has no mines, and the agricultural and woods industries are the only sources of wealth. As the harbor is so very poor that small vessels have to anchor 3 miles out, the commerce of the port is growing less each year. Considerable of the trade has of late years gone to Carmen. The production of cotton, cane, rice, tobacco, indigo, and corn could be greatly increased.

There were 20 touchings of steam vessels during the fiscal year 1887 (28,616 tons), bringing in all 27 passengers. Sixteen sail vessels arrived and 25 cleared (6,048 tons), all laden but five.

The imports, invoice values in United States coin, for the six months ending December 31, 1885, were $63,403, and the exports for the year ending June 30, 1887, were, in United States coin, $84,856.

Progreso.—Progreso is the last port of any importance on the Gulf coast of Mexico. It is in the state of Yucatan, in longitude 89° 37′ W. and latitude 21° 16′ N. The population is about 5,000. The town proper is located on a sandy bar and cut off from the mainland by a long, shallow lagoon.

Progreso is connected with Mèrida, the capital, some 20 miles inland, by rail. Mail comes from Vera Cruz by water and is carried to Mèrida and other points inside, but not, as yet, beyond the limits of the state. There is neither port nor harbor, and vessels are obliged to anchor out from 3 to 5 miles to keep clear of shoals. It is a dangerous road from October to March, during which time northerly winds may be expected. While there is some yellow fever here, the place is not especially unhealthy.

The light shown is a fixed white light, dioptric system, visible some 13 miles. Of itself Progreso has no importance, but it is the only outlet for the state and for its most valuable staple, the hennequen fiber. This fiber is a substitute for, or a sort of, hemp. It is the principal product of the state, and Progreso is the chief port of export. Practically, all goes to the United States. The tables show fully the quantities, values, etc., of this article. As it thrives on a worn-out, sandy soil in this moist, hot climate, the product is only limited by the demand and the price.

Besides the hennequen all the tropical fruits can be raised in considerable quantities, and, with good ports and low freight rates, at prices low enough to compete with other countries.

During the year ending June 30, 1887, 142 steam vessels (205,605 tons) touched, bringing 360 passengers, and 139 cleared, carrying 466 passengers. In this same period 119 sail vessels (16,476 tons) arrived and 99 cleared, 67 laden and 32 in ballast.

The imports for the half-year ending December 31, 1885, values in United States coin, were $657,922, and the exports for the year ending June 30, 1887, in United States coin, were $3,279,488.

Zapaluta. — Zapaluta is a small and unimportant town in Chiapas, near the boundary line of Guatemala, in longitude 92° 20′ W. and latitude 16° 15′ N. It is the only custom-house on the Guatemala frontier.

Imports for the half-year ending December 31, 1885, invoice values in Guatemala coin, $1,364. There were no exports reported for the year ended June 30, 1887.

PACIFIC COAST PORTS.

Soconusco. — Soconusco is on the Pacific coast, very near the extreme southeast boundary line of the state of Chiapas, in longitude 92° 40′ W. and latitude 15° 10′ N. The little town, which is also sometimes called San Benito, lies on the mainland facing a small, low island, some half a mile off from the shore.

There is no telegraph office nearer than San Cristobal, about 90 miles distant, to which place there is a mail route. The Pacific Mail steamers usually call here monthly. The place is altogether one of ideal dullness, and any one wishing to retire from the world to a warm, equable climate, where the higher demands of our artificial civilization do not reach, is commended to this place.

The only maritime movement for the year 1887 was 12 Pacific Mail steamers touching, off, landing 22 and taking on 5 passengers. One small sail vessel entered and cleared in ballast.

The narrow coast-belt has a very fertile soil, and the high mountains back are supposed to have gold and copper in abundance. There are now produced on a small scale, besides the coffee, which is the chief export, cocoa, indigo, vanilla, wheat, tobacco, cotton, gums of liquid amber, copal and lac, fine woods, and a great variety of fruits. The section near Soconusco is that which so nearly caused a war between Mexico and Guatemala a few years since,

All the commerce of Soconusco is for the neighboring town of Tapachula, some 25 miles inland, and small imports and exports for a section of Guatemala. The imports for the half-year ending December 31, 1885, invoice values in United States gold, were $23,931, all from San Francisco. The exports for the year 1887, also in United States gold, were $373,249, of which $323,773 was coffee to San Francisco.

Tonalá.—Tonalá is nearly at the extreme of the coast line of Chiapas, in longitude 94° W. and latitude 16° 10′ N. The town, which lies some 10 miles from the coast, has a population of some 6,000. There is connection inland by telegraph, and mail with the rest of the country. Its commercial importance is very small, and should the ship railway be constructed, even that little would be taken away. A Pacific Mail steamer touched monthly during the year 1887, and 5 sail vessels entered in the same period.

The imports for the half-year ending December 31, 1885, invoice values in United States coin, were $32,631, and the exports for the fiscal year 1887, $129,443.

Salina Cruz.—Salina Cruz is in the state of Oajaca, near the mouth of the Tehuantepec River, in longitude 95° 5′ W. and latitude 16° 10′ N. As it is on the low coast, shut in by high ranges, the smallness of the town and the paucity of the population is fully compensated for by the extreme heat. Back from the coast in the higher levels it is cooler, and even cold. The federal telegraph lines from Oajaca, the capital of the state, and those of the Mexican Cable Company touch this place. The latter crosses the isthmus from this point.

At present Salina Cruz is of little importance, but if the ship railway is built, this, its Pacific terminus, will be the chief port of this part of Mexico. The proposed Oajaca railway is to come here if built according to the present plans. The Pacific Mail steamers touch here once a month, and 13 sail vessels (4,894 tons) sailed laden during the year.

The imports for the half-year ending December 31, 1885, were, in United States coin, $7,481, and the exports for the fiscal year 1887 were $116,126.

Puerto Angel.—Puerto Angel is also in the state of Oajaca, less than 100 miles west from Salina Cruz, in longitude 96° 20′ W. and latitude 15° 45′ N. The town is very small, there is no telegraph as yet, the climate is very hot, and it is quite unimportant, commercially speaking. In the year ending June 30, 1887, the Pacific Mail steamers touched here monthly.

The imports for the half-year ending December 31, 1885, were only $3,789, and the exports for the year ending June 30, 1887, were $42,688.

Acapulco.—Acapulco, the port of the state of Guerrero, lies on Acapulco Bay, in longitude 99° 45′ W. and latitude 16° 52′ N. It is south by a little west from Mexico city nearly 300 miles, and from the earliest times has been an important port. The spacious bay is well sheltered and vessels can anchor close in shore. The small city, of some 5,000 inhabitants, is built in a semi-circle around the foot of the hills La Quebrada and La Vijia.

Back from the town these hills rise to mountains 800 to 2,500 feet high, and thus shut off nearly all the breeze. As a result the place is intensely hot, but very picturesque, the green foliage of the mountain-sides serving in place of fresh currents of air.

In colonial times this was the chief port on this coast and was the seat of the famous trade to the Orient. The lost galleon, the *San Gregorio*, so famed in tradition, in history, and in Bret Harte's poem, was due here in 1641 and is still due and overdue. In those days the yearly arrival of the *Nao de China* was a great event, and her wonderful cargo of silks, spices, candles, gums, cottons, rice, etc., sold at fairs attended by people from Mexico city and other points. When the royal or vice-royal will so disposed, the whole cargo or any part needed was transported across to Vera Cruz and thence dispatched to the metropolis to grace the Spanish court.

The state of Guerrero is thought to be very rich in mines, but as these are still largely undeveloped and the soil is so broken up by mountains as to be of little agricultural value, the trade of Acapulco is nowadays of less importance than formerly. It has a telegraph and a tri-weekly mail to the interior. The Interoceanic Railway is planned to go to this place, but so far the plan is only on paper. Except as a military road for strategic purposes the line is not likely to be built for the present. What is most needed and what will perhaps be done first is to construct a good or even a passable wagon road to Mexico city and also to the other towns of the state, as Tixtla, and to towns up and down the coast. When these have been built the mines can be opened up and the other scant agricultural possibilities developed.

During the year ending June 30, 1887, 78 steam vessels (123,596 tons) entered, 44 laden and 34 light. In the same period 6 sail vessels (7,071 tons) entered, all laden, and 5 cleared light. In the previous year, ending June 30, 1886, owing to the prevalence of yellow fever, no steam vessels entered or cleared, and only 25 sail vessels (845 tons) entered.

Manzanillo.—Manzanillo, the next port on the Pacific coast, is situated in the state of Colima, in longitude 104° 25′ W. and latitude 19° 2′ N. The large bay is divided into two sections by the point of low land on which the city, of about 5,000 inhabitants, is located. Back of the town is the Lagoon of Cuyutlan, a shallow body of water about 40 miles long. Manzanillo is very hot and not overhealthy, but back in the hills and the mountains it is quite cool and healthful. The Mexican National Company began a road from here toward Mexico city, and built a short distance. The work has, however, been suspended for some time, and no one can tell when it will be again taken in hand. There is a telegraph line and a daily interior mail. The commerce has gone to other ports within a few years and its importance has greatly diminished. The state has a good soil, plenty of water for irrigation, and will some time be the home of a considerable population.

The maritime movement for the year 1887 was very limited. Six Pacific Mail steamers entered, and 13 small vessels entered and 1 cleared in ballast.

San Blas.—San Blas is a very small port of not more than 1,500 souls, in the territory of Tepic, formerly a part of the state of Jalisco, in longitude 105° 10′ W. and latitude 21° 30′ N. It is very hot and its little business is growing less each year.

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The Mexican Central Railway, from Mexico city to Guadalajara and Tepic, was to have reached the coast here, and some 10 miles was actually built out of San Blas. It is now understood that the road, if ever completed, is to reach the coast at the Bay of Chamela, down the coast over 100 miles.

This territory of Tepic was formed in 1884 so as to enable the Government to move promptly in dealing with the bandits and political malcontents in this section. Agriculturally, it is quite rich, and large crops, comparatively speaking, of corn, cotton, sugar, tobacco, etc., are produced.

San Blas, in common with most of these Pacific ports, has suffered a loss of trade by reason of the completion of the Central and National railways, by which lines goods from or via the United States can now be more easily, quickly, and cheaply distributed to most of this section.

About all San Blas now amounts to is a receiving point for the small trade of Tepic, the capital of the territory, which lies inland about 40 miles.

The marine movement for the year (1887) was the entry of 4 steam vessels (3,405 tons), the entry of 7 sail vessels (2,833 tons), 5 laden and 2 light, and the clearances of 10 (4,375 tons), 7 laden and 3 light. No passengers were brought or carried away.

The imports for the half-year ending December 31, 1885, values in United States coin, were $262,141. The exports, also in United States coin, for the year ending June 30, 1887, were $251,102.

Mazatlan.—Mazatlan, by far the most important port on the Pacific coast, is situated on a small peninsula extending into the Bay of Mazatlan, in longitude 106° 34′ W. and latitude 23° 11′ N. The population numbers 14,000. The climate is quite pleasant, except during the hot, rainy season. It has a telegraph line to the interior, an inland mail north and south, and also by Pacific Mail vessels each way monthly.

The harbor is poor, as it is exposed to winds, and the bottom is hard sand, not good for holding to. Small vessels, drawing 8 to 10 feet, cross the bar and find fair shelter. The light is on Creston Rock, 575 feet high, to the south of which vessels usually anchor. It is a fixed, white, fourth-class Fresnel, and visible 25 miles. The Mexican naval bureau for the Pacific is located here, and warning of storms is usually given from the observatory.

Although situated near the southern portion of the state (Sinaloa) Mazatlan is the distributing point for most of the state and for some portions beyond. There is considerable fertile soil along the river valleys, but the main industry is mining silver. To the east lie Durango and Chihuahua, and along their mountainous boundaries are some of the richest mines in the world. The American railways have drawn off a considerable amount of trade from Mazatlan, and branches from their main lines will soon take away still more.

The tables which follow give, in detail, the exports, and enable the reader to judge of the surplus salable products of the section.

During the year (1887) there were 32 entries of steam vessels (43,618 tons), 30 laden and 2 light, bringing 228 passengers; 28 (41,192 tons) cleared, 26 laden and 2 light, carrying away 331 passengers. Of sail vessels, 15 (6,760 tons) entered, 14 laden and 1 light, and 8 cleared, 4 laden and 4 light.

The imports for the six months ending December 31, 1885, invoice values in United States coin, were $831,849, and the exports, in United States coin, for the year ending June 30, 1887, were $3,666,720.

Altata.—Altata, which is also in Sinaloa, is a short distance up the coast from Mazatlan. It lies on the mainland facing Cabanilla Island, has about 3,000 inhabitants, mail, telegraph, a hot, dry climate, and a very small commerce.

Some years since a railway was built 30 miles inland toward Culiacan, so as to draw some of the trade away from Mazatlan. This has, however, been a failure. The harbor is small, but vessels can anchor close in shore. There is a mint at Culiacan, the capital of the state, where considerable silver is coined.

Two small steamers entered during the year (1887), 1 laden and 1 light, and bringing 2 passengers. Three sail vessels (1,597 tons) cleared laden.

The imports for the half-year ending December 31, 1885, were, invoice values in United States coin, $24,912, and the exports for the year ending June 30, 1887, $17,006.

Guaymas.—Guaymas, the next port on the mainland north from Altata, is about half way from the mouth to the head of the Gulf of Cortés, or, as it is more commonly called, the Gulf of California, in longitude 110° 50′ W. and latitude 27° 51′ N. The city is some distance in from the gulf, at the head of a fine, large bay, in which is plenty of water and good anchorage close up shore near the city.

Like so many of these Pacific towns, the location, so far as beauty is concerned, leaves little to be desired. But from a climatic point of view, the location is not successful. The surrounding hills and mountains, which add to the picturesqueness of the view, shut off the breeze. Besides this, the solid rock is at or very near the surface of the ground, and the rays of the sun on them in the warm season of the year makes it a veritable furnace.

Guaymas has only about 5,000 inhabitants, but is by far the most important commercial port on the gulf. Some years since, when the Sonora Railway, connecting at Nogales with the New Mexico and Arizona to Benson, on the Southern Pacific, was completed, its future seemed very bright. Preparations were made to build a large hotel for winter visitors, during which months the climate is really charming. About that time, however, yellow fever, of a peculiarly virulent form, had worked its way up along the coast from Panama and decimated the population. As this is beyond the region of frosts it had to wear out its strength and work its will on all within reach. Hence business was almost paralyzed for two years, and all great projects

either abandoned or laid aside for the future. Since then Guaymas has been free from fever, and is slowly recovering. Its good harbor and location as regards the mines of the state will always make it of greater or less importance, according to the state of these industries.

The state of Sonora, of which Guaymas is the only port, is one of the richest in the country in minerals, and has a great future before it. The fertile valley, down which the Sonora Railway extends for 265 miles, is well adapted to raising all sorts of tropical fruits. The oranges grown at Hermosillo and in the central part of the state are famous for their fine quality, and there is an immense area of land suitable for their cultivation.

Up the Gulf, toward the northwest, to its head and the mouth of the Colorado is an almost unknown land. What may be found in the earth or what may be produced from it are questions yet to be solved. The enterprising explorer is now abroad there, and plans for railways and colonies are already made up and in process of execution. At present it is a barren, desolate waste of rather more than torrid heat, in summer at least, and almost uninhabited.

Down the coast 200 miles from Guaymas, and across the line into the state of Sinaloa, is located the celebrated colony of Topolobampo, founded by Mr. A. K. Owen. Under the motto, "Collective ownership and management of public utilities and conveniences," etc., is being tried another of those experiments which seem to be a necessary and comparatively harmless vent for certain minds. Several hundred people have gone there within the last three years and located on the shores of the beautiful, landlocked Bay of Topolobampo.

