BUREAU OF HEALTH

ANNUAL REPORT

PHILADELPHIA

1897.

THIRD ANNUAL MESSAGE

OF

CHARLES F. WARWICK

Mayor of the City of Philadelphia

WITH

ANNUAL REPORTS

OF THE

DIRECTOR OF THE DEPARTMENT OF

PUBLIC SAFETY

AND OF THE

BOARD OF HEALTH

FOR THE

YEAR ENDING DECEMBER 31 1897

ISSUED BY THE CITY OF PHILADELPHIA 1898

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1898.

OFFICE OF THE MAYOR

PHILADELPHIA.

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CHARLES F. WARWICK.

Secretary:
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Chief Clerk:
HARRY C. GILL.

Contract and License Clerk.
JOSEPH F. JONES.

Stenographer and Typewriter:
HENRY W. PEIRSON.

Ass't Stenographer and Typewriter:
HARRY M. FISLER.

Messenger:
WILLIAM G. LEE.

the Sinking Fund Commission and including outstanding warrants, was $35,479,579.93, showing an increase of total debt since January 1, 1897, of $3,694,773.82.

The additions to the funded debt during 1897 were $5,054,275.00, made up in the following manner: Of the $6,000,000 Philadelphia and Reading Railroad Subway Loan of March 15, 1894, there was issued on account $2,400,000; for the improvement of Delaware avenue there was issued a loan of $2,000,000; for the Refunding Loan of June 17, 1897, $650,000 and unclaimed matured loans amounting to $4,275.00. The amount redeemed during the same period was $2,204,600, making an increase in the gross funded debt for the year of $2,849,675. Deducting the City securities held by the Sinking Fund Commission from this gross funded debt leaves a net funded debt of $37,939,220.22.

The real estate owned by the City as appraised by the Board of Revision of Taxes for the year 1898 amounts to $53,793,669, showing an increase over the appraisement of January 1, 1897, of $1,018,775.

It will be seen by the Controller's report that there is an apparent deficit. This, however, is susceptible of explanation. The appearance of even a seeming deficiency is misleading and results, in a measure, in affecting the credit of the City, especially in the minds of those who do not carefully study the details. The apparent deficiency is due to the fact that the personal property taxes for 1897, amounting to $1,031,608.93 and the amount due for schools, $1,289,934.16, making a total of $2,321,543.09, have not all been paid by the officers of the State to the City, as required by law, only $600,000 having been remitted, leaving a balance due the City and unpaid at the time the Controller made his report of $1,721,543.09.

The same condition has prevailed for years and it is vicious and unwarranted. In the settlement of the City's

accounts for the year the absence of the latter sum from the City Treasury discloses a deficit amounting to $828,325.61, whereas had this money been returned to the City by the State, as required by law, there would have been a surplus shown of $893,217.48. Repeated demands upon the part of the City Treasurer to the State authorities, urging the payment of this money, have been made, but up to this time without avail. From the reports of the State Treasurer it is shown that there is a balance in the banks of deposit of over four millions of dollars. There may be some reason for this delay in payment, but up to this time it has not been shown. The law under which the City pays this money to the State requires that immediately upon payment by the City, the State shall remit the proportionate share to which the municipality is entitled.

In the matter of the loan of $11,200,000 that was pending for some time before Councils and defeated, it may not be out of place to refresh our memories and take a retrospective view of the past two years. In 1896 an ordinance was passed providing for the creation of a loan of $8,000,000 for miscellaneous purposes, and subsequently an ordinance for the creation of another loan of $3,000,000 for the improvement of the water supply. At that time the expenditure of money under the items of these loans was considered of the utmost importance, in so far as the welfare of the City was concerned. There was little, if any opposition to the contemplated improvements, and preparations were at once made by the authorities for the placing of the loans. The question was raised, however, by certain parties who contemplated bidding for the same, as to the right of the City to increase her indebtedness under the law, it being contended that she had reached the limit of her power to borrow. To have attempted at that time to place the loans, with this doubt in the minds of the people would have resulted in either the City receiving too

little in the matter of premiums, or perhaps, no bids at all.

By reason of this condition of affairs, a Bill in Equity was filed by certain citizens in the Court of Common Pleas No. 1, asking that the City be restrained from the creation of these loans. After argument the Court held that the City had not reached the limit of her borrowing capacity and therefore had the right to increase her indebtedness to the amounts named in the ordinances. It was of the utmost importance, however, for the credit of the City, to have this question passed upon by the Supreme Court and an appeal was taken thereto, and in May last that Court handed down an opinion deciding that the question would have to be submitted to a vote of the people before the City's indebtedness could be increased. This necessitated waiting until the election in the following November and at that time, the question having been submitted to a popular vote, the City, by a majority of 17,475 votes, was authorized to increase her indebtedness in accordance with the items enumerated, to the extent of $11,200,000. From that date up to a short time since, Councils had this Loan Bill under consideration. For upwards of three years the matter received the attention of the people, and authority came from them in November last, virtually directing the enactment of an ordinance authorizing the increase of the indebtedness to the amount of $11,200,000 for the improvements provided for under the several and distinct items of the bill. In the meantime a measure introduced into Councils and known as the Schuylkill Valley Water Company's bill stood in the way of the passage of an ordinance authorizing said loan.

It has been contended in some directions, that the passage of the bill authorizing the creation of the loan would carry with it an appropriation. It is useless to say that this is not so; the bill simply provided for authority to increase the indebtedness of the City to the amount of $11,200,00,

and such authority would not have carried with it in any way an appropriation, or power to expend one penny under any of the items enumerated. If this Loan bill had passed, separate bills providing for appropriations under the different items would have been introduced and referred to the proper committees and unless favorably reported by them and acted upon favorably by Councils, the appropriations and expenditures could not have been made.

The most urgent and important item under the said bill was of course, that of $3,700,000 for the improvement of our water supply; this matter is referred to, however, under the distinct head of the Bureau of Water. The other items of the so-called Loan bill provided for the improvement of suburban roads, the completion of the Boys' High School and the erection of new school buildings, for building main sewers and the completion of the Aramingo Canal Sewer, for the building of a new almshouse, for the abolition of grade crossings on the line of the Philadelphia and Trenton Railroad, for the equipment and building of the Philadelphia Museums, for the building of an art gallery, for a library site and building, for the extension of Fairmount Park, for the repaving of streets, tramway streets and intersections and underground work incident thereto, for the building of bridges, for the improvement of public parks and squares, for the purchase of ground and the building of fire and police stations, and electrical and underground construction, for grading and repairs to paved streets, curved curbing, resurfacing asphalt streets, repairs to bridges, repairs to sidewalks, repairs to ditches and sluices, and for repaving with an improved pavement small streets, 40 feet or less in width from house-line to house-line and underground work incident thereto.

A careful reading of these items, I am sure, must convince every fair minded and progressive man in this com-

munity, that money expended in these directions would bring great results in so far as the health, safety, comfort, convenience and enlightenment of our people are concerned.

In order that this measure might receive popular support, I called about me a Citizens Advisory Committee composed of experienced, progressive business men representing every interest, and taken from every walk in life. This committee held many meetings, consulted with members of Councils (for the committee was appointed to advise not only with the Executive but the Legislative branches of the City Government), and they have loyally given their time and thought to the consideration of this important bill in its every feature, as affecting the interests and the welfare of the City.

It was contended a short time since, while this bill was pending in Councils, that it contained several objectionable features and that many members who were willing in every way by legislation to assist in the improvement of the water supply, could not vote for the bill in its entirety, and to meet this objection, I submitted a message to Councils calling upon both branches to disregard all factional considerations and acting singly for the welfare of the City, to consider alone that item providing for the improvement of the water supply, but even then the measure was defeated. I now call upon your Honorable Bodies to take up, at the earliest possible moment, the consideration of a loan bill, following in every particular the features of the original bill. There should be no opposition to the improvement and filtration of the water supply, to the improvement of suburban roads, to the completion of the Boys' High School, the erection of new school buildings, the improvement of our sewer system, the abolition of grade crossings, the extension of Fairmount Park, the common pleasure ground of the people, the repaving of our streets, especially the small streets, with im-

proved pavements, the abatement of the Aramingo Canal nuisance, the equipment and building of the Philadelphia Museums, an institution that has already given to our City an international reputation, nor to the building of an Art Gallery and a Free Public Library. These last two are not mere luxuries, as has been intimated in some quarters; they are for the improvement, refinement and education of our people and may be a beginning that will ultimately make our City the art centre of this continent. Public spirited citizens who have devoted their wealth and time to the collection of pictures and works of art stand ready, whenever the opportunities are offered, to present to the City donations of immense value. Such collections will call to our City strangers from all over this continent and also from foreign countries. Even if we are to consider these matters from the most selfish standpoint, an appropriation made in these directions will bring ample financial return.

No city can stand still. She must either advance or lose her position. Philadelphia in the past ten years has progressed marvellously and to halt her now in her career would be most disastrous.

I cannot refrain at this time from calling attention to a gift that has recently been made to the city by a public-spirited citizen of his beautiful residence on North Broad street, to be used as a branch of the Free Library. The gift is to be coupled with a donation of pictures representing the best examples of American art, amounting in value to the sum of $400,000.

If the city be generous and broad in her liberality in the support of such institutions, she will induce generosity upon the part of her wealthy citizens. These are questions that should rise above all selfish or personal considerations, and I appeal to your Honorable Bodies not to deprive this City

of the opportunity now offered, to secure those improvements that will be of incalculable benefit to our whole people and for all time.

DEPARTMENT OF PUBLIC SAFETY.

The report of the Director of the Department of Public Safety is full of interesting material and worthy of careful consideration, and I cannot speak too highly of the efficiency and loyalty shown by him in the discharge of his duty.

Bureau of Police.

The police force is well disciplined, under most excellent control, and has rendered most efficient service. Your attention is specially called to the fact that in certain sections of our City an increase in the number of patrolmen is required, and in the suburban districts, an increase in the mounted force.

An innovation was made during the past year in the assignment of a member of the force as a Drill Master, and already the value of his services is seen and appreciated.

Better accommodations and conveniences should be afforded the men in the different station houses. It will be seen by the report of the Director that 512 men are forced to occupy "beds in pairs." The station houses should be made as comfortable and as attractive as possible. Attention given to this matter will necessarily improve the *morale* of the force.

During the summer of 1897 11,719 vacant houses were under the care of the Bureau of Police, an increase of 1,253 over the year 1896. Of this number but 34 (12 less than in the year 1896) were entered and robbed of goods valued at $14,252. Goods to the amount of $1,388 were recovered. This gives some idea of the faithful services rendered by those men who watch during the period of vacation, when thousands of our citizens are absent from their homes.

Since my last annual report, I am glad to say that the question that had been raised as to the right of the City to appropriate money to the Police and Firemen's Pension Funds has been decided by the Supreme Court to the effect that the Municipality may make such appropriations. The work that these public servants are called upon to perform, often in the face of impending danger, requires courage and heroism, and to provide for their families in case of death and for them personally after a long period of faithful service, appeals not only to our sympathy but it is an imperative duty.

In the matter of Meat Inspection a great deal of valuable work has been done, and consequently much disease prevented. I refer you especially to the Director's report upon this important branch of the service.

Bureau of Fire.

This Bureau is in a most excellent state of discipline. The total number of fires during 1897 was 2,427, being 185 less than during the previous year. The total amount of loss sustained was $2,680,670, being an increase of $241,617 over the previous year.

In 1886, after a competitive test between the Rotary and the Piston types of engines, the former was considered the best. A few weeks since, another test was made by the Bureau in the presence of a committee of three citizens, experienced in these matters, and their report favors the use of the Piston rather than the Rotary engine. In view of this fact, I agree with the Director that hereafter the purchase of engines should be made only after a most careful competitive test.

A new danger in case of fire has arisen in this City within a comparatively recent period owing to the erection of very high buildings. Many of these structures are called fireproof, but experience has shown us that in frequent instan-

ces this is a misnomer, and it is of the utmost importance that special measures for protection should be provided. The suggestion that large mains should be laid from the Delaware river westward to Broad street on Market, Chestnut and Arch streets with a pumping station at the Delaware River, and a similar line of mains from the Schuylkill River eastward to Broad street on the same streets, with a pumping station at the Schuylkill River, for the purpose of giving direct pumpage of great volume and force in case of fire upon those main business thoroughfares, is worthy of careful consideration.

To show the dangers that are undergone and the heroism that is shown in this branch of the service, it is only necessary to state that 260 firemen, while in the performance of their duty, suffered injuries of a more or less serious nature.

Electrical Bureau.

The Electrical Bureau, as I have taken occasion to say heretofore in my previous messages is one of the best equipped and one of the most efficient in this or any other country. The plant is one of which the City has every reason to be proud.

Philadelphia, without question, in so far as I have been able to learn from personal inspection, is the best lighted City on this Continent. We have 7,119 lamps located in our streets which furnish not only illumination but provide safety and security for life and property.

The report of the commission appointed under resolution of your Honorable Bodies to inquire into the subject of an Electric Light Plant, to be owned and operated by the City, referred to in the report of the Director, merits your most careful attention. The report of the experts shows that an overhead system would cost $1,562,731, and its annual maintenance $583,664.74; that an underground

system would cost $3,475,867 and its annual maintenance $732,210.18.

Bureau of Health.

The Bureau of Health last year lost by death two of its members, Dr. Peter D. Keyser, who died on March 9, 1897, after a faithful and intelligent service covering a period of eight years, and Dr. W. H. Ford, who died on October 18, 1897, after a like faithful and intelligent service covering a period of twenty-six years, and let it be borne in mind that these two officials served without remuneration, save that which comes from the satisfaction of a public duty loyally performed.

The vacancies caused by these deaths were filled by the appointment of James W. Walk, M.D., on April 9, 1897, and George Woodward, M.D., on December 21, 1897.

The members of the Board of Health cannot be too highly commended for the loyal and efficient services they have at all times given.

The general health of the City during 1897 was unusually good. The death rate was 18.72 per 1000, being the lowest record for thirteen years. Diphtheria as shown by the reports prevailed to a greater extent than for several years past. Scarlet fever had a slight increase in percentage over the year 1896. There was not one single case of smallpox in this City during the year, so far as is known, nor has there been a case since October, 1895. Typhoid fever caused 401 deaths, one less than during the previous year, although the number of cases reported was 2,994, an increase of 504. It is generally believed that this increase was directly due to the use of our drinking water in certain localities. Dr. Abbott, Chief of the Division of Bacteriology, in a report made by him as to the cause of this increase in these districts, shows proofs of the connection between the outbreak of typhoid fever in December and the overflow of the intercepting sewer.

Accompanied by several officials I made, a short time since, a personal inspection of the Municipal Hospital, and I desire to urge upon the attention of your Honorable Bodies the absolute necessity of an immediate appropriation for its sanitary improvement, especially of the main building, which, in its present dilapidated condition lacking proper accommodations, is a disgrace to our civilization and a reflection upon our humanity. The heating apparatus is most primitive and the system of ventilation most incomplete. On the upper floors, where the sick are confined, the food is received in and distributed from bath rooms, which are in close proximity to a double row of water closets.

There are no suitable conveniences for the physicians, the nurses and those having the care of the patients, but notwithstanding these unfavorable conditions too much praise cannot be given to those in charge of the institution. The cleanliness and the tidiness shown throughout, spoke in commendation of the care and devotion of those having the hospital in charge.

The buildings should be enlarged and greater accommodations provided at the earliest possible moment. Owing to lack of space the authorities are compelled frequently to have in the same ward patients with scarlet fever as well as those with measles. This should not be allowed to continue.

The Board of Health is now carefully preparing plans providing for the improvement and extension of this hospital, which plans will soon be submitted to your Honorable Bodies for consideration. This hospital unfortunately is looked upon as a pest house and many efforts have been made to remove it from its present locality, and so long as this question of removal is agitated, just so long will there be uncertainty as to what should be done in the matter of permanent improvements. This question should be set at rest and acted upon definitely. It is said by those who know that in-

stitutions of like character are located in the very centre of the large cities of Europe. The science of public sanitation has made such an advance in modern times, that surrounding neighborhoods are comparatively safe and free from contagion. So far as this institution itself is concerned it has never been shown that the health of the immediate neighborhood has in any wise been affected by its presence.

As to that dreaded disease small-pox, it would be wise to erect a separate hospital in some other locality or if ground could be secured in close proximity to the present institution, a building with all modern conveniences ready for any emergency should be constructed.

Bureau of City Property.

The Bureau of City Property should be specially commended for the care given to the public parks. They are the pleasure grounds of the people, the play grounds of the children and they should be made as attractive as possible.

The restoration of Independence Hall is making satisfactory progress, and it is hoped that during the coming summer the work will be completed and that this building so sacred and historic in its associations will appear as it did in 1776, during the period of the American Revolution. Much study has been given to the matter by the officials having the immediate charge of this important work. Plans and pictures of the period of the Revolution that could in any wise throw light upon the matter have been carefully studied and historical information wherever obtainable has been most diligently sought for, in order that the restoration may be as close in appearance to the original structure as possible. Great interest has been shown in this work by many of our public spirited citizens and to all those who have assisted us we return our most generous thanks.

Bureau of Building Inspection.

The work performed by this Bureau is of the most important character and I desire to say that it is most intelligently performed in so far as lies within its power.

The building permits for 1897 numbered 8,312, an increase of 1,092 over the previous year. I call attention to the statement made by the Director that the appropriations made to this Bureau for the year 1897 were $49,320, and the receipts $39,339.83. The ordinance under which building permits are granted was enacted a number of years ago, when the conditions were radically different from what they are to-day, and a judicious re-adjustment of the charges would easily make this Bureau self-supporting. An ordinance has been framed and will be introduced early in April with this end in view.

To give some idea of the amount of work done by this Bureau during the year 1897 it is only necessary to state that the Inspectors made 52,394 visits. The condemnations amounted to 996, embracing 1,663 buildings.

The ordinance of April 10, 1894, which authorizes the inspection of elevators, as I said in my last Annual Message, cannot be carried out because the force of Inspectors is totally inadequate. In this connection let me say, that it is estimated that there are about 10,000 elevators already in this City and but three inspectors. Every precaution should be taken in the construction of elevators and in view of the tall office buildings which have been and are now being erected, such precaution is an absolute necessity for the safety of our citizens. The most scientific appliances should be insisted upon, and provision made for frequent and careful inspection.

Bureau of Boiler Inspection.

The total number of boilers inspected by this Bureau during the year 1897 was 3,141, and a reference to the report

of the Director will show that the receipts of the Bureau were $19,908.60, being $3,908.60 in excess of the expenses.

DEPARTMENT OF PUBLIC WORKS.

The Director of the Department of Public Works deserves much commendation for his able and conscientious discharge of his public duties. The immense amount of work done by this Department cannot be fully appreciated without a careful study of the Director's report.

Bureau of Gas.

The conduct of this Bureau remained under the control of the Department of Public Works until the City leased the same to the United Gas Improvement Company on November 30, 1897. The operations of the Bureau for 1897 until the lease was entered into, included the finishing of the 3,000,000 cubic feet holder at the Point Breeze Works, and the completion of Retort House No. 1 at the Twenty-fifth Ward Works. The total receipts, as reported for the eleven months to November 30, 1897, were $3,061,391.71. The gross profits for the eleven months were $382,662.12, not taking into account the expenses incident to betterments and the lighting of public street lamps as well as the miscellaneous expenses in the matter of the collection of the charges due the City for the consumption of gas.

In the matter of the lease of the Gas Works, there are some facts that I wish to submit at this time. In the beginning of August of last year a proposition was submitted to me by the United Gas Improvement Company providing for the leasing of the Gas Works from the City. The Company offered to expend in the space of three years $5,000,000 for permanent improvements to bring the plant up to the requirements of the day, and to pay a large sum of money annually into the Treasury of the City.

The principal features of the offer are so well known to your Honorable Bodies, that it is not worth while to refer to them specifically. When the proposition was made, the Company submitted a number of letters from prominent citizens and officials of other cities in which it was conducting its business, showing that it had given good service and entire satisfaction to the public. The proposition was also endorsed by many of our leading business men and had almost the unanimous support of the newspapers of this City. The opponents of the measure when it was introduced into Councils grew bitter in their opposition and in the heat and excitement incident to the time, statements were made which were not founded in truth.

The bill passed Councils and then came to me for my approval or disapproval. Immediately a Bill in Equity was filed in the Court of Common Pleas No. 4 praying the Court to restrain the execution of the contract. Pending the judicial proceedings the matter was held in abeyance. After argument the Bill was dismissed, the contract signed and the company put in possession of the property. Subsequently the Supreme Court affirmed the decision of the court below.

I believe this lease is in the interest of the community. The Gas Works, under the agreement, can be brought up to present scientific standards and will turn a much larger sum of money into the Treasury of the City, than could have been returned under Municipal management.

In my judgment no Municipality can as successfully conduct a manufacturing business as a private corporation.

The constant succession of administrations every four years, the consequent changes in the heads of departments and the inability to continue because of these changes, a settled definite policy looking to one end, must prove to every thinking man that these conditions greatly interfere

with the successful operation of any manufacturing enterprise. No private business could prosper under such a system.

For years the complaints of the citizens have been constant in relation to the quality of our gas, and the administration has done everything in its power to secure appropriations for the improvement of the works.

In my first annual message I said that the Gas Works were one of the most valuable assets of the City and called attention to the fact that the sum of $54,589.59 was all that had been expended during the year 1895 for permanent improvements; that to keep the works up to the proper standard, it would be necessary to make greater improvements, not only in the manufacture, but in the distribution of the gas, that these improvements would call for large expenditures of money and I further stated that the gas, when it reached the consumer, was not of the quality that it should be and there was no need to conceal the truth.

In my last annual message I again called the attention of Councils to the fact that it would be necessary to expend large sums of money, not only for the introduction of improved and modern machinery but for the laying of new and larger mains for the proper distribution of gas and to further increase the holder capacity.

Our method of distribution was unsatisfactory and insufficient. I cited as an instance of this, that in one section of the City, three dimensions of main were used, the largest being six inches in diameter, whereas a main of 20 inches in diameter would be required for the proper distribution of gas throughout that locality. Similar conditions existed in several other sections of the City. It was absolutely necessary to secure large appropriations to make the improvements in the matter of distribution as required. These facts were ad-

mitted upon every hand; the question had been most carefully considered from every point of view, but we were unable to secure the necessary amount of money to bring about the changes required. The works could not be kept up to a proper standard under these circumstances and something had to be done. It was as though we had a leaky roof which we were constantly patching and repairing when the necessities of the case required absolutely a new one. In view of these conditions, when the proposition of the United Gas Improvement Company was made I deemed it worthy of consideration. It was endorsed by many leading business men of this community, by almost the entire press of the City, and the offer was made by a corporation with capital, with experience and already in successful operation in many of the cities and towns of the United States. It was officered and controlled by business men of our own City, and so organized that it could at once, in case of lease, take immediate charge of the works. After two months' careful study of the matter I submitted the proposition to Councils. Carefully I watched the progress of the measure through both Chambers and saw nothing to change the opinion I formed at the time of its original submission to Councils.

It was of the utmost importance that the lease should be made with a company so experienced, so organized, so equipped and so capitalized that there would be no delay whatever in the continuing of the work in the manufacture and supply of gas.

To have entered into an agreement with a company that had to be formed, place its stock and organize would have resulted perhaps in disastrous delay. In other words it would have been an experiment with an inexperienced company or corporation that might have involved the whole question not only in delay but in annoyance and expensive litigation.

For reasons best known to those who circulated the reports, it was stated that the Gas Works were to be sold, and the transaction was frequently referred to as a sale of the City property.

In my inaugural address I stated that the works should be put in the highest condition of efficiency, that it would be true business economy to construct in the old city proper new mains and provide new methods of distribution; that I had been informed by those who professed to know that the works had not kept pace with the discoveries and improvements made in the manufacture of gas. I further stated, and I have seen no reason since for a change of opinion, that the works should never pass from the absolute control and ownership of the City. In my first annual message for the year ending December 31, 1895, I again called to the attention of Councils the fact that improvements were urgent, but that the gas works should never pass from the absolute control and ownership of the City, and in my second annual message for the year ending December 31, 1896, I again used the same language. I have always opposed a sale of the Gas Works.

The contract of the City with the United Gas Improvement Company is in no sense of the word a sale, but a lease. The works have not passed from the control and ownership of the City, but have been rented for a term of thirty years with a right reserved in the City, to retake possession of same at the end of ten years. It was to the best interests of the City that something should be done and immediately done at the time the proposition was made. The City, if she so desires, may create a sinking fund with the money received annally from this company under the lease, and if it be to her interest ten years from the date of the said lease to take possession, she will be in a position to do so and receive at that time a plant that will have been brought up to date, and that will have

every improvement known in the manufacture of gas, thus enabling the Municipality to conduct the business upon a profitable basis. The matter is entirely within the discretion of the people. Thirty years is a long period and perhaps prior to that time, gas in large cities will not be used for illuminating purposes.

After a most careful consideration of this matter for four months, I was clearly of the opinion when I signed the ordinance that the action of Councils was the proper solution of the case, and I confidently believe that the future will prove the wisdom of the position taken.

Bureau of Highways.

Philadelphia is as well paved as any City on this continent and ten years ago, no one would have predicted the marvelous progress we have made in the matter of improved pavements. No City on this hemisphere has ever had pavements laid at so little cost to itself. Officials from other cities who have visited us have been pronounced in their praise of the character of our highways. We have in the aggregate 1,000.36 miles of paved and macadam streets, of which 316 miles are occupied by Passenger Railway Companies which are compelled to keep and maintain in order the streets upon which their tracks are laid. We have 176.35 miles of macadam streets, of which 23 miles are turnpikes. In addition to the paved and macadam streets there are 412.64 miles of dirt roads. The work in the direction of improved streets should not be halted. The loan bill contained items amounting to $2,550,000, which money would have been spent in the further improvement of our highways.