Good crops of most temperate and tropical fruits and vegetables can be raised with irrigation, but there are no special articles which, as yet, can be produced or exported so as to make the colony self-supporting. It is very hot, and, in the warm season of the year, subject to fevers. At present good drinking water seems difficult to obtain except at some distance. They are in a foreign land, where all their hereditary traditions are unknown. Although they are to have a certain degree of local autonomy, yet they must be subject to a code of laws not only strange but very different from what they have been used to. Then, again, outside of their own colony everything is spoken and written in a, to them, unknown tongue. All these things are over and above and beyond those necessary and incidental to any pioneer efforts in our own West. Some of the people are of considerable means and ability. All who remain now are, I believe, ardent believers in the ultimate success of the experiment. A few, however, are enthusiasts or cranks, who really expect to feel the wings start out on their shoulders, and who believe that at Topolobampo, and by virtue of the founder, A. K. Owen, they will see a visible manifestation of God's will. No one can object to those going who are fitted to endure hardships, but much suffering has resulted from accidents which could not well have been guarded against, and, for the present, women and young children are better off at home in the United States.

If, in the future, the Texas, Topolobampo and Pacific Railroad and Telegraph should be built, this far off terminus and this fertile tract between the Fuerte and the Sinaloa rivers might be the seat of a considerable population.

The head-quarters of the colony, under the name of "The Credit Foncier of Sinaloa," are at Hammonton, New Jersey. The colony itself is in longitude 109° 35′ W. and latitude 26° N.

As Topolobampo is not a customs port, no returns of imports or exports can be given. The maritime movement for the year ending June 30, 1887, was five entries of a small steam tug of 62 tons, once laden, four times light; the same boat cleared four times light, carrying away 5 passengers. There were also 59 sail vessel entries (1,113 tons), 29 laden, 30 light, and bringing 94 passengers; and the same number of clearances, 59 (1,149 tons), 39 laden, 20 light, and carrying away 256 passengers. As the total arrival of passengers was 221 and those leaving 261, the net number of the colony was reduced by 40. In the previous year, ending June 30, 1886, the total arrival of passengers was 56, and 128 left.

There are projects for railways from some points on the Southern Pacific south through the state toward Sinaloa and Jalisco and others into the rich mineral district to the east from Hermosillo and Guaymas. As Guaymas is the only port of Sonora all the products of the southern part of the state will go out there and the future of the city depends largely upon the development of the resources of the state.

During 1887 there were entries of 112 steam vessels (24,663 tons burden), 37 laden, 75 in ballast, and bringing 1,119 passengers, while 113 of 24,877 tons, 102 laden, 11 light, and carrying 1,089 passengers, cleared. Of sail vessels there were entries of 167 (5,503 tons), 116 laden, 51 light, bringing 297 passengers; and 163 (6,373 tons)—117 laden, 48 light, and carrying 401 passengers—sailed.

The imports for the half-year ending December 31, 1885, invoice values in United States coin, were $116,407, and the exports for the year ending June 30, 1887, were $475,507.

La Paz.—La Paz, the capital of the territory of Lower California, lies on the inside of a point of land extending from the east shore into the Gulf of California, in longitude 110° 18′ W. and latitude 24° 2′ N. The population is about 2,500, but this varies with the state of the pearl fisheries and mining. The climate is extremely hot and dry. It is beyond telegraph or mail except by steamer from Guaymas.

Almost the entire exports are silver bullion. A few hides, archil, and pearls were also sent out, all to San Francisco.

The rain-fall is very limited, and the whole peninsula lies almost in a state of barren nature. There is no doubt of the fertility of the many valleys if water to irrigate could be found. Artesian wells may be found to serve this purpose in the future; and, if so, much of this lower country could be made productive.

It is generally believed there are rich silver, gold, and copper districts never yet explored. There are also deposits of shells of various and fine sorts, of guano, salts, marble, jet, etc. The pearl-fishing industry is still important, but not so profitable as formerly. In a narrow belt on the eastern side of the southern end of the peninsula the archil is found in considerable quantities. Seal are found on the islands of the gulf, whales on the west coast, and fish in great abundance in all the surrounding waters.

As there are no rivers or lakes within the limits of the territory, and as the annual rain-fall is very small, the intense heat of the sun's rays parches the whole face of the country into an arid waste for much of the year. On the Pacific coast, where the sea-breeze is not obstructed, the climate is delightful. It is below the frost line, and the midsummer heat is, I believe, even less than in localities much farther north.

The maritime movement of the port of La Paz for the year ending June 30, 1887, was confined to the entry of 5 sail vessels, all laden (1,369 tons), bringing 2 passengers, and the clearing of 4 (630 tons), 1 laden, 3 light, and carrying away 50 passengers.

The imports for the half-year ending December 31, 1885, were, invoice values in United States coin, $47,879, and the exports for the year ending June 30, 1887, in United States coin, $478,888.

San Lucas.—San Lucas is a town of some 1,500 inhabitants, at the extreme southern end of the peninsula, in longitude 109° 35′ W. and latitude 22° 52′ N. It has no special industries except that, where water for irrigation can be obtained, fine fruits and vegetables are raised.

One steam vessel of 677 tons entered during the year, bringing 2 passengers.

The imports for the half-year ending December 31, 1885, were, invoice values in United States coin, $1,450, and the exports for the year ending June 30, 1887, $5,533.

Bahia de la Magdalena.—Bahia de la Magdalena is a large, well-sheltered harbor, about 140 miles north from Cape San Lucas, on the Pacific coast, in longitude 112° 2′ W. and latitude 24° 30′ N.

The little town faces the bay, which serves as a port of call for whalers and steamers from San Francisco to the lower coast. Most of the few goods imported are for La Paz.

In the year 1887 there were 11 steam vessels entered (7,447 tons), bringing 8 passengers, while 12 sailed, carrying 41 passengers. Three sail vessels (2,211 tons) entered and 7 sailed.

The imports for the half-year ending December 31, 1885, were, in United States coin invoice values, $6,044, and the exports for the year ending June 30, 1887, were $81,948.

Santa Rosalia.—Santa Rosalia is a newly opened port on the bay of the same name, on the west coast, about 250 miles north from Magdalena, and bearing east and north from Cedar Island. I am not able to give its exact location, but, approximately, it is in longitude 114° 15′ W. and latitude 28° 30′ N.

A small steam vessel of 100 tons entered twice and cleared once, while 14 sail vessels, measuring 8,389 tons, entered, and 6 (5,912 tons) cleared during the year ending June 30, 1887.

The imports for the half-year ending December 31, 1885, were, invoice values in United States coin, $28,031, and the exports for the year ending June 30, 1887, in United States coin, were only $200.

Ensenada. — Ensenada de Todos Santos, the last port on the Pacific coast, is some 70 miles from the American border on the beautiful All-Saints' Bay, in longitude 116° 35′ W. and latitude 31° 40′ N.

In and near the place the International Company of Mexico has an immense tract, estimated at 17,000,000 acres, lying between parallel 28° N., or near the port of Santa Rosalia, and the boundary of the United States, which is now being settled with colonists as rapidly as possible. The soil is of unsurpassed fertility, and will raise in abundance all cereals, fruits, and vegetables now produced in California. The only lack is water, and if this can be supplied, whether by artesian wells, reservoirs, or any other method, most of the upper half of the west coast can be made wonderfully productive. The climate along the coast is nearly, if not quite, equal to that around San Diego, Cal., 100 miles to the north.

The company, whose New York office is at 160 Broadway, now has two colonies established, and advertises for immigrants from Europe, the United States, or Mexico. The colony "Carlos Pacheco" includes settlements at Ensenada, Punta Banda, and San Carlos. There is telegraphic and telephonic communication with San Diego, Cal., and a railway from that place is now building. The "Romero Rubio" colony, at San Quintin, about 100 miles down the coast, includes settlements at San Quintin, Colnett, Camalu, and San Isidro.

At Ensenada fine hotels are ready for winter tourists; steamers connect with San Diego, and there are valuable mineral deposits in the mountains back from the coast.

Fruit culture is already an industry of some importance, and at Guaymas and other points on the lower coast I saw quantities of canned fruits, put up at Ensenada.

In the year ending June 30, 1887, 68 steam vessels (12,239 tons) entered, all light but 2, while 68 cleared, all light. Sixty-three sail vessels (2,774 tons) entered, 36 laden, 27 light; and 53 cleared, all light.

The imports for the half-year ending December 31, 1885, were $3,158, and the exports for the year ending June 30, 1887, were $1,288.

AMERICAN FRONTIER CUSTOM-HOUSES.

Tijuana. — Tijuana is a small place near the frontier between Lower California and California, in longitude 116° 45′ W. and latitude 32° 30′ N. It is the most western port of the frontier which enjoys the privileges of the Zona Libre, but is of very little importance at present.

Wherever the proposed railway from San Diego to Ensenada crosses the boundary, whether at Tijuana or at some other point, there will be a small

but growing international traffic. At present, although it is the only custom-house on the boundary for some 300 miles, the imports for the six months ending December 31, 1885, were only $7,832, and the exports for the year ending June 30, 1887, $35,044.

Quitovaquita. — Quitovaquita, the next border custom-house, is a little village near the line, in Sonora, in longitude 112° 50′ W. and latitude 31° 50′ N., about 150 miles east of the junction of the Gila and Colorado Rivers.

The imports for the half-year ending December 31, 1885, were $3,056, and the exports for the year ending June 30, 1887, were $672. For the year ending June 30, 1888, there were no exportations whatever.

Sasabe. — Sasabe, the next custom-house, is about 90 miles east of Quitovaquita near monument No. 13, in longitude 111° 50′ W. and latitude 31° 30′ N.

The imports, via Sasabe, from Tucson to Altar, for the half-year ending December 31, 1885, were $9,423, and the exports for the year ending June 30, 1887, $42,042, mostly beef cattle. There may be a few places that are hotter than Quitovaquita and Sasabe, but if so, their reputation has not yet been established.

Nogales. — Nogales, the next border port of entry, is on the line between Arizona and Sonora. One-half the city, which has 5,000 or more inhabitants, is Nogales, Sonora, and the other Nogales, Ariz. The two are located in a high, dry, rolling country, 100 miles due south from Tucson, in longitude 111° W. and latitude 31° 20′ N.

The New Mexico and Arizona Railway to Benson, 88 miles, connects with the Southern Pacific and Santa Fé systems, and the Sonora Railway, which is part of the latter system, goes south to Guaymas, 263 miles.

The surrounding country is good for grazing, and in the valleys for agriculture. There are good mining districts in every direction, and the prosperity of the two cities depends largely on this industry. Comparatively speaking, every third man has a silver mine, and his pockets full of ore. There are several reduction works on the American side of the line, and a considerable amount of bullion is produced.

The geographical situation is, I believe, unique. The line between Mexico and the United States is indicated now by monuments, so that by stopping to take your range you can usually tell, in daylight at least, where you are. This same line passes obliquely through the station of the railway. The consular agent, when I was there, was also the agent for Wells-Fargo. In his former capacity he signed invoices and landing certificates at his consular desk on the Sonora side of the office, and when he got around to Wells-Fargo's work he gravely crossed to the other desk, 15 feet away, located in Arizona, and dispatched express packages, etc. As the laws of the two towns are very different, only the best of feeling and good sense can prevent frequent conflicts. There have been some of these, but many less than could be reasonably expected.

Nogales, Sonora, is now a Zona Libre port, and hence the Mexican customs inspectors do not need to be so strict about the crossing of small packages. This reduces much of the tension, and makes the life of the inhabitants rather easier.

A part of the town sprang up before the boundary was correctly located, and, as a result, curious complications ensued. Two rows of bricks of the walls of one house were found to project into Mexico, and the Mexican owner of the land had to be placated in some manner. A part of the way the line ran along the edge, then in the middle of the sidewalk, and finally left it and took to the street, along which it meandered until it struck the base of a high hill on the edge of the town.

If two gentlemen had a difficulty they crossed over the line, settled it up, and retreated for refreshments before a policeman could apprehend them. Once across the line, "the peace and dignity" of that sovereign not having been offended, they could not be disturbed. When the excise laws of the United States were found too severe or expensive one favored individual set up his bar in the Mexican corner of his saloon. Without dwelling longer, it is easy to imagine the many curious incidents which occur daily.

It is a very arid region, 3,836 feet above sea-level, and the titles to land on either side are in an unsatisfactory condition. In spite of this latter difficulty there are some fine, substantial buildings, and so long as the mines hold out the place has a considerable future before it.

There is one daily mixed train to and from Nogales, from Benson, Ariz., and Guaymas, Mexico. Specials are also run over each road as required, but as yet the commerce is very small. At present I doubt if the Sonora Railway more than pays operating expenses and repairs, but in time it is bound to be profitable. It extends through the naturally fertile valley of the Sonora River, and when land gets scarce and too costly in other parts of the world, people will come here to find room and cheaper homes. The train between Nogales and Benson is the famous "Burro Train," a title which its time-table has honorably earned. The time-table allows eight hours to make the distance of 88 miles — it is occasionally one to three hours late — and this headlong speed has been caught up by the facile western mind and compared to the patient burro.

The imports for the half-year ending December 31, 1885, invoice values in United States coin, were $169,292, and the exports for the year ending June 30, 1887, United States coin, were $534,780.

On leaving Nogales to come east the commercial supremity of San Francisco is broken. At El Paso it is already secondary, and farther east very small; but at Nogales, Guaymas, all of Lower California, and most of the Pacific ports of Mexico, San Francisco is the commercial metropolis. Steamers and railways connect with or run to that city; the exchange most sought is on San Francisco; goods come from there, exports are sent there, and San Francisco and coast people are found in every town.

One other sign of the Pacific coast is found all through this section — the specie belt and the chink of yellow gold. At El Paso the eagle and the greenback shake hands fraternally, but east and west of that point are their respective domains.

Palominas.— Palominas is near the border, about 70 miles east of Nogales and the same distance south of Tombstone.

The imports for the half-year ending December 31, 1885, were $14,075, and the exports for the year ending June 30, 1887, $42,935.

Ascension.— The custom-house at this point has been lately removed to a more convenient location. It is now between 50 and 100 miles west of El Paso, and is where some Mormon colonists have entered to go to one of their settlements near there.

Imports for the half-year ending December 31, 1885, $1,751, and exports for the year ending June 30, 1887, $37,672.

Ciudad Juarez.— Ciudad Juarez, or, as it was formerly known, Paso del Norte, is in longitude 106° 29′ W. and latitude 31° 44′ N., 1,303 miles by the course of the stream, from the mouth of the Rio Grande.

The Mexican town lies on the right bank of the Rio Bravo, or Grande, which from here to the mouth is the boundary. The elevation near the city at the point where the boundary line leaves the river is 3,684 feet above sea-level. The river, which has flowed south through New Mexico, turns near here toward the southeast. The famous valley begins just above this curve and extends on both banks some distance below.

While the valley is narrow it is very fertile, and, where water for irrigation can be obtained, produces fine crops of fruits, vegetables, and cereals. The most perfect apples I ever saw grew in this same old town. Fine grapes for table, wine, or raisins, and El Paso onions have made this section celebrated for nearly three hundred years. During all this time and until a few years since this far-off place had only a small population and less commerce.

One branch of the "overland trail" from Saint Louis, Mo., to Chihuahua and Durango, crossed the line here. Indians were plentiful, and many travelers were murdered by them on the roads each way from here. A few years since the Southern Pacific, Texas Pacific, and Santa Fé systems reached here, and a marvelous change took place. Then the Galveston, Harrisburg and San Antonio joined the Southern Pacific, making a through line via El Paso from New Orleans to San Francisco, and the Mexican Central was built, 1,225 miles southeast, to Mexico city.

El Paso, Tex., and Paso del Norte, Mexico, had a "boom," "went into bonanza," and within a few years grew to be the most important and populous crossing point on the American border.

El Paso, Tex., has fine buildings, gas, water-works, electric lights, reduction works, telephones, and every known adjunct of city life. The plodding Chinaman is here in full force, washing the soiled linen of Americans from every State and Territory, of Germans, French, English, Irish, Spaniards, Italians, and Mexicans. It is highly — even oppressively — cosmopolitan

and aggressively enterprising. Besides the railway bridge there is a wagon and foot bridge and a line of street-cars from the railway depot in Ciudad Juarez to the Southern Pacific depot in El Paso.

A few months since the name of the Mexican town was formally changed from the Village of Paso del Norte to the City of Juarez in recognition of its increased population and in honor of the president who so valiantly withstood Maximilian and the intervention of the French. Ciudad Juarez has now 4,000 or 5,000 inhabitants, and is, commercially, the second city of Mexico. It is in and enjoys the privileges of the Zona Libre.

The completion of other lines from other points on the border into the interior will reduce the volume of trade through here, but the increased development of that portion of Mexico which must continue to be tributary to the lines centering here will partly or wholly overbalance this loss.

There are schemes for utilizing the surplus waters of the Rio Bravo for irrigation, but as this stream is often very small here the quantity will not be sufficient for all these plans. Each side has suffered or gained from degradation or accretion to its banks, and various means have been resorted to to prevent this loss or to get back lost soil. The questions of ditches and of protecting from the cutting of the banks are a fertile source of local alarms and protests and will need to be fully regulated by international agreement.

The Mexican Central Railway Company runs one through passenger train each way daily to the City of Mexico. The distance (1,225 miles) is covered in sixty-two hours. A Pullman car is attached to each train. Freight trains, regular and special, are run to suit the varying commercial necessities. The Santa Fé and Texas Pacific each run a passenger train in and out of El Paso daily, and the Southern Pacific one each way daily.

The climate is very healthful and fine hotels tempt the winter tourist. At present living is rather expensive, but with more cultivation of fruits and vegetables in the valley the cost will be less, and large numbers of health seekers will visit here each winter.

The imports for the year ending December 31, 1885, invoice values in United States coin, were $1,572,739, or at the rate of over $3,000,000 per annum. The exports for the fiscal year 1887, in United States coin, were $8,512,828. To show what a change ten years has made I state that the invoice values, in United States coin, of the total imports at Paso del Norte for the whole year ending June 30, 1875, were $47,197, and the total exports for the same period, Mexican coin reduced to United States coin at 80 cents, $23,558.

Presidio del Norte.— Presidio del Norte is on the right bank of the river, 450 miles down stream from Ciudad Juarez, in longitude 104° 26′ W. and latitude 29° 34′ N., and about 2,780 feet above sea-level. This place was formerly a crossing point for a small trade, but since the railways have gone above and below it even this has nearly all ceased. Aside from some few narrow valleys the surrounding country is only good for grazing and not good for much for that purpose.

The imports for the half-year ending December 31, 1885, were $25,255, and the exports for the year ending June 30, 1887, $13,269.

Piedras Negras. — Piedras Negras is opposite to Eagle Pass, Tex., 469 miles by the course of the river from its mouth, in longitude 100° 30′ W. and latitude 28° 30′ N., and is 1,461 feet above sea-level. It has 3,000 or more inhabitants, is a port of the Zona Libre, and, since the International Railway was completed to Torreon, on the Mexican Central, 384 miles distant, giving a through line to the City of Mexico, it has grown rapidly.

As regards through traffic between San Antonio, New Orleans, and Saint Louis and the interior of Mexico, it has a decided distance advantage over El Paso. From the latter to Mexico city is 1,225 miles, and El Paso itself is some 500 miles further from San Antonio, etc., than is Eagle Pass. From San Antonio to Mexico city via El Paso and Ciudad Juarez is 1,857 miles, while via Eagle Pass and Piedras Negras it is only 1,256. The International has a fine iron bridge across the river, which connects their line with the Southern Pacific.

The climate of this section is healthful, although there are very sudden and extreme changes in temperature. It is a fine grazing country, and there are many fertile valleys which can be irrigated and so made to produce fine crops. There is an abundance of coal, although the quality thus far is not very good. The river has a sufficient volume of water to enable ditches to be run from either side to fertilize large tracts.

Back from Piedras Negras are good mining districts of silver, coal, and gold. The Sabinas coal fields, the Santa Rosa silver mines, and the Sierra Mojada silver and gold mines are tapped by the railways to Torreon. At San Felipe, a short distance above, the barren mountains stop, and from here on to the river's mouth is a fertile country.

The commerce of the place has only fairly begun as yet, but I believe this is bound to be one of the most important points on the river. The imports for the half-year ending December 31, 1885, were $31,995, and the exports for the year ending June 30, 1887, were $406,076. The exports for the year ending June 30, 1888, will show an increase of nearly $300,000.

Laredo de Tamaulipas. — Laredo de Tamaulipas is opposite Laredo, Tex., or old Laredo, 130 miles further down stream, 365 miles by the river from the mouth, in longitude 99° 29′ W. and latitude 27° 30′ N., and 806 feet above sea-level. It is a port of the Zona Libre, and has a population of some 5,000.

The Mexican National Railway, narrow-gauge, begins here, and is now built clear through to Mexico city, 837 miles. One through passenger train is dispatched each way daily with Pullman car attached, and the 837 miles are made in about forty hours. Besides the main line there are several branch lines and more are building, all of which will aid in bringing commerce to the line and through this city. The International and Great Northern Railway reaches Laredo, Tex., and the Texas Mexican from Corpus Christi, narrow-gauge, is part of the Mexican National system.

The two Laredos are vigorous, enterprising towns, have water-works, electric lights, telephones, etc., and are being extensively advertised. The immediate country is poor, but back a short distance on the Texas side is fine grazing. There are large deposits of coal near on either side, and the quality seems to improve as the veins are developed. The mines in toward Monterey and beyond are turning out considerable quantities of ores, and the output will likely continue to increase. Reduction works are already in operation in Laredo, Tex., and both towns bid fair to have a very prosperous future.

A railway up river on the Texas side to the coal fields, some 30 miles distant, is already in operation, and this will probably be built on to Eagle Pass and later down river to Brownsville and tide-water. The Laredo route of 837 miles is, as I have stated, narrow-gauge, and it is still a question whether this width of track will be retained or changed to a standard gauge. While the latter is probable and will be the result of one or two good traffic years, it is not to be immediately expected.

The railways have an iron bridge across the river and a company has been formed to build a wagon bridge. The Mexican Government has a fine custom-house on its side, and there are many substantial buildings on either side of the river.

The imports for the half-year ending December 31, 1885, invoice values in United States coin, were $604,907, and the exports for the year ending June 30, 1887, $1,138,223.

Guerrero.— Guerrero is about 4 miles from the Rio Grande, opposite Carrizo, Tex., 304 miles by river from the mouth; has a population of some 4,000 and but very little commerce. The imports for the half-year ending December 31, 1885, were $18,933, and the exports for the year ending June 30, 1887, were $28,077.

Mier.— Mier is about 6 miles from the Rio Grande, opposite Roma, about 258 miles from the mouth; has a population of about 6,000, and but little commerce. The exports for the half-year ending December 31, 1885, were $43,144, and the exports for the year ending June 30, 1887, $154,720.

Camargo.— Camargo, opposite Rio Grande City (Ringgold Barracks), Tex., is a couple of miles back from the Rio Grande, 241 miles by the river from its mouth. The population is 4,000 or 5,000, and the commerce unimportant. During the half-year ending December 31, 1885, the imports were $10,300, and the exports for the year ending June 30, 1887, $67,920.

From Camargo to Matamoros by the course of the river is 241 miles, but by the stage to San Miguel (20 miles) and the railway the rest of the distance (76 miles) is less than 100 miles.

Guerrero, Mier, and Camargo are all three ports in the Zona Libre, but even this privilege has not prevented the steady loss of trade during the last five years. Mier and Camargo, as well as the small village of Reynosa, 50 miles by rail from Matamoros, depend upon the latter city for their prosperity, and if any of the projected railways should be actually completed to Matamoros, all these towns would be greatly benefited. As it is, all these

places are standing still or retrograding. In the meantime, however, more of the fertile valley of the lower river is being cultivated each year, and the whole region only awaits railways to be as prosperous as points above along the border.

STATISTICS OF MEXICAN COMMERCE.

The foregoing summary of important data regarding the maritime and frontier custom-houses of Mexico will enable the reader to get a comparative view of the location and commerce of each place.

The tables which follow are as to exports for the year ending June 30, 1887. The imports for the half year ending December 31, 1885, — the last one for which statistics have been formulated — are given at length in the report accompanying my No. 500 of June 12, 1888. (See CONSULAR REPORTS No. 94.)

Table A, following, shows the exports by articles of other products from each custom-house by quantities and values, and where sent; table B shows the same as to precious metals; table C shows exports from different custom-houses of other products, precious metals, and totals; table D shows exports to different countries of other products, precious metals, and totals; table E is comparative as to different articles, and shows annual average for five years ending June 30, 1886, total for year ending June 30, 1886, and for year ending June 30, 1887; table F is comparative by countries for same periods; table G is comparative for same periods for precious metals, for other products, and for total exports.

WARNER P. SUTTON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Matamoros, December 22, 1888.

A.—*Exports, other than precious metals, from Mexico for year ending June 30, 1887.*

[Values in United States gold — reduced from Mexican silver at 80 cents on the dollar.]

Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Hennequen hammocks:	*Kilograms.*			
Progreso	167,188	$43,891	United States	$06,065
Acapulco	48	2	Spain	17,789
Total	167,236	43,893	Other	39
Hennequen rope:				
Progreso	380,801	37,862	Spain	37,261
Guerrero	87	32	Other	633
Total	380,888	37,894		
Hennequen, raw:				
Campeche	540,315	40,580	Germany	17,421
Progreso	38,447,615	2,998,937	Spain	30,804
Total	38,987,930	3,039,517	United States	2,811,061
			France	20,182
			Great Britain	160,049

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Wood, common:	*Kilograms.*			
Laredo	157,703	$1,922	United States	$3,268
Manzanillo	12,000	640	Other	134
Salina Cruz	69,552	346		
Other	47,164	494		
Total	286,419	3,402		
Wood, fine:				
Campeche	145,000	160	Germany	12,917
Coatzacoalcos	14,014,550	118,362	Spain	3,085
Frontera	26,847,419	242,224	United States	313,983
Isla del Carmen	18,454,151	325,287	France	9,160
Manzanillo	87,000	1,512	Great Britain	440,518
Mazatlan	42,055	645		
Progreso	243,551	3,392		
San Blas	2,021,229	10,575		
Túxpan	4,838,339	77,213		
Vera Cruz	22,653	293		
Total	66,715,947	779,663		
Mulberry wood:				
Frontera	45,000	320	Germany	8,006
Isla del Carmen	58,608	850	United States	64,918
Matamoros	3,000	24	France	34,188
Salina Cruz	70,000	1,120	Great Britain	35,785
Tampico	8,446,121	113,797		
Túxpan	745,300	8,582		
Vera Cruz	1,969,426	18,204		
Total	11,337,455	142,897		
Dye-wood:				
Altata	699,022	13,065	Germany	113,924
Campeche	3,219,577	39,725	Spain	19,011
Frontera	209,252	2,166	United States	52,448
Guaymas	589,940	5,200	France	47,004
Isla del Carmen	19,303,805	284,952	Great Britain	320,558
Mazatlan	771,297	12,640		
Progreso	7,687,089	125,637		
Salina Cruz	3,880,200	64,120		
Tonalá	320,000	3,840		
Túxpan	150,000	1,600		
Total	36,830,182	552,945		
Hides and skins, tanned:				
Acapulco	6,300	6,600	Germany	4,052
Laredo	10,856	2,106	Spain	13,133
Progreso	49,891	14,916	United States	6,614
Tonalá	166	531	Other	819
Other	1,446	465		
Total	68,659	24,618		
Sheep-skins:				
Laredo	5,046	883	United States	2,402
Paso del Norte	9,169	1,381		
Other	789	138		
Total	15,004	2,402		
Goat and kid skins:				
Camargo	29,956	14,118	Spain	1,672
Guerrero	16,966	9,163	United States	779,241
La Paz	7,119	1,130	Other	687

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Goat and kid skins—Continued.	*Kilograms.*			
Laredo	448,570	$202,537		
Matamoros	61,062	19,673		
Mier	56,014	26,457		
Paso del Norte	194,825	69,681		
Piedras Negras	29,378	11,491		
Tampico	6,582	3,574		
Vera Cruz	735,057	423,300		
Other	2,284	476		
Total	1,587,813	781,600		
Beef-skins:				
Acapulco	222,753	47,550	Germany	$59,306
Bahia de la Magdalena	11,777	2,325	Colombia	24,756
Cabo de San Lucas	34,787	3,820	Spain	41,693
Camargo	54,693	13,820	United States	702,685
Campeche	17,290	3,194	France	5,492
Frontera	99,393	24,998	Great Britain	24,344
Guaymas	62,961	11,486		
Guerrero	23,492	5,657		
Isla del Carmen	470,557	33,901		
La Paz	146,677	28,529		
Laredo	188,182	55,085		
Manzanillo	80,658	16,112		
Matamoros	352,283	73,184		
Mazatlan	242,009	32,177		
Mier	61,672	16,446		
Nogales	168,212	21,499		
Paso del Norte	208,933	20,721		
Piedras Negras	80,264	17,593		
Presidio del Norte	8,975	1,823		
Progreso	114,551	22,512		
Puerto Angel	7,707	1,509		
Salina Cruz	147,026	29,099		
San Blas	75,198	9,084		
Sasabe	12,783	1,701		
Soconusco	45,722	11,450		
Tampico	274,674	72,278		
Tonalá	102,388	20,718		
Túxpan	127,427	39,321		
Vera Cruz	892,537	219,882		
Other	10,617	882		
Total	4,346,198	858,296		
Deer-skins:				
Acapulco	18,637	6,639	Germany	1,570
Camargo	3,807	1,234	Colombia	1,833
Campeche	1,658	563	United States	76,400
Frontera	20,983	4,321	Other	237
Isla del Carmen	2,639	569		
La Paz	7,457	1,298		
Laredo	5,533	2,703		
Manzanillo	3,538	868		
Matamoros	21,977	6,378		
Progreso	41,813	19,078		
Salina Cruz	2,953	1,353		
Soconusco	3,870	2,257		
Tampico	6,519	2,491		
Tonalá	7,123	2,834		
Túxpan	12,304	5,965		

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Deer-skins—Continued.	*Kilograms.*			
Vera Cruz	41,600	$ 79,809		
Other	1,828	080		
Total	193,639	80,040		
Miscellaneous skins:				
Camargo	2,711	622	United States	$22,016
Frontera	12,500	800	Other	178
Laredo	16,595	5,555		
Matamoros	58,200	13,733		
San Blas	4,553	705		
Other	2,947	779		
Total	97,506	22,194		
Coffee:				
Laredo	58,296	14,448	Germany	119,278
Manzanillo	15,170	3,150	Belgium	1,448
Paso del Norte	20,837	4,969	Spain	121,056
Puerto Angel	183,941	41,030	United States	1,558,865
Salina Cruz	2,278	771	France	151,539
Soconusco	1,225,918	323,773	Great Britain	149,251
Tampico	75,387	19,370	Other	545
Tuxpan	15,636	3,702		
Vera Cruz	6,726,940	1,690,350		
Other	1,812	419		
Total	8,326,215	2,101,982		
	Head.			
Asses, all	92	375	United States	375
Horses:				
Ascension	878	4,710	United States	154,278
Camargo	818	6,428		
Guerrero	545	4,132		
Laredo	2,959	24,970		
Matamoros	6,184	48,873		
Mier	2,039	15,852		
Paso del Norte	2,920	21,930		
Piedras Negras	3,156	22,003		
Presidio del Norte	179	2,038		
Sasabe	95	686		
Tijuana	132	2,256		
Vera Cruz	1	400		
Total	19,906	154,278		
Sheep and goats:				
Guerrero	10,657	6,444	United States	50,586
Laredo	12,453	12,016		
Piedras Negras	9,000	3,600		
Tijuana	25,450	27,960		
Other	707	566		
Total	58,267	50,586		
Mules:				
Camargo	254	3,008	United States	34,521
Laredo	672	10,490		
Mier	1,073	16,671		
Paso del Norte	178	2,492		