Improved pavements, so-called, are one of the greatest inventions of modern times; they conduce to health and comfort in that they can be easily kept clean and are comparatively noiseless. Every small street in the City at the

earliest possible moment should receive attention, and appropriations should be made looking toward the laying of improved pavements. The work done by the City upon small streets in 1897 covers about 4.55 miles.

Bureau of Street Cleaning.

It gives me pleasure to state that the work of this Bureau has been performed in a very satisfactory manner. The total number of complaints of unclean streets from all sources in 1897 was 2,401, which is 812 less than during the preceding year, and it is to be hoped that with care even this number will be greatly decreased.

The garbage of the City has been collected daily and disposed of satisfactorily and in a sanitary manner. The total number of complaints received during the year amounted to 457, being 754 less than the previous year. It is stated, and without fear of contradiction, that this work is not better done in any City on this continent, and from information received no City has its work done in this regard more economically. The total amount expended last year for street cleaning and the removal of ashes and the removal and destruction of garbage was $866,402.62, the same character of work in New York costing, according to their reports, $2,959,085.48, and it must be remembered that the area of our City is more than twice that of New York City as it existed prior to the new charter.

There has been criticism in some quarters in relation to the awarding of the contract for the present year for the removal and destruction of the garbage, but this criticism is founded upon information that is erroneous and upon a misconception of the real facts. The proposals for this work were opened on November 30th, 1897, and among the several bidders for the work in the different districts were the following: The American Product Company, which bid for the First District, $54,200; Second

District, $59,700 ; Third District, $41,800 ; Fourth District, $93,000 ; Fifth District, $91,800 ; Case & Peoples, who bid for the First District, $25,000 ; Second District, $40,000 ; Thirtd District, $40,000 ; Fourth District, $80,000 ; Fifth District, $84,000 ; and Horatio P. Connell, who bid for the First District, $32,000; Second District, $39,800; Third District, $27,-000; Fourth District, $57,000; Fifth District, $54,000. The bids of Mr. Connell were rejected, because of the fact that he had no plant and gave no evidence that in any reasonable time he would have a plant of sufficient capacity to meet the requirements.

The contract was awarded to the American Product Company, which had the contract for the previous year and had given entire satisfaction. There had been but very few complaints from any quarter, the method of the destruction of the garbage was most efficient, and the management of its business in no wise a nuisance.

The system used by Case & Peoples, the second lowest bidders, had already been tried in this City and had proved most ineffectual. A contract had been awarded for the year 1897 for the removal and destruction of garbage in the Fourth District to The Philadelphia Incinerating Company, which used this same system. No sooner was the plant in operation than it gave rise to complaints from the people living and doing business in the immediate locality. The Women's Health Protective Association, after careful investigation of the plant, made a public protest against its further continuance. At length the nuisance became so great that a public meeting was held in the Mayor's office to urge that some action be taken looking to its early abatement. At that meeting the parties conducting and controlling the plant specially requested that a sub-committee of citizens be appointed to confer with them in relation to a settlement of the matter. An offer was then made by

them that if the plant were allowed to run for a few days longer it would be closed down and the nuisance at once abated. This offer was accepted and the business according to the agreement was stopped and the plant abandoned. So many were the complaints in relation to the plant while it was running, that to satisfy my own mind as to the truth, I personally visited it and although I did not enter the premises I was convinced by reason of the stench emitted that the complaints were in no wise exaggerated.

When Case & Peoples subsequently put in their bid for the present year to do the work under the same system, these facts were again submitted and a protest entered by the Women's Health Protective Association against the awarding of the contract to them. The matter was then carefully considered in every detail, and it was decided that there was but one thing under all the circumstances to be done, if we were to consider the health of the City and the comfort of the people and that was to award the contract to the American Product Company, the next highest bidder. This is one of the cases in which the authorities should exercise their discretion in awarding the contract not merely to the lowest bidder but to the best and most responsible bidder.

Bureau of Surveys.

The work under this Bureau is vast and of great importance and a careful study of the report of the Chief Engineer will be found to be most interesting and instructive. The several contracts for dredging in the Delaware River have proceeded satisfactorily, and it is expected that the work will be completed in the latter part of this year. We will then have a free and uninterrupted channel of 600 feet in width and 26 feet in depth at mean low water from the harbor of Philadelphia to the sea. It has been contended in the past that the obstructions in this river have

greatly interfered with the commercial prosperity of our City. With the removal of these obstructions every opportunity will be given our merchants and enterprising business men to restore our commercial supremacy.

The contracts for improving the channel of the Schuylkill River were proceeded with, unfortunately, very slowly, in a measure due to accidents to the machinery of the contractors, but an improvement has since been shown and the operations, it is expected, will be completed in a few months, although not within the time limit.

The work of widening Delaware avenue and the extension of the City piers is progressing most satisfactorily, and when completed will provide an avenue 150 feet in width between Vine and South streets, and will, in every way, facilitate the commerce and business interests of the City.

It is of the utmost necessity that liberal appropriations for the construction of main and intercepting sewers should be made. This is a class of public improvements that is not sufficiently appreciated by the people, because of the fact that it is hidden from view, but nothing so conduces to the health of a community as a complete system of sewers.

One of the most important pieces of engineering work in the history of the City is the construction of the Pennsylvania avenue Subway and Tunnel, and I am glad to say that during the past year remarkable progress has been made towards completion. The judgment of the Chief Engineer of the Bureau was shown when he originally insisted upon having all the sewers and underground work constructed before beginning upon the subway proper. During the progress of the work there has not been any overflow and at no time has the work been interfered with from that cause. The retaining walls are almost completed, the excavating shovels are at work and before the end of this year such progress will have been made that the people will have an idea of the importance and usefulness of the pro-

ject. From the beginning of the work until the present time, the business of the firms on the line of the improvement has not been interrupted or interfered with. The work incident to the underpinning and stone masonry has been done most successfully and scientifically and yet some of the leading manufacturing interests of the city are located on the line of this work. I cannot speak too highly of the engineering skill of those having in charge this great improvement. By this enterprise seventeen dangerous grade crossings will be abolished and on Broad street, the main thoroughfare running North and South, travel will be uninterrupted, and the Green street entrance to Fairmount Park vastly improved and relieved of many objectionable features. During the summer it is expected that Broad street, from Callowhill to Hamilton street, will be free of all obstructions and open to travel.

Bureau of Water.

The total receipts of this Bureau from all sources during 1897 were $2,971,357.52 as compared with $2,879,133.26 for the preceding year, an increase of $92,224.26. The expenditures during the year for permanent improvements and cost of maintenance were $1,665,153.21. The excess of receipts over expenditures or the net revenue from this branch of the City's service was $1,306,204.31.

In 1887 the total pumpage amounted to 32,426,779,765 gallons against 95,667,466,871 gallons in 1897, an increase of 63,240,687,106 gallons. In 1887 the consumption per capita per day was 89 gallons as against 187 gallons in 1897, an increase of 98 gallons per capita per day, or in other words an average daily consumption during 1897 calculated upon an estimated population of 1,385,734, of 187 gallons per capita per day, an increase in ten years of more than 100 per cent.

I think it will be admitted that this is a wasteful and

extravagant use of water. It is a matter that calls for immediate consideration. The waste should be stopped or if it goes on at the present rate, no one can calculate what the result may be ten years from this date. It shows what a bountiful supply we have, but it also must convince every thinking man that such waste should not go on indefinitely. Nothing should be done to restrict the proper use of water in manufacturing industries, but at the same time it behooves us to consider immediately some method which while giving a bounteous supply, will prevent extravagance and wastefulness.

During the past year the relining of the Queen Lane and New Roxborough Reservoirs was completed and they both are now in service.

I am glad to report that a recent careful inspection of the Queen Lane Reservoir, shows that since relining. it is virtually water tight and is now standing the pressure of the maximum quantity without any perceptible diminution, save that which results from evaporation.

The Director of the Department calls special attention to the condition of the Belmont Pumping Station, which he says at this time is critical; that the flue system is in a precarious state and liable to collapse at any minute. If this should occur, all the pumps at this station would be thrown out of service for several weeks and in thirty-six hours, all that section of the City west of the Schuylkill River would be without water. If this occurs, somebody will be held responsible for negligence and the results might prove disastrous, and I cannot too earnestly call upon your Honorable Bodies to provide an appropriation for the improvements and repairs there required. Nothing is more costly than negligence in the making of needed repairs to machinery, and appropriations at this time should be provided for the necessary work in this regard required at Belmont, Queen Lane and Roxborough Pumping Stations.

The improvement of the water supply is a crying need. It is a matter that affects the health of every man, woman and child in this community and should receive immediate attention, for unless something be done to furnish a pure healthful supply water, not alone will the City be affected in so far as its inhabitants are concerned, but the result will be to keep from our midst strangers and visitors who at all times add to the wealth of a community. The fame and reputation of the City depend upon the intelligent settlement of this question. The typhoid fever, prevalent here, a short time since, brought us all to a realizing sense of the danger that confronts us. If the City had the money in hand, a wise solution of the question would be to bring the water from a pure source in large aqueducts to this City, but that would require so vast an expenditure of money that such a plan at present is practically beyond our reach. Fortunately we have at this time a plentiful supply of water, which no doubt will meet the requirements for many years to come provided we do not draw upon it too extravagantly. The only question to be settled is as to its quality. Inasmuch as we cannot bring our supply from a distance, it is a duty incumbent upon us to make pure and healthful by a system of filtration that which we have at hand, and I cannot too strongly nor earnestly appeal to your Honorable Bodies to immediately authorize the creation of a loan, so that an appropriation may be made providing for the construction and maintenance of filtration plants. As soon as the loan is authorized, the City will be ready through her officials, having charge of the matter, to submit, as I have already stated in a special message sent to Councils last February, a comprehensive plan looking towards the accomplishment of this object. All that we need now to make our water wholesome is the construction of filtration plants. Subsiding reservoirs go far towards the improvement of the

water supply and we have accomplished much in that direction, but we must go a step further. We should unite our efforts to meet this great question intelligently and give relief at the earliest possible moment. Any unnecessary delay is a crime against humanity.

The net profits of the Water Bureau for the year as I have already stated amounted to $1,306,204.31. The sum which the people have authorized to be used for the improvement of the water supply is $3,700,000. In my judgment, this money should be used as far as it will go, in the construction of sand filtration beds. We have passed beyond the time of experimentation. There might be some question as to whether or not certain mechanical processes should be used but we have no time now to test them. There is one process known to nature which will filter water from any source and that is natural sand filtration. Wherever practicable, these natural sand filtration beds should be constructed, in close proximity to our reservoirs, but in the case of those reservoirs where by reason of the character of the locality or because of the expense incident to the purchase of land this system is not feasible, then the best mechanical process known, to meet the immediate requirements should be adopted. If this plan be accepted $3,700,000 will go far towards the solution of this much vexed question.

There is no need of further delay. Our duty is clear and imperative and the authority already given to Councils by the people is broad enough in its scope to give immediate and permanent relief to this community. Water is an absolute necessity. The health of our citizens should be the first consideration, and I firmly believe the plan above suggested will meet the exigencies of the case. The reports that have gone abroad in relation to the condition of our water supply have seriously affected the fame and reputation of the City of Philadelphia, and it becomes

our duty not only as officials, but as citizens to settle this question without further delay.

The furnishing of water is to my mind clearly a municipal function. It is not in any sense of the word a manufacturing industry. It is simply the distribution of that upon which life and health depend, and with authority given by the people themselves to Councils to expend a large sum of money for this purpose, there is no excuse to put this matter off for further consideration. A loan should be authorized and an appropriation should be made, plans should be submitted, and contracts immediately awarded for the doing of the work required. The very moment two or three districts are supplied with wholesome water the question will be settled.

DEPARTMENT OF CHARITIES AND CORRECTION.

The President and Directors of this Department have at all times displayed earnest and loyal devotion to the duties of their office. Though serving without remuneration they have given their constant and unremitting care to the conduct of the Bureaus under their charge.

In my prior messages I have urged that it would be of great advantage to the Almshouse if it could be removed from its present situation. The location of such an institution should be in the suburbs, if possible, in a farming section.

The Hospital should not be interfered with. Both institutions, the Almshouse and the Hospital, would be greatly benefited by their separation.

As I have stated before, it would be a wise measure to provide for the consolidation of all the Poor Districts in this county and place them under the direct control of the Department of Charities and Correction. The Almshouse at all times is crowded and its accommodations over

taxed, while some of the poor houses in the outlying districts have comparatively but very few inmates, and these should be used to relieve the overcrowded condition of the Almshouse proper. A bill was offered in the last Legislature providing for such consolidation, but unfortunately it did not succeed in passage; a like bill should be introduce when the Legislature again meets.

At the time of the destruction by fire of the State Capitol at Harrisburg I appointed a Committee of Citizens to secure if possible the assent of the State authorities to the removal of the Capital from Dauphin to Philadelphia County. Many meetings were held and an effort was made to arouse public sentiment, but unfortunately success was not reached. It would be not only a great advantage to our City but also to legislation to have the seat of the State Government located here.