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Mules—Continued.	*Head.*			
Piedras Negras	56	$827		
Other	63	1,033		
Total	2,296	34,521		
Cattle:				
Ascension	1,980	17,690	United States	$135,958
Camargo	177	1,209	Great Britain	360
Guerrero	461	1,631		
Laredo	1,235	9,716		
Matamoros	1,540	8,656		
Mier	260	1,461		
Nogales	363	2,705		
Palominas	2,845	18,004		
Paso del Norte	3,255	19,120		
Piedras Negras	2,065	15,177		
Presidio del Norte	271	3,564		
Progreso	25	360		
Sasabe	5,153	32,417		
Tijuana	276	4,608		
Total	19,906	136,318		
All other animals, all		1,098	Great Britain	786
			United States	312
Vanilla:	*Kilograms.*			
Túxpan	34,950	448,982	United States	523,074
Vera Cruz	8,556	65,798	France	32,030
Other	9	333	Germany	9
Total	43,515	555,113		
Ixtle:				
Laredo	1,243,294	67,162	United States	222,385
Paso del Norte	2,220	830	Great Britain	44,117
Vera Cruz	29,577	3,091	Germany	2,747
Matamoros	24,690	1,310	France	9,824
Tampico	2,581,765	206,660		
Other	75	20		
Total	3,881,621	279,073		
Tobacco, manufactured:				
La Paz	2,313	2,665	Germany	46,959
Mazatlan	1,311	2,756	Colombia	2,961
Paso del Norte	4,990	7,213	Spain	4,360
San Blas	5,661	3,685	United States	21,625
Vera Cruz	264,362	384,722	France	19,671
Other	435	409	Great Britain	301,609
Total	279,072	401,450	Venezuela	4,060
			Other	205
Leaf tobacco:				
Paso del Norte	2,983	2,118	Germany	100,227
Vera Cruz	539,744	276,850	Belgium	51,638
Other	2,621	227	United States	10,761
Total	545,348	279,195	France	60,785
			Great Britain	55,644
			Other	140
Caoutchouc:				
Salina Cruz	4,048	2,202	Germany	14,926
San Blas	1,766	1,388	Colombia	1,602
Soconusco	43,934	34,967	United States	219,979
Tonalá	17,003	13,602	Great Britain	7,117

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Caoutchouc—Continued.	*Kilograms.*			
Túxpan	17,978	$18,831		
Vera Cruz	79,897	71,729		
Other	3,498	905		
Total	168,124	143,624		
Seed:				
Laredo	753,696	37,688	United States	$253,958
Paso del Norte	419,518	43,326	Great Britain	4,606
Piedras Negras	2,007,456	175,950		
Vera Cruz	3,540	1,600		
Total	3,184,210	258,564		
Sugar:				
Isla del Carmen	173,366	8,126	United States	8,483
Vera Cruz	1,958,510	89,727	Great Britain	89,352
Other	35,055	1,374	Other	1,392
Total	2,166,931	99,227		
Raiz de Zacatón:				
Vera Cruz	1,507,518	235,808	Germany	82,049
Other	5	2	Belgium	651
			Spain	2,472
Total	1,507,523	235,810	United States	56,117
			France	84,202
			Great Britain	10,319
Chicle:*				
Tampico	3,113	655	United States	285,930
Túxpan	546,972	284,635		
Other	20,303	640		
Total	570,388	285,930		
Honey:				
Tampico	289,045	15,965	United States	35,719
Túxpan	370,925	19,354		
Vera Cruz	795	400		
Total	660,765	35,719		
Horse hair:				
Camargo	3,838	1,335	United States	43,809
Laredo	62,877	21,823	Other	513
Matamoros	40,891	12,456		
Mier	2,780	1,832		
Progreso	6,507	2,034		
Tampico	10,759	3,677		
Vera Cruz	1,642	700		
Other	1,886	465		
Total	131,180	44,322		
Fruits:				
Acapulco	623,765	29,958	Germany	1,657
Isla del Carmen	613,404	4,563	United States	56,264
Laredo	330,159	3,706	Great Britain	1,024
Matamoros	2,864	176	Other	907
Mazatlan	3,198	164		
Nogales	139,776	8,032		
Paso del Norte	157,835	7,074		
Piedras Negras	4,817	223		
Vera Cruz	93,102	4,936		
Other	30,152	1,020		
Total	1,999,072	59,852		

*Gum of tree, base of chewing gum.

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Beans:	*Kilograms.*			
Ascension	33,565	$790	Spain	$54,893
Laredo	61,129	3,076	United States	8,934
Mier	6,938	580	Other	149
Paso del Norte	79,199	2,618		
Vera Cruz	985,976	56,071		
Other	12,624	841		
Total	1,186,431	63,976		
Orchil:				
Bahia de la Magdalena	1,134,310	79,138	Germany	8,105
Cabo de San Lucas	23,018	1,023	United States	66,928
La Paz	41,116	3,735	France	17,600
Mazatlan	113,341	9,616	Great Britain	879
Total	1,311,785	93,512		
Raiz de Jalapa:				
Vera Cruz	63,083	10,855	Germany	2,698
Tampico	428	71	United States	5,542
Total	63,511	10,926	France	1,430
			Great Britain	1,256
Pearl shells:				
La Paz	58,030	4,954	United States	4,954
Mazatlan	2,200	240	Germany	240
Total	60,230	5,194		
Pearls, fine:				
Guaymas	1	6,160	Germany	9,600
La Paz	3	4,960	United States	5,760
Mazatlan	1	4,240		
Total	5	15,360		
Wool:				
Camargo	100,427	13,520	United States	135,335
Laredo	377,700	64,266	France	124
Matamoros	72,747	9,008		
Paso del Norte	62,377	6,680		
Piedras Negras	246,704	39,158		
Presidio del Norte	9,437	2,070		
Other	4,559	757		
Total	873,951	135,459		
Indigo:				
Salina Cruz	7,585	12,136	Germany	11,879
Tonalá	21,439	34,126	United States	6,892
Vera Cruz	4,902	3,288	France	29,211
Other	750	739	Great Britain	2,307
Total	34,676	50,289		
Copper:				
Palominas	34,821	13,744	United States	29,672
Paso del Norte	122,735	15,618	Germany	376
Other	19,617	686		
Total	177,173	30,048		
Sarsaparilla:				
Matamoros	3,652	296	Germany	4,704
Tampico	410,425	44,595	United States	27,717
Túxpan	60,231	9,019	France	15,564
Vera Cruz	8,273	1,699	Great Britain	7,624
Total	482,581	55,609		

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Chickpeas:	*Kilograms.*			
Vera Cruz	524,303	$30,416	Spain	$28,936
Other	6,179	430	United States	1,910
Total	530,482	30,846		
Manufactures:				
Ascension	9,504	352	Spain	1,306
Laredo	8,372	420	United States	7,047
Paso del Norte	25,787	5,421	France	826
Vera Cruz	3,757	3,004	Other	733
Other	16,273	715		
Total	63,693	9,912		
Merchandise returned:				
Guaymas	1,827	190	Germany	736
Mazatlan	1,631	746	United States	7,122
Paso del Norte	21,888	5,333	Great Britain	119,349
Piedras Negras	4,500	600	Other	859
Progreso	8,390	440		
Vera Cruz	25,271	120,086		
Other	718	671		
Total	64,225	128,066		
Equipages:				
Paso del Norte	10,464	3,165	Germany	2,140
Vera Cruz	17,263	14,670	Spain	5,996
Other	2,084	1,000	United States	4,495
Total	29,811	18,835	France	4,763
			Great Britain	1,441
Piloncillo (brown sugar):				
Laredo	33,545	5,317	Germany	840
Paso del Norte	6,930	770	United States	7,772
Piedras Negras	4,857	642	France	1,469
Vera Cruz	170,078	6,585	Great Britain	3,776
Other	4,986	543		
Total	220,396	13,857		
Machinery:				
Laredo	115,290	16,416	United States	17,410
Progreso	2,354	512	Great Britain	88
Other	2,122	570		
Total	119,766	17,498		
Horns:				
Vera Cruz	27,613	1,482	Germany	1,440
Other	9,140	366	Other	408
Total	36,753	1,848		
Corn:				
Camargo	61,042	2,229	Spain	274
Laredo	194,000	4,519	United States	14,614
Mier	84,651	2,180		
Piedras Negras	234,497	4,311		
Presidio del Norte	17,429	714		
Other	26,726	935		
Total	618,345	14,888		
Pepper (Chile):				
Laredo	20,646	6,158	United States	7,636
Mazatlan	5,280	1,008	Other	6
Other	2,871	476		
Total	28,797	7,642		

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Spices:	*Kilograms.*			
Vera Cruz	2,606	$1,666	Spain	$1,698
Other	5,261	674	United States	642
Total	7,867	2,340		
Cocoa, all	663	340	United States	340
Hats:				
Paso del Norte		3,330	United States	3,622
Other		492	Other	200
Total		3,822		
Marble:				
Vera Cruz	281,275	12,210	United States	11,568
Paso del Norte	154	42	Other	684
Total	281,429	12,252		
Salt:				
Nogales	153,368	1,066	United States	1,284
Other	255,187	722	Other	504
Total	408,555	1,788		
Bones:				
Matamoros	686,280	4,836	United States	5,107
Other	43,740	271		
Total	730,020	5,107		
Figures of cloth, etc.:				
Vera Cruz	4,824	2,394	United States	1,073
Other	1,496	572	Great Britain	978
Total	6,320	2,966	Other	915
Jewelry and precious stones:				
Paso del Norte	15	1,039	Germany	6,000
Vera Cruz	26	6,800	Spain	800
Total	41	7,839	United States	1,039
Books, printed:				
Paso del Norte	3,754	2,586	United States	2,994
Vera Cruz	7,393	1,693	France	909
Other	469	379	Other	735
Total	11,616	4,658		
Plants:				
Vera Cruz	37,557	7,193	United States	2,220
Other	4,249	995	Great Britain	4,649
Total	41,806	8,188	Other	1,319
Furniture, all	5,106	1,340		
Feathers:				
Vera Cruz	5,754	1,987	United States	2,208
Other	719	381	Great Britain	160
Total	6,473	2,368		
Oil paintings:				
Vera Cruz	748	1,516		
Other	166	289		
Total	914	1,805		

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A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Chapopote :	*Kilograms.*			
Túxpan	153,763	$2,716	Germany	$1,064
Vera Cruz	52,337	2,470	United States	4,365
Other	12,212	243		
Total	218,312	5,429		
Barrels, empty :				
Laredo	61,680	1,379	United States	3,375
Paso del Norte	52,560	1,996		
Total	114,240	3,375		
Provisions :				
Paso del Norte	10,063	1,474	United States	1,534
Other	934	104	Other	44
Total	10,997	1,578		
Shrimps, all	8,252	1,032		
Meat, salt and fresh :				
Paso del Norte	124,879	13,442	United States	13,543
Progreso	24,812	536	Other	992
Other	14,842	557		
Total	164,533	14,535		
Bark for tanning :				
Guaymas	213,405	25,326	Germany	25,326
Nogales	41,921	5,152	Spain	1,250
Progreso	37,886	1,250	United States	5,170
Vera Cruz	532	18		
Total	293,744	31,746		
Coal, stone :				
Piedras Negras	1,425,517	9,754	United States	9,948
Other	50,716	194		
Total	1,476,233	9,948		
Phosphate of lime, Guaymas	1,436,647	39,289	Germany	36,284
			United States	3,005
Dulces :				
Vera Cruz	3,905	1,265	Germany	668
Other	6,402	832	United States	923
Total	10,307	2,097	Other	506
Gums and resins :				
Vera Cruz	5,711	960	France	420
Other	5,414	639	Great Britain	436
Total	11,125	1,599	Other	743
Leguminous plants :				
Laredo	43,690	2,666	Spain	22,862
Vera Cruz	232,879	22,866	United States	3,203
Other	8,337	550	Other	17
Total	284,906	26,082		
Wood :				
Nogales	290,082	1,176	United States	2,376
Piedras Negras	422,701	1,108		
Other	135,000	92		
Total	747,783	2,376		

A.—*Exports, other than precious metals, from Mexico, etc.*—Continued.

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Articles and whence exported.	Quantity.	Value.	Whither sent.	Value.
Lemons:	*Kilograms.*			
Acapulco	78,500	$3,674	United States	$6,646
Manzanillo	63,205	2,407		
Other	12,492	565		
Total	154,197	6,646		
Pottery:				
Paso del Norte	4,596	583	United States	1,243
Other	9,113	861	Other	201
Total	13,709	1,444		
Samples, all	9,301	1,385		
Cascarilla bark, Progreso	8,013	1,264	Spain	1,264
Sacks, Salina Cruz	7,411	1,984	Guatemala	1,984
Saddles:				
Vera Cruz		1,051		
Other		372		
Total		1,423		
Bank stock, Vera Cruz		7,840	France	7,840
Aguardiente (cane brandy):				
Vera Cruz	3,753	1,209	France	1,200
Other	944	397	Other	406
Total	4,697	1,606		
Aloes, essence of, Vera Cruz	10,121	14,458	France	5,972
			Great Britain	7,738
			Other	748
Foreign paper money, Guaymas		4,792	United States	4,792
Plombagine:				
Guaymas	35,237	1,338	United States	1,658
Nogales	4,538	320		
Total	39,775	1,658		
Photographs, all	908	1,894		
Steel in bars, all	29,318	1,040	United States	2,040
Miscellaneous, all	656,892	34,246	Mostly to United States.	

B.— *Exports of precious metals from Mexico during the year ending June 30, 1887.*

[Values in United States gold — reduced from Mexican silver at 80 cents on the dollar.]

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Articles and custom-houses.	Values.	Whither sent.	Values.
Ore:			
Acapulco	$14,400	Germany	$706,777
Altata	3,941	Colombia	2,632
Ascension	13,839	Spain	1,842
Guaymas	1,200	United States	1,928,560
La Paz	1,440	France	72,246
Laredo	160,575	Great Britain	275,413
Mazatlan	297,182	Russia	2,836
Nogales	315,305		
Palominas	11,032		
Paso del Norte	1,169,811		
Piedras Negras	56,440		
San Blas	113,923		
Sasabe	5,473		
Vera Cruz	824,359		
Other	1,386		
Total	2,990,306		
Foreign coined gold:			
Vera Cruz	28,565	Germany	979
San Blas	92	Spain	3,972
Total	28,657	United States	20,575
		France	2,560
		Great Britain	571
Mexican coined gold:			
Guaymas	2,040	Spain	2,580
Mazatlan	63,874	United States	96,395
Paso del Norte	35,268	France	32,454
Progreso	400	Great Britain	27,578
Tampico	1,127		
Vera Cruz	56,298		
Total	159,007		
Gold bullion:			
Guaymas	22,024	United States	66,230
Mazatlan	10,233	France	52,282
Paso del Norte	28,986	Great Britain	109,103
San Blas	2,416		
Vera Cruz	163,585		
Other	361		
Total	227,605		
Foreign coined silver:			
Mier	712	Spain	24,100
Progreso	1,351	United States	6,044
Tonalá	7,823	France	132,824
Vera Cruz	305,466	Guatemala	160
Other	1,115	Great Britain	147,658
Total	316,467	Nicaragua	5,681
Mexican coined silver:			
Acapulco	23,280	Germany	4,160
Cabo de San Lucas	240	Colombia	39,360
Camargo	9,552	Costa Rica	1,160
Guaymas	124,454	Spain	50,366
La Paz	20,640	United States	6,820,146
Laredo	248,774	France	3,160,041
Manzanillo	63,568	Guatemala	1,680
Matamoros	142,276	Great Britain	7,487,695

B.—*Exports of precious metals from Mexico etc.*—Continued.

Articles and custom-houses.	Values.	Whither sent.	Values.
Mexican coined silver—Continued.			
Mazatlan	$477,515		
Mier	71,434		
Nogales	1,680		
Paso del Norte	5,515,025		
Piedras Negras	45,352		
Presidio del Norte	1,920		
Progreso	1,760		
Salina Cruz	1,980		
San Blas	9,752		
Soconusco	800		
Tampico	124,517		
Tonalá	45,488		
Vera Cruz	10,634,601		
Total	17,564,608		
Silver mixed with gold:			
Guaymas	229,433	United States	$447,603
Nogales	104,434		
Paso del Norte	113,416		
Sasabe	320		
Total	447,603		
Silver bullion:			
Guaymas	882	Germany	29,519
La Paz	407,018	Spain	614
Laredo	148,635	United States	3,506,676
Mazatlan	2,284,272	France	68,573
Nogales	69,858	Great Britain	849,607
Paso del Norte	1,263,450		
Progreso	614		
San Blas	5,512		
Sásabe	6,446		
Vera Cruz	267,641		
Other	661		
Total	4,454,989		
Silver, sulphate of:			
Mazatlan	459,147	Germany	286,814
Paso del Norte	101,710	United States	365,592
San Blas	91,549		
Total	652,406		
All other	6,755		

SUMMARY.

Total precious metals	$26,848,403
Total other articles	12,505,142
Given total exports	39,353,545

C.—*Exports from Mexico, by custom-houses, during the year ending June 30, 1887.*

[Values in United States gold—reduced from Mexican silver at 80 cents on the dollar.]

Custom-houses.	Precious metals.	Other articles.	Total.
Acapulco	$38,310	$95,072	$133,382
Altata	3,941	13,065	17,006
Ascension	13,839	23,833	37,672
Bahia de la Magdalena		$21,948	$21,948

C.— *Exports from Mexico, by custom-houses, etc.*— Continued.

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Custom-houses.	Precious metals.	Other articles.	Total.
Cabo de San Lucas	$264	$5,269	$5,533
Camargo	9,552	58,368	67,920
Campeche	.....	84,456	84,456
Coatzacoalcos	.....	118,362	118,362
Frontera	752	276,124	276,876
Guaymas	380,594	94,913	475,507
Guerrero	.....	28,077	28,077
Isla del Carmen	.....	661,253	661,253
La Paz	429,374	49,514	478,888
Laredo	557,985	581,238	1,139,223
Manzanillo	63,570	26,768	90,338
Matamoros	142,276	201,314	343,590
Mazatlan	3,597,406	69,314	3,666,720
Mier	72,146	82,574	154,720
Nogales	492,162	42,618	534,780
Palominas	11,112	31,823	42,935
Paso del Norte	8,227,798	285,030	8,512,828
Piedras Negras	101,792	304,284	406,076
Presidio del Norte	1,920	11,349	13,269
Progreso	4,125	3,275,363	3,279,488
Puerto Angel	.....	42,688	42,688
Quitovaquita	560	112	672
Salina Cruz	2,380	113,746	116,126
San Blas	223,244	27,858	251,102
Santa Rosalia	.....	200	200
Sasabe	12,239	34,803	47,042
Soconusco	800	373,249	374,049
Tampico	125,644	484,673	610,317
Tijuana	.....	35,044	35,044
Todos Santos	400	888	1,288
Tonalá	53,705	75,738	129,443
Túxpan	.....	960,206	960,206
Vera Cruz	12,280,513	3,854,008	16,134,521
Total	26,848,403	12,505,142	39,353,545

D.— *Exports from Mexico, by countries, for year ending June 30, 1887.*

[Values in United States gold — reduced from Mexican silver at 80 cents on the dollar.]

Where sent.	Precious metals.	Other articles.	Total.
Germany	$1,031,929	$708,687	$1,740,616
Belgium	.....	53,861	53,861
Colombia	41,992	33,406	75,398
Costa Rica	800	994	1,794
Spain	83,475	416,760	500,235
United States	13,260,896	8,922,076	22,182,972
France	3,520,978	569,038	4,090,016
Guatemala	1,840	2,214	4,054
Honduras	.....	696	696
Great Britain	8,897,616	1,792,134	10,689,750
Italy	.....	456	456
Nicaragua	6,041	536	6,577
Russia	2,836	.....	2,836
San Salvador	.....	224	224
Venezuela	.....	4,060	4,060
Total	26,848,403	12,505,142	39,353,545

E.— *Comparative exports from Mexico, by articles.*

[Values in United States gold — reduced from Mexican silver at 80 cents on the dollar.]

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Articles.	Annual average, five years ending June 30, 1886.	Year ending June 30, 1886.	Year ending June 30, 1887.
Bullion and specie:			
Silver—			
Coined	$17,270,651	$17,575,966	$17,564,608
Bullion	3,923,464	4,011,390	4,454,989
Ore	828,803	1,447,869	2,990,306
Sulphate of	74,831	92,874	652,406
Gold —			
Coined	287,834	253,551	159,007
Bullion	399,252	232,423	227,605
Various ores	59,640	220,992	454,358
Foreign coined —			
Gold	70,339	44,539	28,657
Silver	100,571	45,517	316,467
Total bullion and specie	23,015,385	23,925,121	26,848,493
Merchandise:			
Hennequen	2,730,575	2,343,293	3,121,304
Woods	1,412,221	1,351,039	1,478,907
Hides and skins	1,443,566	1,706,688	1,769,150
Coffee	1,377,943	1,359,779	2,101,982
Animals, live	433,980	498,325	377,176
Vanilla	425,150	419,178	555,113
Ixtle	455,635	370,716	279,073
Tobacco	299,658	422,855	680,645
Caoutchouc	104,270	86,791	143,624
Lead	177,466	388,759	258,564
Sugar	136,778	143,109	99,227
Raiz de Zacatón	115,352	233,642	235,819
Chicle	73,288	127,006	285,930
Honey	74,559	47,564	35,719
Horse-hair	51,578	56,906	44,322
Fruits, fresh	56,037	59,153	59,852
Beans	54,510	34,801	63,976
Orchil	65,750	57,496	93,512
Raiz de Jalapa	30,324	19,641	10,926
Pearl shells	40,396	15,826	5,194
Pearls, fine	22,931	6,160	15,360
Wool	72,445	176,057	135,459
Indigo	64,084	95,269	50,289
Copper	27,059	1,864	30,048
Sarsaparilla	49,569	95,870	55,609
Chickpeas	11,003	9,294	30,846
Manufactures	8,381	8,822	9,912
Merchandise returned	95,869	387,163	128,066
Equipages	12,984	15,664	18,835
Piloncello (brown sugar)	19,178	23,911	13,857
Machinery	3,478	.....	17,498
Horns	.....	.....	1,848
Corn	22,433	6,125	14,888
Pepper (chile)	4,588	8,032	7,642
Spices	6,377	2,452	2,340
Cocoa	3,993	1,738	340
Hats	.....	.....	3,822
Marble	6,933	6,559	12,252
Salt	2,074	.....	1,788
Bones	6,740	18,006	5,107
Figure of cloths, etc	.....	.....	2,966

E. — *Comparative exports from Mexico, by articles.* — Continued.

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Articles.	Annual average, five years ending June 30, 1886.	Year ending June 30, 1886.	Year ending June 30, 1887.
Merchandise — Continued.			
Jewelry and precious stones			$7,839
Books, printed			4,658
Plants, live	$4,490		8,188
Furniture			1,340
Feathers			2,368
Oil paintings			1,805
Chapopote			5,429
Barrels, empty			3,375
Provisions			1,578
Shrimp			1,032
Meat, salt and fresh	2,499	$8,111	14,535
Bark for tanning			31,746
Coal, stone	51,553	197,879	9,948
Lime, phosphate of	2,736	13,680	39,289
Dulces			2,097
Gums and resins			1,599
Leguminous plants	11,266	13,428	26,082
Wood			2,376
Lemons			6,646
Pottery			1,444
Samples			1,385
Cascarilla (bark)			1,264
Sacks, empty		2,240	1,984
Saddles			1,423
Bank stock	25,656		7,840
Aguardiente			1,606
Aloes, essence of	1,576		14,458
Foreign paper money			4,792
Plombagine			1,658
Photographs			1,294
Steel in bars			1,040
Miscellaneous	155,275	152,162	34,246
Total merchandise	10,254,206	10,993,053	12,505,142
Precious metals	23,015,385	23,925,121	26,848,403
Grand total exports	33,269,591	34,918,174	39,353,945

F. — *Comparative exports from Mexico by countries.*

[Values in United States gold — reduced from Mexican silver at 80 cents on the dollar.]

Countries.	Annual average for five years ending June 30, 1886.	Year ending — June 30, 1886.	Year ending — June 30, 1887.
Precious metals:			
Germany	$428,210	$666,103	$1,031,929
Colombia	197,270	37,887	41,992
Spain	554,872	523,430	83,475
United States	9,473,897	12,397,069	13,260,896
France	2,003,940	2,757,693	3,520,978
Guatemala	54,153		1,840
Great Britain	10,298,539	7,533,971	8,897,616
Other	4,505	8,968	9,677
Total	23,015,386	23,925,121	26,848,403

F.—*Comparative exports from Mexico by countries*—Continued.

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Countries.	Annual average for five years ending June 30, 1886.	Year ending— June 30, 1886.	Year ending— June 30, 1887.
Merchandise:			
Germany	$626,628	$591,016	$708,687
Belgium	32,628	58,551	53,861
Colombia	39,469	34,882	33,406
Spain	448,915	207,389	416,760
United States	7,103,226	7,946,607	8,922,076
France	467,310	391,328	569,038
Great Britain	1,515,880	1,746,083	1,792,134
Other	20,150	17,197	9,180
Total	10,254,206	10,993,053	12,505,142
TOTAL EXPORTS.			
Germany	1,054,838	1,257,119	1,740,616
Belgium	32,628	59,750	53,861
Colombia	236,739	72,770	75,398
Spain	1,003,787	730,819	500,235
United States	16,577,123	20,343,676	22,182,972
France	2,471,250	3,149,021	4,090,016
Guatemala	54,153	.....	1,840
Great Britain	11,814,419	9,280,054	10,689,750
Other	24,655	24,965	*18,857
Total	33,269,592	34,918,174	39,353,545

*Includes $2,214 other products to Guatemala.

G.—*Comparative exports from Mexico by custom-houses.*

[Values in United States gold—reduced from Mexican silver at 80 cents on the dollar.]

Custom-houses.	Annual average for five years ending June 30, 1886.	Year ending— June 30, 1886.	Year ending— June 30, 1887.
Precious metals:			
Acapulco	$84,806	$31,580	$38,310
Altata	28,210	27,335	3,941
Ascension	3,307	8,528	13,839
Bahia de la Magdalena	224	400	.....
Cabo de San Lucas	1,040	640	264
Camargo	16,337	9,168	9,552
Campeche	22,082	4,892	.....
Frontera	13,937	1,429	752
Guaymas	333,381	436,448	380,594
Guerrero	152	.....	.....
Isla del Carmen	5,971	.....	.....
La Paz	358,162	346,689	429,374
Laredo	517,520	306,685	557,985
Manzanillo	168,910	131,520	63,570
Matamoros	187,112	152,140	142,276
Mazatlan	3,314,790	2,827,331	3,597,406
Mier	36,991	40,094	72,146
Nogales	310,823	330,629	492,162
Palominas	7,680	12,460	11,112
Paso del Norte	3,701,042	8,134,715	8,227,798

G.— *Comparative exports from Mexico by custom-houses* — Continued.

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Custom-houses.	Annual average for five years ending June 30, 1886.	Year ending— June 30, 1886.	Year ending— June 30, 1887.
Precious metals—Continued.			
Piedras Negras	$31,681	$68,644	$101,792
Presidio del Norte	6,700	4,693	1,920
Progreso	129,143	118,972	4,125
Quitovaquita	139	.....	560
Salina Cruz	17,642	8,736	2,380
San Blas	200,703	108,245	223,244
Sasabe	16,222	2,141	12,239
Soconusco	.....	.....	800
Tampico	266,795	197,911	125,644
Todos Santos	240	.....	400
Tonalá	21,884	22,553	53,705
Túxpan	5,311	9,306	.....
Vera Cruz	13,152,147	10,581,237	12,280,513
Zapaluta	54,302	.....	.....
Total precious metals	23,015,386	23,925,121	26,848,403
Merchandise:			
Acapulco	89,375	72,598	95,072
Altata	39,916	12,770	13,065
Ascension	32,743	6,720	23,833
Bahia de la Magdalena	55,466	49,919	81,948
Cabo de San Lucas	4,182	5,437	5,269
Camargo	38,076	30,040	58,368
Campeche	97,546	78,786	84,456
Coatzacoalcos	187,789	184,879	118,362
Frontera	344,583	243,893	276,124
Guaymas	32,946	26,627	94,913
Guerrero	30,175	25,524	28,077
Isla del Carmen	495,596	568,103	661,253
La Paz	95,797	46,132	49,514
Laredo	484,020	763,648	581,238
Manzanillo	34,726	31,921	26,768
Matamoros	254,917	259,585	201,314
Mazatlan	87,141	47,255	69,314
Mier	83,463	129,882	82,574
Nogales	55,210	42,029	42,618
Palominas	30,024	40,327	31,823
Paso del Norte	121,148	327,625	285,090
Piedras Negras	251,842	561,948	304,284
Presidio del Norte	1,273	3,620	11,349
Progreso	2,904,457	2,531,347	3,275,363
Puerto Angel	37,451	108,190	42,688
Quitovaquita	1,796	977	112
Reynosa	3,544	.....	.....
Salina Cruz	92,578	103,070	113,746
San Blas	34,690	24,576	27,858
Santa Rosalia	.....	.....	200
Sasabe	35,874	42,023	34,803
Soconusco	62,878	.....	373,249
Tampico	578,933	506,006	484,673
Tijuana	14,700	45,633	35,044
Todos Santos	9,023	88	888
Tonalá	62,099	115,427	75,738
Túxpan	440,855	596,987	960,206
Vera Cruz	3,027,374	3,359,425	3,854,008
Total merchandise	10,254,206	10,993,053	12,305,142

G.— *Comparative exports from Mexico by custom-houses*—Continued.

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Custom-houses.	Annual average for five years ending June 30, 1886.	Year ending— June 30, 1886.	Year ending— June 30, 1887.
Total exports of precious metals and merchandise:			
Acapulco	$174,187	$104,178	$133,382
Altata	68,126	40,105	17,006
Ascension	36,050	15,248	37,672
Bahia de la Magdalena	55,690	50,319	81,948
Cabo de San Lucas	5,222	6,077	5,533
Camargo	54,413	39,208	67,990
Campeche	119,628	83,678	84,456
Coatzacoalcos	187,789	184,879	118,362
Frontera	358,520	245,322	276,896
Guaymas	366,327	463,075	475,507
Guerrero	30,327	25,524	28,077
Isla del Carmen	501,567	568,103	661,253
La Paz	453,959	392,821	476,888
Laredo	1,001,540	1,070,333	1,139,223
Manzanillo	203,636	163,441	90,338
Matamoros	442,029	411,785	343,590
Mazatlan	3,401,931	2,874,586	3,666,720
Mier	120,454	169,976	154,720
Nogales	366,033	372,658	534,780
Palominas	37,704	52,787	42,935
Paso del Norte	3,822,190	8,462,340	8,512,828
Piedras Negras	283,523	630,628	406,076
Presidio del Norte	7,973	8,313	13,269
Progreso	3,033,600	2,650,319	3,279,488
Puerto Angel	37,451	108,190	42,688
Quitovaquita	1,935	977	672
Reynosa	3,544	.....	.....
Salina Cruz	110,220	111,806	116,126
San Blas	235,393	132,821	251,102
Santa Rosalia	.....	.....	200
Sasabe	52,096	44,164	47,042
Soconusco	62,878	.....	374,049
Tampico	845,728	703,917	610,317
Tijuana	14,700	45,633	35,044
Todos Santos	9,263	88	1,288
Tonalá	83,983	137,980	129,443
Túxpan	446,166	606,293	960,206
Vera Cruz	16,179,591	13,940,662	16,134,521
Zapaluta	54,302	.....	.....
Grand total of exports	33,269,592	34,918,174	39,353,545

NUEVO LAREDO CONSULAR DISTRICT.

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REPORT BY CONSUL CISCO.

PRODUCTS OF THE DISTRICT.

In this consular district, with the exception of the mountain region, the soil is rich, and, when sufficient rains fall, wonderfully productive. With irrigation, which could be accomplished with small labor and trifling cost compared to the benefits to be derived, two, and sometimes three, crops a year could be grown on the same land. But as rains seldom fall during the season when most needed, and irrigation, except on a small scale and in a primitive way, has not been attempted, the cultivation of the soil is neglected for the more profitable occupation of stock raising. The mesquite grass, numerous weeds, and shrubs supply a wholesome and nutritious food for the herds of cattle, sheep, goats, horses, and mules. Many horses and mules (costing on the ranches from $3 to $20 each), a few cattle, and sheep are exported to the United States. The wool is sent to the interior of Mexico, where it is made into blankets and cloth. But little, and that of an inferior grade, is exported. The Mexican goat is a strong and robust animal, and, like the cactus, seems to flourish best where the land is poorest. Its skin is one of the chief articles of export; the flesh is a part of the regular diet, while the milk is as necessary as sunshine.

COST OF LIVING.

The cost of living and the expense of stock raising are trifling. A brush arbor serves for a house, little clothing is required, food cheap and abundant, stock needs no feeding, summer or winter, the wants of the *rancheros* are few and easily satisfied. It is difficult to get at the exact cost of anything in Mexico, as the people resent any inquiry into what they regard their private business.