Several events of great interest have taken place during the past year. The Society of the Cincinnati of the State of Pennsylvania, on May 15, 1897, dedicated the Washington Monument, which stands at the Green street entrance of Fairmount Park. The statue is imposing, artistic and the finest of its kind in the country. The event was considered of such importance that the President and Vice President of the United States and the members of the Cabinet took part in the ceremonies incident to the dedication. The whole affair reflected great credit upon our City.

The opening of the Commercial Museums on June 1, 1897, was an event of national interest. This institution has made rapid growth and its use and importance are appreciated throughout the length and breadth of this land and it has already received recognition and commendation from many foreign visiting Committees. The opening

ceremonies were most impressive; the President of the United States and several members of his Cabinet took an active part in the event.

The statue of Stephen Girard, located on the west side of the City Hall, was dedicated on the 20th of May, 1897. The statue is a tribute to the memory of one who as a merchant and philantropist did much for the advancement of Philadelphia, and is a worthy recognition of his great and abundant charity.

These statues add greatly to the adornment of our City.

The Eighteenth National Saengerfest was held in this City in June, 1897, and continued for three days; it was one of the most successful of its kind ever held in this country.

Philadelphia is fast becoming a Convention City and visiting delegations have been much impressed with that hospitality that characterizes us as a people.

In conclusion, let me ask the assistance and co-operation of your Honorable Bodies in all those matters that will tend to the advancement of our City's interests. Much can be done to push the City forward and maintain the progress she has made during the past ten years, but great results can only be reached when we earnestly and devotedly unite our efforts for the accomplishment of the common good.

I am, respectfully,

CHAS. F. WARWICK,

Mayor.

ANNUAL REPORT

OF THE

Department of Public Safety

FOR THE

Year ending December 31, 1897.

OFFICERS

OF THE

Department of Public Safety,

December 31, 1897.

Director,

FRANK M. RITER.

SECRETARY—JAMES HOYT.
BOOKKEEPER—HIRAM HORTER, JR.

Chiefs of Bureaus:

POLICE—ROBERT J. LINDEN, Superintendent.
FIRE—JAMES C. BAXTER, JR., Chief Engineer.
ELECTRICAL—DAVID R. WALKER.
CITY PROPERTY—A. S. EISENHOWER.
BUILDING INSPECTION—WILLIAM C. HADDOCK.
BOILER INSPECTION—JOHN OVERN.

MEMBERS OF BOARD OF HEALTH

ANTHONY A. HIRST, President pro-tem,
ALBERT C. DINGEE,
COL. J. LEWIS GOOD, Sectretary.
JAMES WALK, M. D.
GEORGE WOODWARD, M. D.
FRANK M. RITER, President ex-officio.

JOHN J. McCAY, Chief Clerk.

ELEVENTH ANNUAL REPORT

OF THE

DEPARTMENT OF PUBLIC SAFETY

FRANK M. RITER, Director.

Philadelphia, February 1, 1898.

HON. CHARLES F. WARWICK,
Mayor of the City of Philadelphia.

DEAR SIR:—In accordance with the Act of Assembly I herewith transmit a summary of the operations of the Department of Public Safety, together with the reports of the Chiefs of the several Bureaus embraced therein, for the year ending December 31, 1897.

Bureau of Police.

The total number of arrests for all offences during the year 1897 was 62,628, being an increase of 4,556 over the year 1896. There were 25,147 arrests for intoxication and intoxication and disorderly conduct, being an increase of 2,067 over 1896; and the total number of lodgers accommodated in the station houses was 641,613, being an increase of 15,175 over the year 1896.

During the year 1897 there were 787 women arrested for street walking. The following disposition was made of these cases. Two hundred and fourteen were discharged by the Magistrates, 298 were committed to the House of Correction, 175 committed to the County Prison for short

periods, 97 held to keep the peace, and five taken care of by various charitable societies.

There were in the same period 152 persons arrested for keeping bawdy houses. The following disposition was made of these cases. Thirty were discharged by the Magistrates, 15 committed to the House of Correction, 88 held for Court for trial, five held to keep the peace, and 14 committed to the County Prison.

There were likewise 306 arrests of inmates of bawdy houses. The following disposition was made of these cases. 102 were discharged by the Magistrates, 116 committed to the House of Correction, 78 committed to the County Prison, two returned to parents, six turned over to societies, and two held for Court for trial. All of which was accomplished without making the matter unduly conspicuous.

During the year 1897, 150 patrolmen were added to the force. A substantial increase in the police force is badly needed, their presence being urgent in the First, Twenty-first, Twenty-second, Twenty-sixth, Twenty-seventh, Twenty-eighth, Thirty-third, Thirty-fourth, Thirty-fifth, and Thirty-sixth Wards. In the Wards named the mounted service is the best that can be employed. Considering conditions it is desirable to erect the entire section of the City south of Wolf street, between the Delaware and Schuylkill rivers, into a thoroughly efficient mounted district. The mounted force of the other Districts should be very much increased. This is essential for the protection of property and persons in the suburban districts of the City.

The bicycle is a permanent feature of the equipment of the force and the squad using it has given great service on those highways which have become almost parades in the pleasant season of the year.

A new patrol station attached to the Twenty-sixth District at Trenton avenue and Dauphin street, was fully

equipped and entered service on March 26, 1897. This makes a total of 23 patrol stations.

Believing that the morale, discipline and physical welfare of a force is increased by a systematic drill, Sergeant John Reed was appointed Drill Master, and since October has systematically drilled the force of the City. The value of this departure is already seen. The men themselves have cordially adopted it. It creates in itself an interest in their work.

It is important that an additional police tug be added to the force that can be used as a fire boat and of such a model as to be able to enter any dock at low water.

I have visited personally the police stations and many of them are dilapidated and inadequate for the use of the service, 512 men occupying the beds in pairs. This only needs to be stated to present convincing argument for additional accommodation in the police stations.

The number of houses vacant during the summer months and temporarily under the care of the Bureau of Police was 11,719, an increase of 1,253 over last year. Thirty-four of these houses (12 less than last year) were entered and robbed of goods valued at $4,252, of which $1,388 was recovered. Thirteen thieves were arrested in connection with these robberies.

The detective force during the past year has worked with energy and fidelity. It is a very small force and a vast amount of work is required of it. The force should be enlarged.

The efficiency, morale, energy and intelligence of the police force is steadily improving.

Fire Marshal.

The total number of fires was 2,427, being 185 less than the year 1896. The total amount of loss sustained by these fires was $2,680,670, being an increase of $241,-

617 over the prior year. Three persons have been arrested for arson, one of whom was acquitted by the Court, one discharged by the Magistrate and the third is untried and the case still pending in Court.

The Fire Marshal has inspected and reported on 28 places of amusement and 24 places for the storage of petroleum during the year 1897.

Some places of amusement have obstructions of a permanent character blocking the exits as planned by the architects in the original construction of the building. While there may be no means of compelling a theatre already built to change its lines, to make it as safe as possible, it is suggested that the license of every theatre should be revoked or not granted until these obstructions have been removed. Should a conflagration occur the extent of the catastrophe cannot be estimated. Such obstructions appear to be general in other cities.

Your attention is likewise called to the fact that in many of our great retail stores the aisles are obstructed temporarily or permanently by counters, heavy shelves, tables, show-cases, etc. The risk should a fire or panic occur in any of these enormous establishments would be very materially increased by the presence of these obstructions. It is therefore suggested that an ordinance be drafted prohibiting such use of the aisles.

Meat Inspection.

The detailed report of this branch of the service will be found with the other reports. It will repay a careful study. A brief synopsis discloses the fact that in 1897 there were inspected 129,028 head of cattle, of which 275 were condemned. 238 of these suffered from tuberculosis, seven from actinomycosis, and 30 from starvation, emaciation and other causes. There were visited during

this period 4,368 slaughter houses and all market houses were visited twice a week.

There were 51,392 calves inspected, and of this number, 2541 were condemned as unwholesome and their sale prevented. All condemned cattle are destroyed.

There were 21 arrests during the year for selling unwholesome meat, and 24 persons were arrested for selling and exposing for sale unwholsome meat.

The untiring energy of Mr. Lowry in this exceedingly difficult work cannot be passed without special commendation. The disease preventive value of this work is of the utmost importance and the number of inspectors should be materially increased.

Bureau of Fire.

A full statement of the various fire companies, apparatus and men and the number of alarms answered during the year will be found in the acccompanying report of the Chief of this Bureau. The skill and courage of the members of the Bureau of Fire is of the highest order.

The City has been using for a number of years past the rotary type of engine. After competitive test in 1886 it was considered the best. The Bureau now has in its equipment 41 engines of the rotary type and five engines of the piston type. A serious criticism of the continued use of rotary engine was made by "The Times," in December. Deeming the matter of great importance a careful investigation was instituted as to the relative merits of the rotary and piston engines, in use in the Department, selecting two engines of about the same length of service. In this investigation the services of Coleman Sellers, Esq., S. M. Vauclain, Esq., and Clement R. Hoopes, Esq., were secured, three gentlemen of public spirit and of the most extensive knowledge in the manufacture and use of steam engines. They conducted a most careful inquiry into the

entire matter and were cordially assisted by the Chief of the Bureau of Fire. Their report most unqualifiedly favors the use of the piston instead of a rotary engine. It is believed that the rotary engine is not used extensively, and I am of the opinion that to justify a continuance of its use it would have to be affirmatively established that it was markedly superior to the piston type, the result of the investigation however establishes the reverse. The purchase of engines hereafter will be made after competitive test.

Most of the engines in the centre of the City are of the No. 2 size. These should be changed as rapidly as possible to engines of the No. 1 size which throw a greater quantity of water and to a greater distance.

I have again to urge a marked increase in the number of fire companies protecting portions of the City that are now remote from any located company, and in addition urge the erection of additional companies in portions of the City devoted to large manufacturing and commercial purposes.

Permit me to repeat that for the protection of the exceedingly high buildings which have been and will likely be erected a greater supply of water is required. Large mains should be laid from the Delaware river to Broad street on Market, Chestnut and Arch streets, with a pumping station at the Delaware river for the purpose of giving direct pumpage of great volume and force in case of fire; and a similar line of mains be laid to run from the Schuylkill, eastward to Broad street, on the same streets with a pumping station located on the Schuylkill. Numerous plugs could then be placed connecting with these mains, which would throw a very great stream of water even without the employment of the steam fire engines. By the employment of a proper series of valves the entire

pressure at the pumping station could be put upon any one of these streets, or divided as required.

The present accommodations for many of the firemen are quite insufficient for their comfort and health, and I desire to urge your Honor to call upon Councils for such an appropriation as will enable the old and dilapidated houses to be torn down and new ones erected in their place, or in the vicinity in which they now are.

There were 260 firemen who in the performance of their duty suffered injury of a more or less serious nature. Nothing could speak more graphically of the courage of the force and no comment need be made upon it.

I am glad to be able to announce that the Supreme Court has rendered a decision in which it permits the City to make an appropriation to the Police Pension Fund and the Firemen's Pension Fund. There are 66 persons deriving benefit from the Firemen's Pension Fund. This comprehends 1 assistant engineer, 6 foremen, 2 enginemen, 24 hosemen, 13 widows, and 18 children, and 2 dependent parents. The total sum paid to these beneficiaries in the year 1897 was $18,139.15.

There were erected 193 fire escapes in the year 1897.

Bureau of Building Inspection.

The work performed by this Bureau is of the highest importance. The record of the past year as shown by the following table indicates the great amount of work accomplished:

Statement of Permits, Operations, and Estimated Cost by Months for the Year 1897.

Months.	Permits.	Operations	Estimated Cost.
January	308	695	$1,128,920
February	371	685	1,053,085
March	882	1,748	2,851,160
April	946	1,843	3,395,980
May	888	1,645	4,149,305
June	743	1,291	3,198,570
July	636	1,142	2,202,930
August	685	1,069	1,611,495
September	814	1,470	1,989,505
October	870	1,564	2,188,895
November	678	1,043	1,169,485
December	491	842	976,440
Totals	8,312	14,937	$25,915,770

This shows an increase of 1,092 permits, an increase of 1,706 operations and an increase in estimated cost of $1,096,070 over 1896.

The appropriation to this Bureau for the year 1897 was $49,320, and the receipts were $39,339.83. The ordinance under which building permits granted is the source of this income. It was enacted a number of years ago when building conditions were very different from those of to-day. A judicious rearrangement of the charges would easily make this Bureau self supporting. An ordinance has been framed and will be introduced early in April looking toward this end.

The work of this Bureau is very extensive and is systematically and scientifically carried on. The total number of visits made by the Inspectors was 52,394. There were 966 condemnations embracing 1,663 buildings. Of

this number 1,072 were for violations of the law and 591 were because the buildings were regarded as dangerous.

The work of the elevator inspectors has been carried on with unusual vigor. Let me again call your attention to the inadequate force of elevator inspectors as required by the ordinance of April 10, 1894. As yet no action has been taken by Councils to enable the Department to carry out the provisions of the ordinance. At least 21 additional inspectors and an increased clerical force will be required, together with a Chief Inspector who should be a scientifically trained engineer. The ordinance above referred to requires that every elevator shall be inspected by the Bureau of Building Inspection at least once every three months. You will recognize how impossible this is when you recall that there are about 10,000 elevators in Philadelphia and but three elevator inspectors.