TIMBER.

Timber is scarce; in fact, but little worth the name exists. The mesquite, which seldom attains the proportions of our apple tree, is the chief source of supply. The wood is a rich reddish-brown, close-grained, hard, and durable, takes a fine polish, and will not shrink.

LABOR AND WAGES.

Labor is cheap; 25 to 75 cents, according to the kind of work, is the usual daily wages. Skilled labor is scarce. House servants are unreliable; they generally demand a part of their wages, and sometimes the whole, in advance but they do not often leave an employer, voluntarily, in his debt.

The poor people, as a rule, live in miserable huts and in abject poverty. These habitations are of adobe, or of wattled brush plastered with mud and covered with grass; one door, no windows, no fire-place, and the bare earth for a floor. A soap box is the principal piece of furniture, a few sheep-skins

supply the place of a bed; no need for chests or drawers. The cooking is done on a small fire in the *jacal*, or at the door, in earthen vessels, from which the food is eaten without the aid of knife, fork, or spoon, but it is liberally shared with guests. These people have few comforts and no luxuries, yet they are amazingly happy and contented.

RECENT PROGRESS IN MEXICO.

Nature has done much for Mexico. She has been prodigal in placing here everything that would make the country desirable as a habitation for man. But the rulers of this fair land have worked at cross-purposes with nature. In the last decade, however, Mexico has advanced in material prosperity more than in any century of its previous history. Common schools have been established, the laws are justly administered, criminals are punished, virtue rewarded, and the rights of the people respected. These have brought foreign capital, industry, and skilled labor, as well as labor-saving machinery, to assist in the development of the country. Railways are being built, mines opened, the quantity as well as the quality of the products of the soil is increasing, and evidences of prosperity are seen on every hand.

So far as I can learn no action has yet been taken by either state or national authorities tending to promote the development of agriculture. Manufactories are protected by high tariffs and special exemptions from taxation.

AMERICAN TRADE OPPORTUNITIES.

Mexico is a promising field for American enterprise. Our manufacturers would do well by sending intelligent representatives to learn the wants and study the needs of the people, being careful to fulfill all contracts and requirements. In the stores and warehouses of this town, on the border, with direct communication with the manufacturing and commercial centers of the United States, I find more goods of European than of American make; cotton goods, woolens, worsteds, blankets, silks, linens, carpets, ready-made shirts, hardware, queensware, wines, liquors, canned fruits and meats, shoes, and toilet articles, all bearing the brand of French, English, and German manufacturers. Business men complain that American manufacturers "do not make the grades of cotton and woolen goods their customers want; they are too wide, or too narrow; too many yards in the piece; the cottons are not soft and pliant; the colors are not permanent," etc. A Mexican will not be satisfied with a cheap or inferior article. This is especially true with cotton and woolen goods and provisions. I have known American manufacturers of flour and lard, after building up a good trade, to destroy it by putting in an inferior article branded as first-class, and to thus lose their own trade and injure the business of more honorable men.

THE FREE ZONE.

The Free Zone, extending all along the United States border, in Mexico, in which all articles intended for local consumption may be imported free of duty, has seriously retarded the growth of frontier towns on both sides

of the border, and it causes a great deal of smuggling into the States. The merchants along the Rio Grande in Texas are making vigorous protests against the continuance of this Free Zone.

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Statement showing the value of declared exports from the consular district of Nuevo Laredo, Mexico, to the United States during the quarter ending December 31, 1888.

Articles.	Value in United States gold.	Articles.	Value in United States gold.
Beans	$3,129.60	Ixtle	$8,958.30
Breeding animals	2,685.00	Lead	51,137.74
Cactus	500.00	Lime	581.83
Cattle	1,034.00	Miscellaneous merchandise	3,166.00
Chia	10.44	Mules	15,275.00
Cement	849.00	Oranges	107.00
Cigars	244.00	Pepper	9,967.45
Coffee	260.00	Piano	300.00
Corn	9,585.00	Railroad iron	6,581.50
Free ores	307,990.47	Sheep	1,786.00
Gambling device	50.00	Silver bullion	17,814.00
Hair	15,257.95	Sugar	12,935.30
Hats	180.00	Watches	243.00
Hides	318,062.43	Wool	6,393.50
Horses	31,638.00	Total	826,722.51

J. G. CISCO,
Consul.

UNITED STATES CONSULATE,
Nuevo Laredo, February 1, 1889.

TRADE AND COMMERCE OF PASO DEL NORTE.

REPORT BY CONSUL MACKEY.

Paso del Norte, or Ciudad Juarez, as the place is now called, is an ancient adobe town of about 9,000 inhabitants. It is situated on the banks of the Rio Grande, opposite El Paso, which is a prosperous and ambitious little city of 12,000 inhabitants.

The surrounding country is fertile and pleasing to the eye. The climate is mild, healthy, and invigorating, and is especially favorable to persons afflicted with throat or pulmonary diseases.

Five railways, which connect with the great centers of population and commerce of the United States, terminate at El Paso, Tex., and Paso del Norte is the gate-way through which this commerce passes to the interior of Mexico. As this is the principal town of the Free Zone, it is the chief depot of supplies and point of distribution for the cities of the interior.

RAILWAY COMMERCE.

The Mexican Central Railway, from Paso del Norte to the City of Mexico, was completed in 1884, and Paso del Norte, as its northern terminus, at once became the most important town of the frontier. The com-

merce of the place sprang almost immediately from insignificance to considerable proportions, and is now exceeded by but one city in the whole Republic. Not only did the through traffic swell beyond all comparison with its former condition, but the local trade was also augmented. The Mexican collector of customs informed me that in 1884 he forwarded to the ministerio de hacienda an estimate of the amount of merchandise on hand at Paso del Norte, in the stores of the place, which he then computed, approximately, as amounting to $50,000. Effects on hand in these establishments, which are principally retail, can not now be estimated at less than twelve times that value.

It was thought by many that the construction of the International Railway through Piedras Negras and of the Mexican National at Laredo would divert much of the traffic from the Mexican Central and consequently diminish the commercial importance of El Paso and Paso del Norte. Both of the first-named routes are much shorter than the Mexican Central line, as will be seen from the following table:

Distances to City of Mexico from—	Via El Paso.	Via Eagle Pass.	Via Laredo.	In favor of Laredo over El Paso.
	Miles.	*Miles.*	*Miles.*	*Miles.*
New Orleans	2,433	1,836	1,578	855
New York*	3,640	3,210	3,015	634
Chicago	2,866	2,471	2,236	630
Saint Louis	2,584	2,189	1,950	634
Kansas City	2,398	2,080	1,821	577

*Via Saint Louis.

This greater proximity to the centers of commerce above enumerated resulted during the first four months in the loss of considerable traffic to the El Paso route, but recently much of this business has returned to the Mexican Central, and but little apprehension is entertained of any permanent loss from the competition and advantages offered by the rival roads.

It is claimed that the Mexican Central places freight in the City of Mexico in less time than the Mexican National, notwithstanding the greater distance over which their merchandise is transported. This dispatch may be explained partly by the superior organization and partly by the superior road-bed and equipments of the first-named railway. The Mexican National labors under the disadvantages of a narrow gauge, and the International is obliged to pass their cars over the Central line from Laredo to the City of Mexico. In addition to this, the Mexican Central connects the important cities of Chihuahua, Laredo, Zacatecas, Queretaro, Aguas-Calientes, Guanajuato, Guadalajara and Leon, the commerce of which this road will always control.

MINING.

Paso del Norte is situated in one of the states of Mexico which are richest in mineral resources. Each succeeding year witnesses greater intelligence,

energy, and capital devoted to the development of these resources. The chief difficulty which now presents itself is the lack of means of transportation from the mines of the Sierra Madre and of other places removed from the few railway lines which traverse the country. When branch lines are constructed from the Mexican Central a new impetus will be given to mining in this state by affording an outlet for the ore produced by the rich veins in which the Sierra Madre abounds. During the last six months of the year just ended mining in the state of Chihuahua has been characterized by less activity than during the first half of the year. This is due to the apprehension of a prohibitory tariff on Mexican lead ores as proposed in the Senate tariff bill. The same cause has had the effect of diminishing the quantity of American mining machinery recently introduced into Mexico. The agitation of this duty on lead has also affected disastrously the mining interests of Arizona and New Mexico, for the dry ore produced by those territories requires admixture with the Mexican lead ores to convert them into bullion.

EXPORTS.

The following table contains a correct statement of the kind of commodities and their values exported from Paso del Norte during the calendar year 1888, value in American money:

Silver coin	$3,081,638.87
Silver ore	2,234,336.58
Silver bullion	1,707,514.75
Gold coin	99,544.08
Gold bullion	65,660.87
Hides	82,767.67
Live stock	26,519.73
Cigars and tobacco	15,332.38
Copper	44,340.12
Lead	4,138.79
Mexican hats	2,734.47
Beans	9,127.27
Sundries	96,036.82
Total	7,469,692.40

Silver coin. — The silver coin mentioned in the above table, and which was greater in value than any other article of export during the same year, was principally used in the China trade.

Gold coin and bullion. — The gold coin which is exported at this port is shipped at the City of Mexico. It is much esteemed by jewelers of the United States for its weight and purity. Recently much gold coin has been shipped to South America, where the gold bullion mentioned is also almost entirely consumed.

Silver bullion. — The silver bullion exported is sent from the City of Mexico, Guanajuato, Zacatecas, Durango, Chihuahua, and a few other cities of the interior. During the past year 80 per cent. of this bullion went to New York, 9 per cent. to San Francisco, and 11 per cent. to London.

Silver ore.—The great bulk of silver ore exported from here is produced by the mines of Sierra Majoda, Zacatecas, Jimenez, and Chihuahua, although ore is also shipped in smaller quantities at several other places near the line of the Mexican Central Railway. The lead which these ores contain assays, on an average, 15 per cent. of the value of the whole. This ore goes to El Paso, Socorro, N. Mex., Pueblo, Colo., and Denver, where it is smelted. Most of it is then refined in Denver, Kansas City, and Saint Louis.

IMPORTS.

It is practically impossible to obtain an accurate statement, or, indeed, any statement, of imports through this place during the year just ended.

Silks, fancy and woolen goods are imported from Europe, and the stores of the Free Zone display flaming and alluring advertisements, in which they endeavor to persuade the public that merchandise of this class can be purchased in the Zona Libre at prices far below their value in the United States or the interior towns of Mexico. The fact is that the local dealers in the frontier towns allow the public none of the advantages naturally to be expected, but sell their wares, which have been imported free of duties, for as much as the same articles are offered at in the United States after the tariff has been paid.

Conserves of various kinds, wines, brandies, and other liquors are imported from France and Germany. Most of the bar iron and steel in use is brought from England.

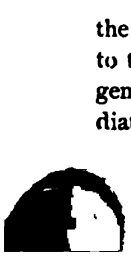
While the value of European merchandise imported at Paso del Norte will much exceed that of American origin, the merchandise imported from the United States greatly exceeds in bulk that from Europe.

Mexico imports almost all machinery for mining, agricultural, and other purposes from the United States; canned goods in great quantities, all kinds of tools, groceries, beer, candles, ammunition, arms, lard, lumber, doors, sashes, blinds, wagons, carriages, and a considerable quantity of cotton and cotton goods. Importation of California wines has increased and has a growing future

AGRICULTURE.

The frontier states of Mexico can never become agricultural, on account of the great scarcity of water, yet the valley of the Rio Grande, in the choicest portion of which Paso del Norte is situated, is the best irrigated, the most fertile, and the most generally under cultivation of any part of northern Mexico.

The native population hereabout is almost without exception devoted to the cultivation of the soil, and, like all communities whose lives are dedicated to this peaceful and primitive pursuit, they are as a class honest, amiable, gentle, and law-abiding. Almost all the inhabitants of the country immediately adjacent to the town possess their little plats of ground, which each



industriously cultivates, and whose harvests of corn, wheat, alfalfa, vegetables, and fruits furnish sufficient for their simple needs.

These lands are irrigated by ditches from the Rio Grande and by methods which are simple yet effective, which the natives have used from time immemorial, and in which they are thoroughly skilled. The rude plow of their forefathers has been discarded, and has been replaced (not only on the frontier but throughout almost the entire extent of the Republic) by the modern American implement.

The more wealthy class of the rural population employ their lands in the culture of the vine, to which this soil and climate are peculiarly favorable. Much of the grapes are sold to the fruit dealers of the United States, but by far the greater portion is converted into wine and brandy. The native wine is pure and palatable, but is too sweet for table use. The brandy is pure but fiery. While but little of the wine and brandy is exported, both find a ready and profitable market within the country.

PUBLIC IMPROVEMENTS.

The year just ended has witnessed various important and beneficial changes in this little city. These may be in a great degree attributed to the wise, energetic, enlightened, and progressive policy of the present jufe politico of the district, Colonel Manso Candano, who has endeavored by untiring zeal and laborious application in the affairs of his district to retrieve the ground which the apathy of others had lost and keep step with the march of modern civilization.

New streets have been opened, the old ones broadened and paved, the public plaza improved and adorned, the city well lighted with gas, and the public schools encouraged and sustained. This district now contains twenty-nine public schools of primary instruction.

In addition to the above enterprises of public benefit which have already been accomplished others are projected and will, no doubt, be carried into effect.

Paso del Norte and El Paso claim to possess the only international street railway in the world. This line unites the two towns, and is well managed and prosperous.

Another street railway and bridge across the Rio Grande are now in process of construction and will be concluded within a few months.

The new custom-house of the Mexican Government is almost completed and promises to be a handsome and spacious edifice. A large hotel is being constructed and has long been needed.

BECKFORD MACKEY,
Consul.

UNITED STATES CONSULATE,
Paso del Norte, March 22, 1889.

MARACAIBO, AND AGENCIES THEREUNDER.

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[Agencies: 1, Corro; 2, Valera; 3, Irvar; 4, San Cristobal.]

REPORT BY CONSUL PLUMACHER.

MARACAIBO CONSULATE.

Coffee exports.—Of this most important Venezuelan staple there were exported from Maracaibo to the United States 37,389,701 pounds, but a trifle less than the quantity noted in the year 1887, but with a marked diminution in value, as the figures for 1888 show a declared invoice price of $5,377,897.68, as against $6,554,255.43 for the previous year.

This industry, however, has been fairly satisfactory, and if the excessive profits of former years have not been repeated, there has at least been no serious loss as has at times unfortunately occurred.

Cacao.—A large increase in the exports of cacao took place. I have frequently pointed out the desirability of greatly extending this industry, not only on account of the exceptional advantages of soil and climate offered by this section, and especially the Perijà district, but also, in order to liberate the country, as far as possible, from its absolute dependence upon its one great staple, coffee.

The exports of cacao in 1888 were 144,390 pounds compared with 62,770 pounds in 1887, and were of a declared value of $34,607.59.

Copaiba.—There has been quite a falling off in the exports of this valuable balsam, which is much to be regretted, as the forests are abundantly supplied with this and other gums, and their extraction should be one of the most important sectional industries. During the past year only 19,583 pounds of copaiba were exported, of a value of $8,120.59.

Fish sounds.—The business of extracting and exporting the sounds of the fish called the *curbina*, so plentiful in these waters, is as yet upon a lamentably small scale considering the facility of the industry and the excellent prices paid abroad for its products. There has been during the past year but little change in quantity exported or value, the former reaching the limit of 56,408 pounds and the latter of $28,803.48.

Hides and skins.—These articles have held their own, with a slight increase, there having been exported 670,146 pounds of hides and 167,470 pounds of skins, of the respective declared values of $75,172.67 and $45,009.98.

Woods.—The exports of fustic during 1888 have increased four-fold over 1887, amounting to 6,475,992 pounds, valued at $33,977.10. Boxwood more than held its own with 1,832,727 pounds, of a value of $8,908.52, but of cedar there were exported only 635 logs, valued at $6,429.19.

Exports to the United States.—The total value of all exports from Maracaibo to the United States during the year was $5,621,513.76, which, although not equal to that of the very exceptional year 1887, is a most excellent showing, and had the prices of coffee in foreign markets continued at their previously high figures, it is possible that this district would have made a better

showing during 1888 than at any period in her former commercial history. Maracaibo itself is progressing with a rapidity rarely found, if ever, in a South American city, and I am pleased to learn from my very extensive official correspondence, and from journalistic articles, that our countrymen are taking a constantly increasing interest in this section, so exceptionally favored by nature as regards position, productions, and the manifold sources of natural wealth awaiting easy development. For this reason I beg to offer a few remarks respecting Maracaibo, which I hope may prove of interest.

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EARLY HISTORY OF MARACAIBO.

It is difficult to obtain entirely reliable data, as but few ancient documents bearing upon the subject are in existence, but it is known that in the year 1527 the Emperor, Charles V., granted the whole territory now known as Venezuela to a family of Augsburg named Welser. The entire country was then virtually in the hands of the aborigines, who were in no way disposed to accept their new masters without a struggle.

In 1529 a German named Alfinger, at the head of a motley expedition of German and Spanish adventurers, entered Lake Maracaibo (then called by the Indian name of Coquibacoa), and made a small settlement at or near the site of the present city. Much opposition was encountered by the invaders, the Indians being under the command of a chief named Mara, who exercised supreme control over all the lake tribes. Near the new settlement a fierce battle was fought in which Mara was wounded. Seeing him fall, a Spanish soldier exclaimed, "Mara cayó," (Mara has fallen). These Spanish words, by an easy transition of sound, became "Maracaibo," which name Alfinger gave to his little village.

The struggle of the Germans with the Indians continued with varying success until 1545, when Venezuela reverted to the Spanish Crown and the work of subjugation began in earnest. Alonzo Pacheco, one of the captains of His Catholic Majesty, took command of the operations against the Lake Indians in 1568, and after three years of continuous warfare compelled them to acknowledge the sovereignty of Spain.

Thus relieved of his more active military duties, Pacheco determined, in emulation of Pizarro, in Peru, to found a great city upon the borders of the beautiful lake which he had wrested from the savages. On the 20th of January, 1571, the new city was commenced on the site of Alfinger's old settlement, and was solemnly christened "Nueva Zamoro de San Sebastian," which designation, however, was never popularly adopted, the original name of Maracaibo, so curiously invented, having been retained to the present day. The new city rapidly grew in importance and wealth. With its magnificent lake, fed by innumerable rivers which stretch far into the interior of what was then an unknown region, the curiosity and cupidity of the Spaniards were aroused, and Maracaibo soon became a rallying point for a multitude of adventurers bent upon sudden fortune.

Notwithstanding its early prosperity it soon fell into decadence, and, until the independence of the Spanish colonies was an accomplished fact, remained

almost unknown to the outside world. Its progress, however, during the past few years is a notable event in South American history, and its natural advantages, good government, and the energetic and progressive character of its citizens have conduced to present prosperity and to bright hopes for the future.

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Maracaibo to-day is a busy, bustling city. Its geographical position for purposes of commerce is unequaled in South America, and when the tide of immigration is once turned to this section, so fertile for agricultural purposes, and abounding also in mineral wealth, the possibilities of its future will be beyond conjecture. The population of the city at present is about 40,000 souls. Lines of street-cars run from one extremity of the town to the other, and during the past year an excellent electric-light system has been introduced, which is meeting with great favor.

The American Telephone Company is in successful operation, and it may be said that both the municipal government and the community in general are inclined to give generous support to any enterprise which may be of public benefit.

A bank of issue and discount has been in operation for several years, and an additional one has just been organized with a large capital.

There exist both fire and marine insurance companies, organized and subscribed to in the city, and schemes are constantly being considered for the commercial and industrial progress of the district.

There are two free hospitals, both of which are well managed, and annexed to one of these is an asylum for the permanent care of the disabled poor.

An orphan asylum was established a few years ago, and a wise system was introduced of teaching its inmates various handicrafts. It has already turned out some skillful workmen, who, under less favorable circumstances, might have been constant burdens upon the community or inmates of the jails.

The necessity of popular instruction for the masses is probably more seriously appreciated at Maracaibo than in any other section of the Republic. The Federal Government has established a college and various primary schools, but its efforts in this respect have been far surpassed by those of the state and city authorities, who have left nothing undone to secure universal primary education.

The section Zulia, one of the political entities of the Venezuelan federation, of which Maracaibo is the capital, is divided into various districts, each being independent as regards local government, as follows:*

I — CORO AGENCY.

The city of Coro. — The city of Coro, where the agency of the same name is situated, is the chief town of the state of Falcon, and is also the outlet for the greater part of the state of Barquisimeto.

*A report on "Section Zulia," by Consul Plumacher, will appear in the May number, Consular Reports.

The province of Coro. — The province of Coro is one of the most important sections of Venezuela, and the city is politically and commercially a prominent center.

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Exports to the United States. — There are annually exported directly to the United States nearly $800,000 worth of native products, of which goatskins are the chief.

Products of the province. — The greater part of the district is sterile and arid, producing all varieties of cactus and maguey, but is not adapted to agriculture. Goats are the chief animals, and the skins exported from Coro are considered the finest in the world, and are eagerly sought for in New York, where they command a much higher price than those from any other locality. The climate is not unhealthy, but excessively hot.

A part of the state of Barquisimeto is included within the limits of this agency, and much coffee from the uplands is sent to Coro for export.

2 — VALERA AGENCY.

The agency at Valera comprises the section Trujillo, and is the center of a thriving commercial and agricultural district.

Valera is a comparatively new city, and is yearly increasing in importance and population. A railway is in operation for part of the distance from it to the lake, and it is expected that within the year it will reach the town. In that case, Valera will soon become a very important center, and the field of usefulness of our agent will be correspondingly extended.

3 — TOVAR AGENCY.

City of Tovar. — The city of Tovar is the seat of the agency of the same name, and is the center of a fertile district, coffee being the principal staple. Its great altitude, however, permits the raising of wheat and many fruits peculiar to the temperate zone. Several flour-mills are in operation, the most important being of American manufacture. Good results have already flowed from the establishment of this agency, and American goods are becoming better known.

A railway has been projected from the lake to the city of Merida, near Tovar, and it is expected that operations will begin within a few months.

4 — SAN CRISTOBAL AGENCY.

The city of San Cristobal. — The agency at San Cristobal is situated on a high plateau in the Cordillera, near the frontier of Colombia. This is a very important city, being the capital of the section Tachira, and the very center of the great coffee district. It has great political as well as commercial importance, as the people of Tachira are of a turbulent disposition, and although loyal to the National Government are seldom free from local dissensions.

Railways. — A railway from Santa Barbara, at the southern extremity of the lake to San Cristobal will be commenced within a month, the contractors being a French company. No railroad in Venezuela will excel this in impor-

tance, and it has been talked about for many years, but there is every reason to believe that it will now be vigorously pushed through to completion.

The Cordilleras.—In the Cordillera, including Tovar, Merida, and San Cristobal, is found the point of greatest altitude above sea-level in the Republic of Venezuela. In the Sierra Nevada of Merida there are peaks of nearly 1,800 feet of elevation covered with perpetual snow.

The highest town in Venezuela.—The town of Muchuquies, between Merida and Tovar, is the highest inhabited point in the country, and travelers from the coast, accustomed to excessive heat, suffer severely when passing this plateau.

City of Merida.—Merida is a city of much interest, with a most delightful climate. All of the productions of the temperate zone yield excellent harvests, and the position of the city is picturesque in the extreme. It is situated on a plateau of about 8 miles in length and 2 in breadth. Above it tower the most lofty mountains of the Cordillera, and in all directions there is a beautiful view of fertile valleys watered by three rivers.

Railways.—The completion of the railway from the lake will be of immense benefit to this city, which will no doubt become a place of resort for hundreds who are now deterred by the inconvenience of the journey.

E. H. PLUMACHER,

UNITED STATES CONSULATE, *Consul.*

Maracaibo, February 20, 1889.

ALGERIAN RAILWAYS.

REPORT BY CONSUL GRELLET, OF ALGIERS.

The Algerian railroads are, as a rule, established upon the same financial basis as those of the metropolis, *i. e.*, the interest on the capital invested is guarantied by the Government, as well as the amount necessary for the working expenses of the respective lines. All advances made by the Government bear interest at the rate of 4½ per cent., to be accounted for by the companies at the date of refunding. There is but one exception to this arrangement, viz., the line from Arzew to Kralfalap, controlled by the Franco-Algerienne Company. No guaranty has been given by the Government, but in lieu thereof a concession of 100,000 hectares of alfa lands have been granted to the company for a period of ninety-nine years.

In the year 1879 the general plans for the construction of the railroads of Algeria were drawn up, and these plans having been rigidly adhered to, the various lines are rapidly approaching completion. The plans referred to are based upon a double consideration: First, the commercial interests of the country; and second, the defense of the territory against enemies, either foreign or domestic.

On the 31st of December, 1888, the total length of completed railroads in Algeria had attained to 2,709 kilometers,* and which can be divided into two great sections:

* 1 kilometer = .621376 of a mile.

(1) That section which includes the lines running parallel to the sea-shore, and, extending from the frontier of Morocco to the boundary of Tunis, connect, by the aid of the various lines of the second section, all the sea-ports of Algeria. In the event of any attempt at invasion the system in which the country is intersected and connected by these lines, would do much to facilitate the rapid transportation of the Algerian forces from any point of the interior to the coast.

(2) This section includes all the lines running from the sea-coast to the interior, and may be more properly termed "lines of penetration." In the case of insurrection these lines would be of very great importance and utility in moving troops with dispatch. From a commercial point of view, the whole of these lines are of vital importance, and will assuredly contribute much to the rapid development of the colony. Prior to the building of these lines the means of transportation were of the most primitive description, whereas now the facilities afforded and low rates granted permit of the products of the interior being carried to the sea-board, where ready markets are always to be found.

The following data will furnish some idea as to the position of the Algerian railroads at the end of the year 1888. The first section includes the following lines:

	Kilometers.
(1) La Senia to Ain Temouchent	80
(2) Oran to Algiers	426
(3) Maison Carree to Constantine	452
(4) Kroubs to Duvivier	148
(5) Duvivier to Sidi-el-Henessi	105

The second section includes the following lines:

(1) St. Barbe du Kelat to Ras el Ma	151
(2) Tabia to La Moriciere	34
(3) Arzew to Ain Sefra	454
(4) Thizi to Mascara	12
(5) Mostaganem to Thiaret	202
(6) Bougie to Beni Mansour	88
(7) Menerville to Tizi-Ouzou	53
(8) Phillippeville to Constantine	87
(9) El Gucera to Biskra	201
(10) Bone to Duvivier	55
(11) Soukaras to Tebessa	128
(12) Bone to Am Mokra	33
Total	*2,709

All these lines are under the control of six companies, viz: The Paris-Lyon-Mediterranee Company, the East Algerian Company, the Bone-Guelma Company, the Ouest Algerian Company, the Franco-Algerian Company, and the Moktabel Hadid Company.

(1) The Paris-Lyon-Mediterranee Company (gauge 1.44 meters) runs the line from Oran to Algiers (426 kilometers), and from Phillippeville to

*1,683 miles.

Constantine (87 kilometers); total 513 kilometers. This line was conceded in the year 1863, and interest at the rate of 5 per cent. was guarantied by the Government on a total capital of $15,440,000, which amounts to $772,000. The working expenses, also annually guarantied, amount to $974,650. These lines are now self-supporting, and are re-imbursing the advances made by the Government.

The line from Algiers to Oran crosses a generally flat country, hilly only between Bon-Medfa and Affreville. It intersects the plains of Metidja and Chetiff. The first-named plain is one of the richest tracts of land in Algeria, producing crops of all kinds, including cereals, oranges, grapes, wines, etc. The Plain of Chetiff is also fertile, the principal production being cereals.

The Philippeville to Constantine line intersects a very uneven and undulating section of country, and has for a considerable length of time been the only available outlet from the interior for merchandise going seaward from the department of Constantine.

(2) The East Algerian Company controls the lines from Maison Carree to Constantine, 452 kilometers; El Guerra to Biskra, 201 kilometers; Menorville to Tizi-Ouzou, 51 kilometers; Bougie to Beni Mansour, 88 kilometers; total, 792 kilometers.

These four lines were conceded at different dates between the years 1880 and 1884, while those to Biskra, Tizi-Ouzou, and Beni Mansour were only completed during the year 1888. The guarantied rate of interest is 5 per cent. on a capital of $36,028,906, and amounts to $1,801,445.30. The amount incurred by working expenses is $1,093,336.

Algiers to Constantine, Menorville to Tizi-Ouzou, and Bougie to Beni Mansour. The country traversed by these lines is very mountainous, but nevertheless very fertile, the principal productions being cereals, olives, olive-oil, cork, and figs. Vine culture is also rapidly increasing.

El Guerra to Batna: The natural formation of the country through which this line passes is hilly, and the railway has been specially constructed to meet military requirements, and also with the view of connecting the splendid oasis of Biskra with the sea-shore. This oasis is very suitably situated for cultivating dates, and the area of land fitted for this purpose is being constantly augmented, principally through the beneficial effects of boring wells on the artesian system. Even now an extensive and lucrative commerce in dates is carried on.

(3) The Bone-Guelma Company control the undernoted lines: Bone to Kroubs (gauge, 1.44 meters), 203 kilometers; Duvivier to Sidi-el-Henessi (gauge, 1.44 meters), 105 kilometers; Soukaras to Tebessa (gauge, 1 meter), 129 kilometers; total, 437 kilometers. These lines were conceded between the years 1876 and 1885. The branch line from Soukaras to Tebessa was only recently completed — in 1888.

The rate of interest for the lines is as follows: Bone to Kroubs and Duvivier to Soukaras, 6 per cent.; capital, $10,865,150; interest accruing, $651,909. Soukaras to Sidi-el-Henessi and Soukaras to Tebessa, 5 per

cent.; capital, $8,192,850; interest accruing, $409,642.50. The amount of working expenses, $614,022.75, and which are guarantied.

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All the lines controlled by this company run through a rich but very uneven country, the productions of which comprise cereals, cork, wine, and alfa, etc. Its junction with the Tunisian Railway system is situated at El Henessi.

(4) The Ouest Algerian Company controls the undernoted lines:

Helat to Ras-el-ma, 151 kilometers; La Senia to Ain Temouchent, 80 kilometers; Talia to La Moriciere, 34 kilometers; total, 265 kilometers.

These lines were conceded between the years 1874 and 1885.

The rate of interest for these lines: Kelat to Sidi-bel-Abbes, and Tabia to Tlemcen, 5 per cent.; capital, $5,131,190; interest accruing, $160,716; Sidi-bel-Abbes to Ras-el-Ma, and La Senia to Ain Temouchent, 4.85 per cent.; capital, $5,268,900; interest accruing, $255,541.65. The working expenses amount to $413,611.85.

These lines run, in some parts, through an exceptionally fertile country, producing specially cereals and wine, whilst in other parts it crosses very extensive alfa lands. For the year 1887 the amount of alfa produced in this region alone, was 60,882 tons.

(5) The Franco-Algerian Company (gauge 1.055 meters) controls the under-noted lines: Arzew to Kralfalah, 214 kilometers; Kralfalah to Ain Sefra, 240 kilometers; Ain Thizy to Mascara, 12 kilometers; Mostaganem to Thiaret, 202 kilometers; total, 668 kilometers.

In the case of the line from Arzew to Kralfalah, no Government guaranty has been given, but in lieu thereof a land-grant has been ceded amounting to 100,000 hectares for a period of ninety-nine years. This land should provide very favorable returns to the company, in the shape of alfa, which grows abundantly in this part of the country, including Mecheria, Saida, Mar, and El Aricha. The production of alfa from these districts for the year 1887 was 108,500 tons. That portion of the railway north of Perregaux runs through a tract of country producing, for the greater part, cereals.

(6) The Mokta to El Hadid line is 33 kilometers in length, and is the private property of the mining company of the same name. No guaranty of any kind given by the Government, the line having been specially constructed for the transportation of the iron ore from the mines to Bone. This line was only opened for passenger traffic on January 1, 1885. The Paris-Lyon-Mediterranee line is, up to the present, the only self-supporting system, and has commenced refunding the Government advances.