High buildings render the use of elevators indispensable and yet there is no law providing for the selection of a competent person to be in charge of the elevator. In New York City in the last six months there were 24 fatal accidents. Every elevator should have at its base an air cushion which up to the present time is regarded as the best device should an accident occur to the elevator.

In pursuance of the report of last year Acts were introduced in the Legislature fixing the maximum height of buildings at three times the distance from the building at its base to the centre line of the street. This would be an inducement for the setting back of the line of the buildings and the widening of streets. The maximum height was fixed at 150 feet. The efforts in the Legislature were not successful. A bill was also introduced providing that all buildings should be fire-proof which extended to a greater height than seventy feet and also every hotel, apartment house, or lodging house containing more than fifty rooms above the first floor. This bill passed

the Legislature but was vetoed by the Governor. Unless you should indicate to the contrary both of these bills will be reintroduced at the next session of the Legislature and pressed for passage.

The existing building laws should be amended so as to prevent open elevator shafts. They should be enclosed in an incombustible material. Too frequently they are the means of spreading fire and causing loss of property and life. All of the measures which the Department has advocated before the Legislature and which it will again advocate look toward the proper preservation of property and reducing to the minimum hazard the risk to human life in the various occupations throughout the City.

Bureau of Boiler Inspection.

The total number of boilers inspected and approved by this Bureau during the year 1897 was 3,141, in addition to which there were 92 locomotives inspected which had been manufactured for use in Russia, China and Japan by the Baldwin Locomotive Works.

The receipts of the Bureau during the past year were $19,908.60, being $3,908.60 in excess of the expenses of the Bureau.

Bureau of City Property.

This Bureau has in its charge the maintenance and repair of all property occupied by the Department of Public Safety.

The seven public baths owned by the City were opened June 21st and closed September 25th. During that time 2,853,372 baths were taken in them.

There were 406 bodies received at the Morgue and 203 bodies interred in the City burial ground. The crematorium received the remains of 62 bodies.

The enlargement of police station houses, which was made necessary by the crowding of the men has been carried on as rapidly as the appropriations for the purpose will admit. In many instances two men use the same bed, one occupying it immediately after the other. These unfortunate conditions exist in dormitories in sixteen districts. The Department is adding additional stories to the station houses thus enabling each to get as much dormitory room as possible.

The work on the public squares is being prosecuted by the City Forester and with very gratifying results. The squares are attractively planted with flowers, bushes and trees. Old trees are being removed and new ones planted wherever it is found advisable to do so.

A small pavilion has been erected at Allegheny avenue, on the Delaware river, by the City in which the Civic Club provided concerts during the summer evenings.

The Municipal Band continues to grow in favor and performed during the summer months at 23 squares, giving 90 concerts in all.

The work of the restoration of Independence Hall is progressing with the utmost care. The final plans for the front elevation follow the outlines in Scull and Heap's plan of the City of Philadelphia and environs published according to the Act of Parliment on March 12, 1777. The plans first adopted were modified to make the cornice of the arcade on a line with the cornice of the wing buildings. This will be in harmony with the engraving of Scull and Heap's plan as well as clearly shown in other prints, also in the oil painting by Peale of Chevalier Girard, and likewise in the water colors by Peale. The oil painting of Girard was painted in 1778 and has for a background of the portrait a picture of Independence Hall, arcades and wing buildings. These models have been followed. A statement of the progress of the work

and the chronology of the building will be made later for the full information of the public which it is believed has to some limited extent been laboring under the impression that the buildings taken down were of ancient date. I may briefly state here that the buildings taken down were erected in 1813. The period of restoration sought to be produced is the revolutionary period of 1776. I am confident that before the 1st of July all the work at present contemplated will have been finished.

The work of the Public Building Commission would seem to be about complete. The care of this building naturally falls within the work of the Bureau of City Property. It is therefore suggested that the Commission be requested to inform your Honor when they anticipate being able to hand the building over to the City. Eighty-four of the rooms of the Public Buildings are now cared for by the Bureau of City Property, and this is not half the number occupied for the City government.

The receipts of this Bureau last year were $86,905.96, this being an increase of $9,347.29 over the year 1896.

Mr. Eisenhower urges and I think with a great deal of sound reason, the necessity of abolishing the old market sheds and curbstone markets. The revenue from them each year decreases without any abatement of the nuisance to residents and storekeepers along the lines of the markets. The more dilapidated the markets, the greater the cost of maintenance.

Electrical Bureau.

This Bureau under its very able management continues to rank first in this country.

During the year 28,632 feet of conduit were laid aggregating 203,591 feet of duct. This will make the total number of feet of conduit laid and owned by the City 254,792, representing 1,766,366 feet of duct.

It has been the constant aim of this Department through this Bureau to endeavor at the very earliest time possible to have all of the police and fire alarm signal, and telephone service placed underground. This insures better and more satisfactory service and less liable to be affected by storms or climatic conditions.

During the year the cables laid in the various conduits in the territory lying between Callowhill, South, Twenty-third streets and the Delaware river, have enabled the Electrical Bureau to complete the work upon which it has been engaged for several years, namely, placing on underground wires all fire engine houses, police stations, fire and police signal boxes, the police and fire telephone system and the general telephonic service of the City within the territory above mentioned. This work will insure better service and will be safe from any interruptions from storms and other accidents resulting from sources which are menaces to overhead construction. The total amount of cable laid during the year amounted to 47,520 feet, making the total number of feet of cable owned by the City 11,658,405 feet, or 2208.165 miles of cable underground. I concur in the recommendation of Chief Walker that Councils be urged to make liberal appropriations for the completion of this work, so that at an early date all of the City's service will be underground.

There are 889 setts of telephones under the direct supervision of this Bureau, and the total number of calls, not including those from the police patral service, was 911,778. The total number of police signal service calls was 5,034,-641, of which 49,390 were wagon calls distributed as follows:

Conveyance of prisoners	32,041
Conveyance of injured persons	7,402
Conveyance of officers to fires	1,187
Miscellaneous work	8,760
	49,390

This will in some measure give an idea of the work in this branch of the service and which I believe is giving in every way satisfaction.

The trolley service of this City which is probably more extensive than any other in the country, did not make any very great extensions during the year yet they have been renewing the bonding of their tracks, renewing overhead wires worn by trolley wheels, placing new and larger return cables underground and otherwise improving their service, all of which work is supervised by this Bureau. By careful supervision trouble from electrolysis which has caused great annoyance and expense in other municipalities has thereby been prevented.

The City is considered one of the best lighted and perhaps this had better be set forth by an abstract from Chief Walker's report. It states "Philadelphia leads the cities of the country in many of its municipal affairs; but in none perhaps so decidedly as that of the lighting of highways. There are few which have systematized their methods of illumination as has been done here and none that will produce so many well lighted streets. There are 7,119 electric lamps located in our streets. By judicious arrangement they conserve to the comfort and security of all."

There are 37 engine and patrol stations that have been wired and are lighted free by the several electric light companies.

The price of elctric lighting for the year 1898 has been reduced to an average price of about 32.5 cents per lamp per night, a saving of about $18,777.30 over the year 1897.

The average price for furnishing electric light has decreased as will be seen by the following table:

Average price per lamp per night for 1895 was 41.15 cents.
Average price per lamp per night for 1896 was 35.5 cents.
Average price per lamp per night for 1897 was 33.3 cents.
Average price per lamp per night for 1898 was 32.5 cents.

In the report for 1896 attention was called to the appointment of a Commission under a resolution of Councils to inquire into the subject of an electric light plant to be owned and operated by the City. Chief Walker has incorporated the report of this Commission in his report and it may be of some importance and worthy of consideration. The report presents principally two plans, one with an overhead system, cost for plant, $1,562,731, and estimates the annual maintenance at $583,664,74, the other with an underground system, cost for plant, $3,475,-867, and an annual cost for maintenance of $732,210.18.

The report of the Commission is the first systematic effort on the part of the City to establish its own electric light plant and its recommendation should be considered and acted upon at an early date, or else permanetly abandoned.

The rental received from ducts occupied by various companies amounts to $7,884.68.

The total number of police patrol boxes now in use by the Department and under the supervision of this Bureau is 546 for police purposes, and 16 in use by private parties from which the City derives an income.

The various telephone, telegraph and electric light companies paid into the City Treasury $36,049.50, as license charges on poles, wires, etc.

The total revenue from all sources was $46.304.04.

The report of the Chief of the Bureau is worthy of study. The reputation of our electric system is second to none and should be looked upon with pride. Its methods are sought for and plans of its work are sent not only to cities within our own land but to many others, owing to its superiority.

Bureau of Health.

The Board of Health serves without compensation. The work of its various divisions is extensive and complicated.

It cannot be properly carried on without a general executive head responsible for the administration of its duties.

The Bureau of Health consists of the following Divisions: that of Registration of Births, Marriages and Deaths, of the Municipal Hospital, of the Medical Inspectors, of the Nuisance Inspectors, of House Drainage Inspection, of Milk Inspection, of Disinfection and of Bacteriology and Pathology.

The Board met with the loss of two members through death:

Dr. William H. Ford, died on the eighteenth day of October, 1897. He has been a member of the Board of Health for 26 years.

Dr. Peter D. Keyser, died on the ninth day of March, 1897. He has served upon the Board for eight years.

Appropriate resolution were presented and adopted setting forth the services of these gentlemen as members of the Board of Health.

These vacancies were filled by the appointment of James W. Walk, M. D., on April 9, 1897, and George Woodward, M. D., on December 21, 1897.

The health of the City during 1897 was unusually good. No epidemic of any kind existed, the death rate, 18.72 per 1,000, being the lowest record for 13 years.

Diphtheria seems to have been more prevalent than for several years. There were 1,474 deaths from this cause, an increase of 269 over 1896. The total number of cases reported was 5,405, an increase of 1,840 over the previous year, and a death rate of 27.28. All cases of membraneous croup are included under the head of diphtheria. Over 35 per cent. of the diphtheria cases reported in 1897 occurred within the last quarter of the year, while the death rate during the period was slightly lower than the average or 26.32 per cent.

Of the total number of cases returned in the last quarter

almost 28 per cent. occurred in the Twenty-second and Thirty-third Wards. The Medical Inspector and his assistants, together with the Inspectors of Nuisances, made a thorough inspection of the wards mentioned and many causes that were held to be instrumental in the spreading of the disease were promptly removed. With the sanction and co-operation of the Board of Public Education the public schools were inspected, and recommendations made and carried out which proved to be of material benefit in checking the course of the disease. During the holidays, which were extended for the purpose, school houses were fumigated and disinfected.

Scarlet fever caused 282 deaths, an increase in percentage of 2.14 over 1896. There was not a single case of small-pox reported during the year, nor has there been a case in this City since October, 1895.

Typhoid fever caused 401 deaths, a decrease of one over the previous year. The number of cases reported was 2,994, an increase of 504 over 1896. The death rate was 13.39 for the year and but 11.53 for the last quarter. During the month of December 258 cases were reported from seven wards alone, or over 53 per cent. of the total number reported from all wards. Of these wards there were reported from the Fifteenth Ward, 28 cases; from the Twentieth Ward, 27 cases; from the Twenty-eighth Ward, 34 cases; from the Twenty-ninth Ward, 94 cases; from the Thirty-second Ward, 32 cases; from the Thirty-seventh Ward, 22 cases; and from the Thirty-eighth Ward, 21 cases. An investigation as to the cause of the sudden increase of typhoid fever in the above named wards was ordered and a report thereon was submitted by Dr. A. C. Abbott, Chief of the Division of Bacteriology. That report establishes direct proof of the connection between the outbreak of typhoid fever in December and the overflow of the intercepting sewer on the 16th of December,

1897. It further shows that the excess of fever in the Queen Lane District was the result of the use of the water from the Queen Lane Reservoir which was being filled at the time of the overflow of the intercepting sewer.

There were 335 more deaths from pneumonia than from consumption, the number of deaths from the two diseases being 2,723 and 2,388, respectively. There was an increase of 18 in the number of deaths from pneumonia and a decrease of 126 from consumption.

The deaths of children under five years of age were 7,605, which is 33.45 of the mortality of all periods of life. For many years there has been a gradual decrease in the percentage of deaths of children under five years of age.

The total number of deaths from all causes was 22,735, a decrease of 1,247 over the previous year. The death rate from all causes based upon a population of 1,214,256 was 18.72 per thousand or one death to every 53.40 persons living.

The total number of births reported during the year was 29,591, a decrease of 162 over the previous year. The birth rate was one to each 41.03 persons living.

The number of marriages reported during the year was 7,963 or 15,386 persons married. The marriage rate was one to each 78.92 of the population.

There were 6,329 interments in cemeteries contiguous to the thickly populated and built up portions of the City. This class of interments has often been condemned and such cemeteries should be closed to further burials. The placing of bodies in the vaults beneath the parish house of Christ Church was prohibited inasmuch as the house is constantly occupied by children.

The number of complaints of nuisances amounted to 21,576, of which 18,678 were well founded and 3,606 dismissed. The usual house-to-house inspections were con-

ducted during the year and disclosed a better observance of sanitary laws. These inspections covered 16,572 premises.

Inspections were made of slaughter houses, cemetery vaults, lodging houses, etc., and I would recommend that abattoirs should be established and legislation asked for to compel the slaughtering of all cattle in them, under the proper sanitary regulations. This would do away with a large number of slaughter houses in different sections of the City and at the same time concentrate the powers of inspection.

Strenuous efforts have been made for years to rid the City of the nuisance caused by the keeping of hogs. In most part these efforts have been successful, but there still exists many persons in the southern section of the City who persist in keeping hogs and feeding them upon garbage. On December 17th a number of these persons were arrested and subsequently indicted by the Grand Jury and they are awaiting trial.

The bakeries inspection law, the enforcement of which was charged to the State Factory Inspectors, has improved the sanitary condition of bakeshops in a marked degree.

The public schools have been inspected during the year by the Medical Inspector and his assistants, and many defects were pointed out which it is believed will be remedied by the Board of Public Education.

The disinfecting corps performed 8,275 disinfections during the year. The importance of this work has never heretofore been fully realized. The growth and extent of the City makes it imperative for the proper performance of this work that at least six disinfecting stations be established at proper places throughout the City so that all bedding, clothing, carpets, etc., may be easily subjected to the live steam process which at 220 degrees destroys all germs of disease. These are inexpensive, take up but little

room, have no danger in themselves and yet tend to make the work of the Board of Health more efficient.

The Division of House Drainage had 13,820 plans submitted to it, of which 6,383 were for new and 7,437 for old buildings. The number of plumbers registered was 885.

The number of quarts of milk inspected in 1897 was 545,873, an increase of 140,903 over 1896. Of these, 8,285 quarts or 1.52 per cent. were condemned for adulteration with water and 31 quarts were found to be artificially colored. In 1892 the percentage of adulterated milk was 11.15 per cent.; in 1897, 2.38. There were 56 prosecutions during the year and true bills were found in every case. Eighteen defendants pleaded guilty, three were convicted, two were discharged by the Magistrates, and 31 cases are pending, awaiting trial.

During 1897 the Chemical Laboratory devoted much time to water analysis for the benefit of the Bureau of Water.

The number of patients admitted to the Municipal Hospital was larger in 1897 than in any other year in the history of the institution, numbering 2,179 as against 1,252 in 1896. This increase can mainly be accounted for by the diminishing of the repugnance which has so largely existed heretofore to becoming a patient in the Municipal Hospital. Of the total number admitted 1,295 suffered from diphtheria. There were 858 scarlet fever patients.

No more serious question is presented for municipal consideration than the one involved both in the permanency and extension of the work at the Municipal Hospital. That it has been deprived of its natural and legitimate assistance by reason of the uninterrupted agitation seeking its removal from its present location cannot be doubted. Existing prejudice would naturally develop oppsition and

seek to prevent the adoption of any new site for a municipal hospital. It is deemed a matter of great importance that the question of the location of a municipal hospital should be eliminated from all consideration and the present location considered a finality. There is ample room in the immediate vicinity for the indefinite extension of the service to be rendered by the municipal hospital. The existing plant, excepting alone the modern pavilion used in cases of diphtheria, is inadequately supplied in every particular, and the success of the administration of the Municipal Hospital from a medical standpoint is a surprise and tribute to the genius of those having the care of the sick under their charge. It is important that the accommodations should be ample and that the City should have the use and advantages of modern appliances. The possibility of having cases of small-pox taken to the hospital is unfortunate. It gives the place the horrible character of a pest house. The objection arising from the possibility of treating small-pox at this place could be entirely eliminated by the purchase or maintenance upon the outskirts of the City of a small piece of land of four or five acres in which, should cases of small-pox arise, or an epidemic of the disease appear, the patients could be taken at once. A very inexpensive pavilion of wood could be erected and the place be kept in readiness for use at any time. This would leave the Municipal Hospital free to deal with cases which do not create in the mind of the public a high degree of apprehension.

With this in view a central heating, lighting and washing plant should be established at the Municipal Hospital, proper accommodations for the employees, additional stable and disinfecting facilities, a pavilion for mixed diseases, an additional pavilion, a dead house and a mortuary chapel should also be added.

The entire question of the organization of the Municipal

Hospital has been referred to the Board of Health, and at the earliest time practicable a report of their deliberations with suggestions and plans of a most complete order will be submitted.

It is learned that a movement is on foot to put a pay hospital in the immediate vicinity of the Municipal Hospital for the treatment of contagious diseases. This should be welcomed. It is of great importance to persons of moderate means who, living in hotels or boarding houses or in their own homes, suddenly find themselves stricken with contagious diseaese; such as diphtheria, scarlet fever, or a disease of a similar character, that there should be a hospital where they can be sent and have proper medical attention and for which a reasonable charge would be made.

The development and growth of our Commonwealth as exhibited in our cities has completely changed conditions heretofore existing. The isolation of a community and its control over its own acts has been regarded as an inestimable privilege. The rapid growth of our municipalities has devloped it into a menace. No longer should it be possible for a City to have its source of water supply menaced by another, or the other to menace the former by the distribution of its sewage, both depending alike upon the accident of location. The question of both water and sewage from a health standpoint must be taken and considered together. To do this effectively I am of opinion that the State should be divided into sections comprising its great valleys and water-sheds, having over each territory so indicated a board with plenary power to take land and to preserve secure the source of supply of water; and to control municipalities in the methods of distribution of their sewage. This power might be vested in the State Board of Health with appropriate legislation enlarging its powers. The total inefficiency from any view

of municipal government which permits a City or town to provide for its own sewage without regarding the existence and health of those who live between it and the mouth of the stream which it utilizes in this respect cannot be urged too strongly.

The Bacteriological Division is demonstrating the wisdom of its creation and is being used by physicians at large with the greatest confidence. Arrangements are being made which will develop an intelligent alliance between the Bacteriological Division and the Division of Disinfection, which will be of great value to the community.

Special Recommendations.

1. An increase in the police force of the City as suggested, especially of mounted men in the suburban districts.

2. An increase in the fire force as essential to the proper protection of property in certain sections of the City.

3. The appointment of an Executive Officer for the Board of Health.

4. The passage of an ordinance of Councils regulating the fees of the Bureau of Building Inspection for building permits and inspection of plans.

5. The thorough and complete electric lighting of the City from a police standpoint.

6. The construction of main conduits by the City for the use by all companies using electricity for any purpose.

7. The appointment of a committee to consider the older part of the City for the purpose of ascertaining those streets which are not public highways, and having them under the Act of Assembly placed upon the City plan as such, so that they may be properly suplied with water, sewers and light.

8. The appointment of elevator inspectors and the adoption of some rule which would compel all buildings to use some system which would tend to prevent injury arising from defective elevator machinery.

9. The vesting by the State, in an appropriate body, of the power to preserve the sources of water supply, and control the distribution of sewage by municipalities.

10. The passage of an ordinance prohibiting the obstruction of aisles in our great retail stores.

In conclusion, I desire to inform you of the deep sense of obligation I am under to the Chiefs of the various Bureaus of the Department of Public Safety, and all their subordinates and in regard to the gentlemen connected with my immediate office to assure you of their unflagging zeal in the complicated and often delicate work entrusted to them, and my unbounded confidence in them.

To them and to all members of the Department of Public Safety I desire to express my personal appreciation and gratitude.

I remain, with respect,

Yours truly,

FRANK M. RITER,
Director.

ANNUAL REPORT

OF THE

BOARD OF HEALTH

OF THE

CITY AND PORT OF PHILADELPHIA

FOR THE YEAR 1897.

MEMBERS AND OFFICERS

OF THE

BOARD OF HEALTH

OF THE

CITY AND PORT OF PHILADELPHIA

For the Year 1897.

CHARLES F. WARWICK, Mayor, Member *ex-officio.*
FRANK M. RITER, Director of Public Safety, Member and President *ex-officio.*

OFFICERS:

President pro tem.	*Secretary.*
†WILLIAM H. FORD, M. D.	A. A. HIRST.

MEMBERS:

WILLIAM H. FORD, M. D.. ALBERT H. DINGEE,
A. A. HIRST, *PETER D. KEYSER, M. D.,
J. LEWIS GOOD.

* Died March 9, 1897. James W. Walk, M. D., appointed May 4, 1897.
† Died October 18, 1897. George Woodward, M. D., appointed December 21, 1897.
October 27, 1897: A. A. Hirst elected President, J. Lewis Good, Secretary.

STANDING COMMITTEES.

Sanitary.

FORD, KEYSER, DINGEE.

House-drainage and Plumbing.

HIRST, GOOD, KEYSER.

Accounts, Office and Library.

GOOD, HIRST, DINGEE.

Registration and Burial Grounds.

KEYSER, HIRST, GOOD.

DISTRICT COMMITTEES.

First District.

South of Market street and east of Schuylkill river.

HIRST, GOOD.

Second District.

North of Market street and east of Schuylkill river.

DINGEE, KEYSER.

EXECUTIVE OFFICERS.

Health Officer.

THEODORE B. STULB.

Port Physician.

WALTER D. GREEN, M. D.

OFFICERS.

Chief Clerk,
JOHN J. McCAY.

Chief Registration Clerk,
J. V. P. TURNER.

Physician-in-Charge, Municipal Hospital,
WILLIAM M. WELCH, M. D.

Medical Inspector,
J. HOWARD TAYLOR, M. D.

Chief Inspector of Nuisances,
CHARLES F. KENNEDY.

Chief Inspector of House-drainage, etc.,
GEORGE S. HUGHES.

Chief Inspector of Milk,
WILLIAM J. BYRNES.

Chief, Division of Bacteriology,
A. C. ABBOTT, M. D.

Chemist,
WILLIAM C. ROBINSON, JR.

ANNUAL REPORT

OF THE

BOARD OF HEALTH

OF THE

CITY AND PORT OF PHILADELPHIA

For the Year 1897.

Philadelphia, February 11, 1898.

FRANK M. RITER, ESQ.,
Director, Dept. of Public Safety.

DEAR SIR:—The Board of Health respectfully submits through you to his Honor, the Mayor, its report of the work of the Bureau of Health, for the year 1897:

The sad duty devolves upon us of announcing the deaths during the year of Drs. William Henry Ford and Peter D. Keyser, members of the Board, that of the former occurring on October 18th and of the latter March 9, 1897. Dr. Ford's term of service began in the year 1871, and with the exception of one year (1881-1882) it was continuous to the time of his death. He was President of the Board during the years 1878-1880 and from 1886 to his decease. Dr. Keyser was appointed in 1889 and remained in the Board to the date of his death.

Of Dr. Ford, Dr. Richard A. Cleeman, a member of the Board of Health, from 1879 to 1887, at the banquet of the American Public Health Association held in this city, in October last, truly spoke:

"It is a sad and difficult duty you place upon me, but

I willingly attempt it, for I am glad to render a tribute, however humble, to the memory of so admirable a man as was Dr. William H. Ford, the late President of the Board of Health of Philadelphia.

"Sitting side by side with him in that Board in his earlier years of office I can speak with authority of the man as he was and of the things he has accomplished. For twenty-five years, a quarter of a century, he was the foremost spirit of that body, and if it has accomplished anything for the health and sanitary enlightenment of the community, the praise must go almost exclusively to him. He took the initiative in everything; he wrote the first formal annual report of the Board; he built and equipped its hospitals; he devised and established its laboratories; he prepared nearly all the health 'tracts' distributed to the public. And all this he did with such self-abnegation and modesty that the community scarcely knew the name of its benefactor.

"I will not dwell on his achievements in scientific literature in which he wielded a facile pen, his well-stored mind finding easy expression in the printed page. These are well-known to a body like this. I would rather speak of his personal qualities, his utter unselfishness and strict, almost quixotic, integrity. During all his years of service he never received a single penny of remuneration, and he never took advantage of a single perquisite of his office. His sole rewards were the appreciation of his friends and the plaudits of his own conscience.

"It is a grand thing in these days of perverted politics to see the record of a man in office who was never swayed by purely party motives. Dr. Ford had political convictions and followed them steadfastly and consistently, but he never put party ends before public interests; he was a loyal citizen who in his civic duties knew naught but his city's welfare.

"What a noble face he had! What a gentle kindly manner! the exquisite neatness of his dress but typified the whiteness of the character within. Alas! that the swift messenger of death has shrouded him in its sable wings and he will be no more with us in our councils and our daily lives.

"I would wish that when it falls to our lot to cross the dark river those on the hither shore might cry out to each of us as I do him: 'Farewell, gentle spirit, the world is richer for thy coming for thou hast given it more than thou has received.' "

Dr. Keyser was a faithful and hard-working official. During his connection with the Board he devoted a great deal of his time to sanitary work. To him is due the credit of having passed "An Act for the prevention of blindness, imposing a duty on all midwives, nurses, or other persons having the care of infants, and also upon the Health Officer, and fixing a penalty for neglect thereof," which has been of great benefit to the community.