It is estimated that the other lines are not likely to be fully developed, from a commercial point of view, for at least ten years. During that period the different companies will be under the necessity of applying to the Government to make good the differences which may exist between the amount of their earnings and the amount required to meet working expenses, and payment of interest on invested capital. After that lapse of time, and judging from the rapid increase of traffic, the probabilities are that the earnings

will enable the companies not only to cover their working expenses but also begin the redemption of their debt to the Government.

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To complete the Algerian railroad system the lines, Oued Rhamour to Ain Beida and Blidah to Berroughia (gauge 1 meter and 1.055 meters, respectively), are now under construction, and the following lines included in the general plan are being surveyed: 1, From Tlemcen to the boundary of Morocco; 2, from a point to be determined between Tlemcen and Senia to the mining region of Rio Salado; 3, from Teney to Orleansville; 4, Affreville to Berroughia-Tremble, and Bosdj Bouira.

Table A shows the exact terms of the Government. Table B shows the earnings for the years 1886 and 1887. It is to be particularly noted that the fall in the earnings for 1886 and 1887 was entirely due to the locust plague, which occurred in 1887, and when the statistics of 1888 are published the same fact will in all likelihood be repeated, cause and effect being due to said plague.

CHAS. E. GRELLET,

UNITED STATES CONSULATE, *Consul.*

Algiers, March 21, 1889.

A.— *Algerian railroads.*

Lines and names of companies.	Lengths of lines.	Date of concession.	Maximum capital guarantied.	Rate of guaranty.	Minimum working expenses guarantied per kilometer.	Amount of working expenses guarantied yearly.	Amount of interests yearly guarantied.	Total.
Paris-Lyon-Mediterranee:	*Kilometers.*			*Per ct.*				
Algiers to Oran	424.850	June 11, 1863	$15,440,000	5		*a* $974,650.00	$772,000.00	$1,746,650.00
Philippeville to Constantine	87.850	June 11, 1863						
Est Algerien:								
Algiers to Constantine	463.250	Aug. 2, 1880	20,267,123	5	$1,440.00	666,978.10	1,013,356.15	1,680,334.25
El Guerra to Batna	80.250	Aug. 2, 1880	2,269,680	5	1,351.00	108,080.00	113,484.00	221,564.00
Batna to Biskra	121.250	July 21, 1884	5,595,056	5	965.00	116,765.00	279,752.80	396,517.80
Menerville to Tizi-Ouzou	51.352	Aug. 23, 1883	3,265,047	5	1,440.00	73,935.20	163,252.35	237,187.55
Bougie to Beni Mansour	88.610	May 21, 1884	*b* 4,632,000	5	1,440.00	127,578.80	231,600.00	359,178.80
Oulad Ramoun to Ain-Beida *c*	91.610	Aug. 7, 1885	1,975,355	5	965.00	87,815.00	98,767.75	186,582.75
Bone to Guelma:								
Bone to Guelma	88.042	Mar. 8, 1876 Mar. 26, 1877	2,316,000	6	1,351.00	118,944.75	138,960.00	257,904.75
Guelma to Kroubs	114.712	Mar. 8, 1876 Mar. 26, 1877	4,466,130	6	1,486.00	185,133.70	*d* 267,967.80	453,101.50
Duvivier to Soukahras	51.911	Mar. 8, 1876 Mar. 26, 1877	4,083,020	6	1,486.00	90,547.55	*e* 244,981.20	335,528.75
Soukahras to Sidi-el-Henessi	52.773	Apr. 20, 1882	4,825,000	5	1,486.00	94,911.75	*f* 241,250.00	336,161.75
Soukahras to Tebessa	129.773	July 28, 1885	*g* 3,367,850	5	965.00	124,485.00	168,392.50	292,877.50
Ouest Algerien:								
Kelat to Sidi-bel-Abbes	51.572	Nov. 30, 1874 Aug. 22, 1881	*h* 2,090,190	5	1,440.00	74,252.35	104,509.50	178,761.85
Sidi-bel-Abbes to Ras-el-Ma	100.012	Aug. 22, 1881	*i* 3,281,000	4.85	1,440.00	144,150.80	159,128.50	303,279.30
Oran (La-Senia) to Ain-Temouchent	80.492	Aug. 5, 1882	*j* 1,987,900	4.85	1,351.00	108,744.70	96,413.15	205,157.85
Tabia to Tlemcen *k*	64.492	July 16, 1885	*l* 3,281,000	5	1,351.00	86,464.00	164,050.00	250,514.00
Blida to Berroughia *c*	84.492	July 31, 1886	*m* 5,211,000	4.85	1,254.00	105,378.00	252,733.50	358,111.50
Franco-Algerienne Company:								
Kralfalah to Mecheria	137.603	July 28, 1885	*n* 521,100	5	1,254.00	172,623.00	26,055.00	198,678.00
Mecheria to Ain-Sefra	102.193	July 31, 1886	*o* 1,568,125	4.85	965.00	98,616.25	16,054.06	174,670.31
Thizi to Mascara	12.193	July 3, 1884	*p* 308,800	5	1,254.00	15,054.00	15,440.00	30,494.00
Mostaganem to Tiaret	202.193	Apr. 15, 1885	*q* 4,149,500	5	1,254.00	253,409.00	207,475.00	460,884.00
Total			94,900,876			3,828,517.70	4,835,622.51	8,664,140.21

a Annual average for fifteen years, 1872 to 1886, inclusive. *b* Including $150,455 for complementary accommodations. *c* Lines in course of construction. *d*, *e*, *f* Including $14,660, $13,402.58, and $16,485.94, respectively, for redemption of bonds. *g* Including $386,000 for complementary accommodations. *h*, *i*, *j*, *l* Including, respectively, $289,500, $289,500, $289,500, and $115,800, for complementary accommodations; according to the terms of the contracts the $984,300 thus obtained can be spent on the whole without limitation for any special line. *k* In course of construction; open to La Moriciere, distance 34 kilometers. *m* Including $386,000 for complementary accommodations. *n* Sum necessary to put the line in working order, building expenses between Modjbals and Mecheria having been paid by the Government. *o*, *p*, *q* Including, respectively, $52,900, $19,300, and $193,000, for complementary accommodations.

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B.—*Algerian railroads—receipts, 1886-'87.*

Lines and names of companies.	Total lengths of the lines working December 31, 1887.	Average lengths of the lines working during whole year.	Receipts, 1887.	Total lengths of the lines working December 31, 1886.	Average lengths of the lines working during whole year.	Receipts, 1886.	Difference between 1887 and 1886.		Per kilometer.					
									Total.		Difference between 1887 and 1886.			
											Total.		Per hundred.	
							Increase.	Decrease.	1887.	1886.	Increase.	Decrease.	Increase.	Decrease.
Paris-Lyon-Mediterranee Company:	*Kil.*	*Kil.*		*Kil.*	*Kil.*									
Algiers to Oran	426	426	$1,315,045	426	426	$1,268,587	$46,458	.....	$3,087	$2,980	$109	.....	$0.71	.....
Philippeville to Constantine	87	87	433,681	87	87	675,621	.....	$241,940	4,985	7,766	.....	$2,781	.....	$6.91
Total	513	513	1,748,726	513	513	1,944,208	.....	195,482	3,409	3,790	.....	381	.....	1.94
Est Algerien Company:														
Algiers to Maison Carree	11	11	32,267	11	11	26,525	5,742	.....	2,933	2,411	522	.....	4.18	.....
Maison Carree to Constantine	452	452	589,337	452	382	598,745	.....	9,408	1,304	1,567	.....	263	.....	3.23
Minerville to Haussonvillers	27	26	27,366	15	6	7,830	19,536	.....	1,052	1,305	.....	253	.....	3.74
El-Guerra to Batna	80	80	87,842	80	80	116,919	.....	29,077	1,098	1,461	.....	363	.....	4.80
Batna to El-Kantara	65	60	40,866	33	14	8,723	32,143	.....	681	623	58	.....	1.80	.....
Total	635	629	777,678	591	493	758,742	18,936	.....	1,236	1,539	.....	299	.....	3.80
Bone-Guelma Company:														
Bone to Guelma	88	88	187,314	88	88	196,191	.....	8,877	2,129	2,230	.....	101	.....	.88
Guelma to Kroubs	115	115	94,437	115	115	102,424	.....	7,987	815	880	.....	65	.....	1.51
Duvivier to Sidi-el-Henessi	105	105	145,405	105	105	112,006	33,399	.....	1,385	1,066	319	.....	5.75	.....
Total	308	308	427,156	308	308	410,621	16,535	.....	1,386	1,333	53	.....	.74	.....
Ouest-Algerien:														
St. Barbe du Kelat to Sidi-bel-Abbes	51	51	202,188	51	51	191,485	10,703	.....	3,964	3,755	209	.....	1.08	.....
Sidi-bel-Abbes to Ras-el-Ma	100	100	131,392	100	100	130,696	696	.....	1,318	1,307	11	.....	.11	.....
Oran to Ain-Temouchent	75	75	91,165	75	75	84,482	6,683	.....	1,216	1,126	90	.....	1.52	.....
Tabia to Ain-Tellout	23	9	3,122	.....	.....	.....	3,122	.....	347	.....	347	.....	.....	.....
Total	249	235	427,867	226	226	406,663	21,204	.....	1,821	1,799	22	.....	.20	.....
Franco Algerienne Company:														
Arzew to Kralfalah	214	214	364,522	214	214	290,373	74,149	.....	1,703	1,357	346	.....	4.93	.....
Kralfalah to Mecheria	138	138	83,393	138	138	52,216	31,177	.....	604	378	226	.....	7.65	.....
Mecheria to Ain-Sefra	102	34	8,487	.....	.....	.....	8,487	.....	250	.....	250	.....	.....	.....
Ain Thizy to Mascara	12	12	10,693	12	1	1,258	9,435	.....	891	1,258	.....	367	.....	5.62
Total	466	398	467,095	364	353	343,847	123,248	.....	1,174	974	200	.....	3.96	.....
Mokta-el-Hadid Co., Bone to Ain Mokra	33	33	12,717	33	33	12,016	701	.....	385	364	21	.....	1.13	.....
Total	2,188	2,100	3,861,239	2,019	1,910	3,876,097	282,431	297,289	1,839	2,029	.....	190	.....	1.80
Decrease	.....	.....	.....	.....	.....	.....	.....	14,858	.....	.....	.....	.....	.....	.....

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NOTES.

QUALIFICATIONS OF A VOTER IN JAPAN. — Consul-General Greathouse says, under date of January 16, 1889, that every male person possessing the requisite qualifications of age and residence who has paid land or direct taxes to the amount of 2 or more yen (99.07 cents) and not received alms within two years from public sources is entitled to vote and eligible to office in the city assembly or administration, if the citizenship has not been suspended.

RAILROADS IN VENEZUELA. — Consul Plumacher, under date of February 5, 1889, reports that the Credit Mobilier, of Paris, has commenced preliminary work upon a road from La Fria to San Cristobal. The chief engineer, M. Dubosques, died from yellow fever almost upon arrival at La Fria, which will probably delay operations. Another road from the city of Merida to the lake coast is about to be begun.

TARIFF CHANGES IN PORTUGAL. — Consul-General Lewis, of Lisbon, under date of March 27, 1889, reports that a decree was printed in the official journal of the 26th instant, which advances, from that date, the duty on wheat and wheat flour imported into that kingdom to 19 and 27 reis a kilogram, respectively; exempting therefrom such of these commodities as were warehoused on that date or actually loaded for Portugal. These will only pay the duties fixed by decree of December 15, 1888.

IRISH EMIGRATION. — Under date of May 19, 1889, Consul Savage, of Belfast, reports that the total number of emigrants embarked at Irish ports during the year 1888 was 79,211, of whom 41,697 were males, and 37,514 females. This is a decrease of 3,991 emigrants as compared with the year 1887. Of the total number of emigrants, 66,906, or 85 per cent., came to the United States. Eighty per cent. of the emigrants were between the ages of fifteen and thirty-five years, the percentage over that age being 9.1, and of children over fifteen years 10.5.

VITAL STATISTICS OF HOLLAND. — Consul Eckstein, of Amsterdam, says that according to statistics recently published by the department of the interior at The Hague, the population of Holland on January 1, 1888, was 4,450,870. The number of births during the year (1887), exclusive of 7,771 still-born, was 151,096; deaths, including the still-born, 99,012, making the death-rate 22.25 per 1,000. The death ages were as follows: Under 1 year, 26,176; between 1 and 5 years, 12,313; 5 to 14 years, 4,158; 14 to 20 years, 2,192; 20 to 50 years, 13,703; 50 to 65 years, 10,975; 65 to 80 years, 15,944; above 80 years, 5,746; not designated, 34.

RATES AT WHICH THE PACIFIC MAIL STEAM-SHIP COMPANY RECEIVES FOREIGN COIN. — Consul Loughery, of Acapulco, writes, under date of February 27, 1889, in regard to this subject:

I inclose the rates at which foreign coins are received by the Pacific Mail Steam-ship Company. In this connection it is proper to state that, practically, this ruling of the Pacific Mail has little or no effect in business relations. There is no bank or house of exchange or express office in Acapulco, hence the value of Mexican and other coin, as compared with that of the

United States, has no fixed standard. Mexican dollars have one rate to-day and perhaps another to-morrow. If American money becomes abundant and there is no demand for it, the discount of Mexican dollars will descend to 15 or 18 per cent. At other times gold and drafts command a premium of 32 per cent. Until recently all I could get for a Government draft was 20 per cent.

One thing is evident, the deterioration of the Mexican dollar has a most injurious effect upon the trade and commerce with the United States.

The following are the rates at which foreign coins will be received by pursers of the Pacific Mail Steam-ship Company, Panama and San Francisco, Central American and Mexican lines, until further notice, for passages and freight as equivalent to American gold, to go into effect January 20, 1889:

Gold.		*Silver.*	Per cent.
Pound sterling	$4.80	Colombian dollars	45
French 20 francs	3.80	Ecuadorian sucres	45
French 10 francs	1.90	Peruvian dollars	35
French 5 francs	.95	Chilian dollars	35
Spanish sovereigns	4.80	Guatemala dollars	35
Spanish and all other ounces	15.00	French 5-franc pieces	18
Mexican double condors, $20	19.00	Mexican dollars	32
Mexican condors, $10	9.50		

Chilian, Peruvian, and Guatemala gold, 20 per cent.

The through steamers will receive American silver (not defaced) at par; coast steamers will receive American silver at 6 per cent; no coins other than the above will be received.

JOHN M. DOW,
General Agent, Panama.

THE CYPRIOTE METHOD OF DESTROYING GRASSHOPPERS.—Consul Mason, of Marseilles, writes as follows, under date of February 27, 1889:

In consequence of the serious injury inflicted upon the crops in Algeria last year by the myriads of grasshoppers which descended upon that country in June and July, the Government has this year provided, on a large scale, the means for their destruction which has been so successfully employed by the English farmers in Cyprus.

The apparatus consists of long pieces of cheap cotton cloth, a yard in width, edged on one side with a strip of oil-cloth 6 inches in width, and each provided with strings by which it can be fastened to wooden stakes. When an invasion of the grasshoppers is announced, trenches are dug at right angles with the direction of their approach. The stakes are then driven in lines on the side of the trench from which the approach is expected and the cloths hung vertically, forming a curtain 42 to 44 inches high, fitting closely to the ground, and with the oil-cloth edge uppermost. Between these curtains, at intervals of 200 or 300 yards, open spaces are left 2 yards in width.

The march of the insects is in solid phalanx, devouring everything eatable as they go. When they reach the curtain, the grasshoppers climb readily to the point where they encounter the oil-cloth. On this they slip and fall, and after several futile attempts they attempt to clear the obstruction at a jump. Such as succeed fall into the trench on the further side and finding the ground barren of food, usually make no attempt to go further. The great majority fail to jump over the curtain and seek to circumvent it. They thus pour by myriads through the openings. At these points the ditch is made deep and wide, and the further slope covered with sheets of smooth zinc or tin upon which they are unable to climb. They are thus caught in masses, beaten to death with large wooden paddles, and their bodies used for feeding hogs or for manure. In some cases the hogs are turned into the trenches to kill their own prey, but in general the work is done by natives shod with large wooden sabots with which they trample the insects to-death.

Six thousand of these curtains and 100,000 oaken stakes have been provided by the Government for use in Algeria, and will be distributed through the military authorities, who are instructed to make details of soldiers to assist in placing them and instructing the natives in their use.

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