The health of the City during the year 1897 was unusually good, the death-rate, 18.72 per 1,000, being the lowest recorded for more than thirteen years. No epidemic existed in any portion of the year.

Diphtheria, which was more prevalent than for several years past, caused 1,474 deaths, an increase of 369 over the previous year. The number of cases reported was 5,405, an increase of 1,840 over the year 1896. The death rate from this disease was therefore 27.28. It may be well to remark that all cases and deaths reported as membraneous croup are included under the head of diphtheria and are so spoken of throughout the entire report, except where otherwise noted.

The following table shows the number of cases of diphtheria and the deaths therefrom, in each quarter of the year 1897; also, the death rate during each of said periods:

Quarter.	Cases.	Deaths.	Per cent.
First	1,311	372	28.37
Second	1,222	339	27.74
Third	973	263	27.02
Fourth	1,899	500	26.32

By the above table it will be seen that over 35 per cent. of the cases reported in 1897 occurred in the last quarter of the year. It will also be seen that the death rate during that period was slightly lower than in any other quarter of the year.

Of the 1,899 cases returned in the last quarter, 529, or almost 28 per cent. of the number reported in the entire City during that period occurred in the Twenty-second and Thirty-third Wards.

The Medical Inspector and his assistants, together with the Nuisance corps, made a thorough investigation of that portion of the City and such causes as were thought to be instrumental in spreading the disease were promptly removed. The schools were also inspected and certain recommendations submitted such as the daily sterilization of all pencils used in the school rooms, the removal of all vines and plants therefrom, the excluding from school, at once, by teachers, of all children who showed symptoms of illness, and the closing of these buildings for a longer period than usual during the Christmas holidays, in order that disinfection or fumigation might be performed, all of which, upon request made to the Board of Education, met with the approval of that body and instructions were given to carry them into effect. During the holidays these schools were all thoroughly fumigated by the Disinfecting Division and at the close of the year the course of the disease had been materially checked.

The following table shows the number of cases, the

deaths, and the death rate from diphtheria for each of the past ten years, 1888-1897, inclusive:

Year.	Cases.	Deaths.	Per cent.
1888	1,170	350	29.91
1889	1,455	375	25.77
1890	1,820	528	29.01
1891	3,251	918	28.23
1892	5,053	1,435	28.39
1893	3,471	1,159	33.39
1894	3,608	1,396	38.41
1895	3,853	1,020	26.47
1896	3,595	1,149	31.96
1897	5,405	1,474	27.28

Scarlet fever caused 282 deaths, an increase of 221 over the previous year, when the disease was of a very mild character. The number of cases reported was 3,553, an increase of 2,501 over those returned for 1896. The death rate from this disease was 7.93, which is an increase over that of 1896 of 2.14.

There was not case of small-pox reported during the year, and not a single case of this disease has occurred in this City since October, 1895.

Typhoid fever caused 401 deaths, a decrease of one (1) over the previous year. The number of cases reported was 2,994, an increase of 504 over 1896. The death rate was 13.39.

The following table shows the number of cases of typhoid fever, the deaths, and the death rate in each quarter of the year 1897:

Quarter.	Cases.	Deaths.	Death rate.
First	466	81	17.38
Second	899	123	13.68
Third	771	98	12.71
Fourth	858	99	11.53

As will be shown by a table which follows, the increase in the number of cases that occurred in the latter part of the year, was confined principally to a few of the northern wards of the City. For instance, there were repotred from the Fifteenth Ward in the month of December, 28 cases; from the Twentieth Ward, 27 cases; from the Twenty-eighth Ward, 34 cases; from the Twenty-ninth Ward, 94 cases; from the Thirty-second Ward, 32 cases; from the Thirty-seventh Ward, 22 cases, and from the Thirty-eighth Ward, 21 cases; a total of 258 cases from seven wards, or over 53 per cent. of the total number reported from all wards during the last month of the year.

An investigation as to the cause of the sudden increase of this disease in the localities referred to was ordered and a report thereon was submitted by Dr. A. C. Abbott, Chief of the Division of Bacteriology, and may be found in the appendix.

The following table shows the number of cases of typhoid fever reported, by wards, in each month; also, the total number for the year 1897:

Ward.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	October.	Novemb'r.	December.	TOTAL.
First	10	7	4	18	19	8	21	17	15	4	8	12	138
Second	3	1	4	5	7	.....	4	5	2	7	1	7	46
Third	1	.....	1	2	2	2	2	2	4	2	2	.....	20
Fourth	1	2	1	3	1	1	2	4	4	2	.....	2	23
Fifth	3	1	1	.....	.....	.....	2	7	2	.....	.....	4	20
Sixth	1	.....	.....	.....	.....	.....	1	3	2	1	1	1	10
Seventh	8	5	4	8	25	9	19	16	15	7	4	12	132
Eighth	1	3	4	11	5	3	1	8	2	1	2	20	61
Ninth	.....	1	.....	.....	1	.....	.....	.....	.....	1	1	3	7
Tenth	6	3	1	5	5	3	5	7	.....	6	1	9	51
Eleventh	.....	.....	.....	.....	.....	.....	3	.....	2	1	1	2	9
Twelfth	2	.....	1	.....	.....	1	1	5	.....	3	.....	.....	13
Thirteenth	2	1	.....	1	4	.....	2	2	1	.....	1	5	19
Fourteenth	4	.....	1	3	3	2	2	4	3	.....	1	1	24
Fifteenth	7	3	5	6	11	8	8	13	4	5	8	28	106
Sixteenth	.....	.....	.....	.....	1	3	.....	.....	6	.....	1	1	12
Seventeenth	.....	2	.....	1	1	.....	1	2	.....	.....	1	.....	8
Eighteenth	1	1	2	1	2	1	6	8	2	.....	3	4	31
Nineteenth	18	21	22	7	31	16	5	22	24	8	21	23	218
Twentieth	4	3	4	6	4	6	4	6	6	1	10	27	81
Twenty-first	2	1	4	26	18	9	6	11	7	9	4	7	104
Twenty-second	15	7	16	38	39	15	9	34	21	9	12	13	228
Twenty-third	5	3	7	7	6	.....	3	1	1	1	5	10	49
Twenty-fourth	9	7	15	14	20	20	12	17	11	6	7	20	158
Twenty-fifth	2	3	4	8	4	4	1	3	2	3	3	5	42
Twenty-sixth	3	3	4	5	11	9	8	18	11	11	4	11	98
Twenty-seventh	6	2	8	26	13	14	13	19	12	11	5	17	146
Twenty-eighth	7	4	7	7	24	7	3	3	7	3	16	34	122
Twenty-ninth	13	5	6	21	19	30	18	24	24	12	29	94	295
Thirtieth	3	2	3	6	4	4	5	6	5	1	1	6	46
Thirty-first	.....	.....	4	2	1	.....	2	3	.....	3	1	4	20

Number of cases of typhoid fever reported—Continued.

Ward.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	October.	Novemb'r.	December.	Total.
Thirty-second	7	5	4	3	11	6	8	4	7	2	19	32	108
Thirty-third	16	9	30	24	19	16	7	6	12	10	13	11	173
Thirty-fourth	5	2	1	15	19	13	11	17	8	3	14	10	118
Thirty-fifth	2	3	1	6	3	3	2	2	2	.....	.....	2	26
Thirty-sixth	6	3	6	6	11	3	7	11	4	3	5	5	70
Thirty-seventh	.....	1	2	2	13	11	3	7	1	4	12	22	78
Thirty-eighth	.....	.....	2	7	12	8	8	8	2	3	8	21	84
Total	173	114	179	295	369	235	215	325	231	148	225	485	2,994

The following table shows the number of deaths from typhoid fever by wards in each month; also, the total number for the year 1897:

Wards.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	October.	Novemb'r.	December.	Totals.
First	4	1	.....	3	3	1	2	2	.....	1	.....	1	18
Second	.....	.....	1	1	.....	1	.....	1	1	1	.....	2	8
Third	.....	.....	.....	1	.....	.....	1	1	1	.....	1	.....	5
Fourth	2	1	1	.....	.....	1	2	1	1	.....	.....	.....	9
Fifth	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	3
Sixth	.....	.....	.....	.....	1	1	.....	.....	1	.....	.....	.....	3
Seventh	.....	.....	.....	2	3	1	.....	2	1	.....	.....	2	11
Eighth	.....	.....	2	1	.....	1	.....	.....	.....	1	.....	.....	5
Ninth	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	2
Tenth	1	1	.....	1	1	.....	1	.....	.....	1	.....	.....	6
Eleventh	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Twelfth	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	1	3
Thirteenth	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Fourteenth	.....	.....	.....	.....	1	1	1	1	1	1	.....	1	7
Fifteenth	2	.....	1	.....	2	1	.....	2	1	1	1	5	16

Number of deaths from typhoid fever—Continued.

Wards.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	Octob r.	Novemb'r.	December.	Totals.
Sixteenth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Seventeenth	.....	.....	1	.....	.....	.....	.....	2	.....	.....	1	.....	4
Eighteenth	.....	1	.....	1	1	.....	2	1	.....	.....	.....	.....	6
Nineteenth	3	5	1	.....	2	2	1	3	1	1	3	3	25
Twentieth	2	1	1	.....	.....	2	.....	1	.....	.....	1	2	10
Twenty-first	.....	.....	1	1	3	1	.....	2	1	.....	.....	1	10
Twenty-second	3	1	2	5	4	4	2	7	1	1	1	.....	31
Twenty-third	1	.....	3	2	2	.....	.....	.....	.....	.....	1	1	10
Twenty-fourth	2	.....	2	2	3	2	1	4	1	1	3	3	24
Twenty-fifth	.....	1	.....	1	1	1	1	1	1	.....	1	3	11
Twenty-sixth	1	.....	.....	1	2	1	2	1	.....	1	.....	4	13
Twenty-seventh	2	.....	.....	2	2	2	.....	.....	1	2	1	1	13
Twenty-eighth	.....	.....	.....	1	1	1	1	2	2	2	3	3	16
Twenty-ninth	3	.....	.....	.....	1	1	1	1	3	1	2	5	18
Thirtieth	1	.....	.....	2	1	.....	1	1	.....	.....	1	.....	7
Thirty-first	.....	.....	2	2	.....	.....	.....	1	1	.....	2	.....	8
Thirty-second	1	1	3	1	3	.....	.....	.....	.....	.....	1	6	16
Thirty-third	3	3	1	2	5	2	.....	.....	1	4	1	1	23
Thirty-fourth	1	.....	.....	1	5	1	1	3	1	1	3	.....	17
Thirty-fifth	.....	.....	.....	1	.....	2	.....	1	.....	.....	.....	.....	4
Thirty-sixth	2	1	2	4	2	1	1	1	2	.....	.....	.....	16
Thirty-seventh	1	.....	.....	.....	.....	1	1	1	.....	.....	.....	2	6
Thirty-eighth	1	1	1	3	.....	.....	2	4	.....	.....	1	1	14
Totals	36	18	27	41	50	32	25	49	24	20	31	48	401

Table showing the number of deaths and the death rate per 100,000 of population from typhoid fever for each of the six years, 1892–1897.

Year.	Population.	Deaths.	Death rate per 100,000 of population.
1892	1,092,168	440	40.28
1893	1,115,562	456	40.87
1894	1,139,457	370	32.47
1895	1,163,864	469	40.20
1896	1,188,793	402	33.81
1897	1,214,255	401	33.02

Pneumonia again leads consumption, as in 1896, in the number of deaths recorded, there being 2,723 from that disease, an increase of 18 over the previous year, and 335 more than from consumption, which caused 2,388 deaths, being 126 less than those recorded in 1896.

The deaths of children under five years of age were 7,605, which is 62 per cent. of the population, or 33.45 per cent. of the mortality at all periods of life and from all causes. The percentage of deaths at this period of life to the total mortality is lower than that of any year ever recorded.

For many years past there has been a gradual decrease in the number of deaths of children under five years of age. It is believed there are several causes contributing to this gratifying result, viz: the better knowledge and performance of sanitary laws on the part of the individual; the improved sanitary condition of the surroundings of the habitations of the poorer classes, such as proper paving, drainage, etc., and the great benefits bestowed by such organizations as the Sanitarium at Red Bank, The Children's Country Week Association, and kindred chari-

ties which send to the country daily, during the heated months, thousands of poor children.

The total number of deaths from all causes was 22,735, a decrease of 1,247 over the previous year. The death rate from all causes, based upon a population of 1,214,256, was 18.72 per thousand, or one death in every 53.40 persons living.

The total number of deaths from specified diseases (which excludes burns and scalds, casualties, drowned, homicide, old age and suicide), was 21,116, which is equivalent to a death rate of 17.39, or one death in every 57.50 of the population. As such deaths have no relation to the healthfulness of a locality they should be eliminated in making up the general death rate.

A table showing the principal causes of death, during the year 1897, with the increase or decrease of each disease as compared with the year 1896, will be found in the Appendix.

The total number of births reported during the year amounted to 29,591, a decrease of 162 over the previous year, and is equivalent to a rate of 24.37 per 1,000, or, at the rate of one birth in each 41.03 persons living.

The number of marriages reported during the year was 7,693, or 15,386 persons married. The marriage rate per 1,000 for the year was 12.67, or one person married in each 78.92 of the population.

There still exists great difficulty in collecting marriages. The law requires that all marriages performed in the City shall be reported to the Orphans' Court, and also to the Board of Health. In many instances persons performing this ceremony, through ignorance or neglect of the requirement, report to one office only, and thus it is almost impossible to have accurate marriage records. As the law is an old one and affects only a limited class, it seems strange that these persons should not acquaint themselves

with it, particularly when accurate records of this important ceremony are so valuable to the community.

Deaths, exclusive of still and premature births	22,735
Still births	1,168
Premature births	770
Living births	27,653
All births, including still and premature births	29,591

The following table shows the death-rate, the number of deaths, and the population for each of the past fourteen years:

Year.	Population.	Deaths.	Deaths to 1,000 living persons.	Persons living to one death.
1884	927,995	19,999	21.55	46.40
1885	949,432	21,392	22.53	44.38
1886	971,363	20,005	20.59	48.55
1887	993,801	21,719	21.85	45.75
1888	1,016,758	20 372	20.04	49.90
1889	1,040,245	20,536	19.74	50.65
*1890	1,046,964	21,782	20.76	48.18
1891	1,069,264	23.367	21.85	45.75
1892	1,092,168	24,305	22 25	44.93
1893	1,115,562	23,655	21.20	47.15
1894	1,139,457	22,680	19.90	50.24
1895	1.163,864	23,797	20.44	48.90
1896	1,188,793	23,982	20.17	49.57
1897	1,214,256	22,735	18 72	53.40

* U. S. Census. Intervening years estimated by ratio of increase between census years 1880 and 1890.

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Whole number of inquests		2,145
Male	1,387	
Female	758	
White	1,904	
Colored	238	
Mongolian	3	
Post-mortems	489	
Removals	380	
Burials	187	

Unknown.

Male	35	
Infants	63	

Causes of Death.

Heart disease	152	
Injuries—various causes	402	
Alcoholism	21	
Apoplexy	68	
Burns and scalds	115	
Abortions	17	
Accidental suffocation	29	
Heat exhaustion	9	
Accidental inhalation of gas	14	
Accidental gunshot wound	1	
Suffocation from smoke	5	
Accidental poisoning	17	
Inhalation ether during operation	4	
Septicaemia	2	
Electric shock	5	
Carbolic acid	10	
Nitrate of mercury	1	
Cyanide potassium	1	
Throwing self from window	5	
Morphia	1	
		150

Analysis of Homicides.

Strangulation	1	
Stab wounds	5	
Gunshot wounds	12	
Fracture of skull	1	
Hemorrhage of brain	5	
Knocked overboard	1	
Injuries	5	
Poisoning by illuminating gas	2	
Inflammation of brain	1	
Infanticide	1	
		34

Accidental drowning	88
Accidental strangulation	1
Found drowned	4
Found dead	15
Steam railroads	124
City passenger railways	21

Suicides	150	
Homicides	34	
Infanticide	1	
		1,299
Other causes		846
Total		2,145

Analysis of Rail-road Accidents.

Pennsylvania	67	
Philadelphia and Reading	46	
Baltimore and Ohio	10	
Belt Line	1	
		124

City Passenger Railways.

Union Traction	17	
Holmesburg, Tacony and Bristol	1	
Hestonville and Mantua	2	
Delaware County Electric	1	
		21

Analysis of Suicides.

Shooting	40	
Hanging	38	
Cutting throat	12	
Drowning	4	
Illuminating gas	18	
Laudanum	7	
Opium	3	
Rough on rats	1	
Paris Green	5	
Arsenic	4	
		132

There were 6,329 interments classed as intramural, that is in cemteries located in the midst of or contiguous to the thickly populated and built-up portions of the City. The practice of burying in these cemeteries has been often condemned and the Board is now considering the advisability of closing them to further interments, and it is thought that action upon this question will be taken in the early part of 1898.

A resolution was adopted on May 25, 1897, prohibit-

ing the burial of bodies in any burial vault under the Parish House of Christ Church, Second above Market street, for the reason that the Parish House is used constantly by hundreds of children and other persons, and this practice was deemed prejudicial to their health.

The number of complaints of nuisances amounted to 21,576, of which 1,723 were anonymous. There were 18,678 complaints well founded, and 3,606 were dismissed as "no nuisance." The number of nuisances abated without formal notice was 749, and those abated by owners upon due notice amounted to 14,443. Two thousand seven hundred and eighty (2,780) nuisances were returned "not complied with," and referred to the Health Officer for abatement.

The usual house-to-house inspections were conducted during the year and disclosed a better observance of sanitary laws in the sections visited. These inspections covered 16,572 premises.

Inspections were made of slaughter houses, cemetery vaults, lodging houses, etc., and the results thereof are detailed in the report of the Chief Inspector of Nuisances, to be found in the Appendix.

Legislation providing for the establishment and regulation of well appointed abattoirs and compelling the slaughtering of all cattle prepared for the market thereat, should be enacted. This method would not only insure the preparation of meats in establishments properly equipped for the purpose, but would reduce to a minimum the possibility of the flesh of animals unfit for human consumption reaching the market, for the reason that almost all cattle could be killed under the eyes of the proper officers.

As will be found in the reports of the Board of Health for many years back great efforts have been made to rid the City of nuisances caused by the keeping of hogs and

the feeding of garbage thereto. In most part these efforts have been successful, but there still exist many persons in the lower section of the City who persist in violating the orders of the Board by keeping these animals and feeding garbage to them. That citizens will not be entirely rid of such nuisances until some of these offenders are treated to a harsh lesson by the Courts, no one doubts, as all the powers vested in this Board have been used over and over again, with the one result, that the hog goes out one day only to come back the next.

On December 17, 1897, a number of persons were arrested on the charge of keeping hogs in violation of the orders of the Board of Health and were subsequently indicted by the Grand Jury. The result of this last effort to rid the City of this great evil is awaited with much anxiety.

A bakeries inspection law, entitled "An Act to regulate the manufacture of flour and meal food products," was approve on May 27, 1897, and the Factory Inspectors are charged with the enforcement thereof in almost every particular. This legislation has been of much benefit in improving the sanitary condition of bakeshops and the House Drainage Division has approved many plans during the year for new drainage systems in such establishments.

In the case of Adams *vs.* Boardof Health, C. P. No. 1, September Term, 1895, No. 678, in equity, wherein it was sought by injunction to restrain the defendant from filling up a privy-well in order to abate a nuisance caused thereby, on the ground that it was not in its power to do more than clean the well, we have to report that the Superior Court, to which an appeal was taken from the decision of the lower Court dismissing the bill for an injunction, held:

"The Board of Health in Philadelphia has final jurisdiction in determining the fact of the nuisance which it

orders to be removed. A privy well may or may not be a nuisance per se according to the circumstances, and the Board of Health has power to determine the character of such wells and to bring the necessary things to be done in order to prevent its becoming or remaining a nuisance. If cleaning the well dose not abate the nuisance, the Board may take the next step and order the well to be filled up." This case is reported in 3 Pa., Superior Court Reports, 239.

On March 16, 1897, the Sanitary Committee called the attention of the Board to the so-called "smoke nuisance," caused by the discharge into the atmosphere of a very large quantity of smoke from the chimneys of industrial establishments, etc. On the same date a resolution was adopted, requesting the Franklin Institute to appoint a committee to confer with the Board of Health, with a view of taking action to abate or modify this nuisance. The Franklin Institute promptly complied with the request, and several public meetings were held, at which the subject was discussed. The proceedings of these meetings are contained in a pamphlet issued by the Institute.

On April 13, 1897, the Board adopted the following:

"WHEREAS, The habit of spitting in frequented public places, particularly when such places are enclosed, is not only uncleanly and unnecessary, but prejudicial to health.

"AND WHEREAS, It is proved that certain diseases, as consumption, are mostly propagated by dried expectoration, and for this reason alone the habit should be condemned. It is therefore,

"*Resolved*, That City Councils be respectfully requested to co-operate with the Board of Health in their endeavors to restrict, if not prevent, this pernicious habit, and they are hereby earnestly solicited to pass the following ordinance, not only to promote cleanliness, but to safeguard the public health."

"AN ORDINANCE.

"Forbidding spitting in public buildings and passenger railway cars.

"WHEREAS, Spitting in public buildings and passenger railway cars has been declared by boards of health of different cities in the United States to be prejudicial to the health of the people who visit such buildings or ride in such cars.

"AND WHEREAS, This practice is not only unhealthy, but uncleanly, offensive and filthy, and injurious to wearing apparel, especially of women, and therefore a common nuisance, therefore,

"SECTION 1. The Select and Common Councils of the City of Philadelphia do ordain, That spitting upon the floors of public buildings and of passenger railway cars is hereby declared to be a nuisance, and prejudicial to health, and is hereby prohibited, under a penalty of five (5) dollars for each and every offence, to be recoverable as penalties of like amount are by law recoverable."

While City Councils have taken no definite action in this matter, yet the street railway companies have prohibited the practice in their cars, and the large railway depots within the City contain notices warning persons that spitting will not be tolerated therein.

The public schools have been inspected during the year by the Medical Inspector and his assistants, and the result thereof is detailed in the Appendix.

Many defects have been pointed out and it is believed they will receive the prompt attention of the Board of Education.

There were reported during the year 5,031 cases of diphtheria; 374 cases of membraneous croup; 3,553 cases of scarlet fever, and 2,994 cases of typhoid fever. There were 1,840 more cases of diphtheria reported in 1897

than during the previous year; 2,511 more cases of scarlet fever, and 505 more cases of typhoid fever. A decrease of 30 cases is noted in the returns of membraneous croup over that of 1896.

The Disinfecting corps performed 8,275 disinfections during the year.

The officer employed for the purpose of administering antitoxin and practicing intubation presents a report of his work for the year which will be found in the Appendix. The services of this officer are offered gratuitously in all cases where they are requested. The antitoxin used is prepared by the Bacteriological Division of the Bureau.

Exhibit of the Number of Successful Vaccinations Performed during the year 1897.

District.	Physicians.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
1	J. S. Gillespie	114	390	.....	510	1,014
2	W. S. M. Field	134	891	309	291	1,625
3	G. A. Knowles	196	342	250	101	889
4	H. B. Baxter	76	135	195	161	567
5	L. H. Horter	35	112	22	14	183
6	Edw. H. Green	37	52	.....	280	369
7	M. O.Hara, Jr	.....	.....	30	38	68
8	P. N. K. Schwenk	69	.....	.....	.....	69
8	J. A. Fischer	.....	59	228	113	400
9	C. P. Franklin	69	113	145	103	430
10	S. N. Troth	297	374	.....	.....	671
10	F. O. Gross	.....	.....	.....	193	193
11	L. C. Peter	29	136	131	108	404
12	J. A. Krug	140	46	180	39	405
13	David Henry	240	.....	360	130	730
14	Robert Rodgers	270	540	274	359	1,443
15	S. Lewis Summers	128	.....	274	112	514
16	Laura S. Chapin	.....	114	.....	103	217
17	J. A. Cramp	.....	342	215	73	630
18	A. M. Davis	53	76	114	107	350
19	Ross R. Bunting	67	.....	.....	355	422
20	T. H. Price	.....	157	.....	270	427
21	W. C. Barrett	250	314	315	258	1,137
22	J. Roberts Bryan	135	68	110	139	452
23	Charles H. Harvey	35	39	476	88	638
	Totals	2,374	4,300	3,628	3,945	14,247

The following table shows the number of vaccinations performed in each year from 1860 to 1897, both inclusive; also the average number per year:

Years.	Cases.	Years.	Cases.
1860	5,313	1879	12,111
1861	9,251	1880	26,415
1862	4,206	1881	25,541
1863	4,028	1882	14,628
1864	4,809	1883	8,553
1865	5,652	1884	6,590
1866	3,556	1885	9,448
1867	6,189	1886	10,570
1868	5,207	1887	12,048
1869	6,650	1888	28,605
1870	7,190	1889	9,344
1871	30,526	1890	10,542
1872	18,198	1891	12,500
1873	5,685	1892	10,878
1874	7,187	1893	17,102
1875	9,338	1894	30,400
1876	17,929	1895	30,284
1877	12,410	1896	18,364
1878	9,196	1897	14,247

Average vaccinations per year, 12,584.

The following table shows the number of deaths from Small-pox from 1807 to 1897, inclusive; also, the death-rate per 1,000 persons living:

Years.		Deaths.	Deaths to 1,000 persons living.	Years.		Deaths.	Deaths to 1,000 persons living.
1807	Pop. 111,210.	32	.28	1856	Pop., 564,529.	390	68
1808		145	1.28	1857		65	.11
1809		101	.90	1858		7	.01
1810		34	.30	1859		2	.003
1811		117	1.04	1860		57	.10
1812		.....	.....	1861		758	1.34
1813		.....	.....	1862		264	.46
1814		.....	.....	1863		171	.30
1815		.....	.....	1864		260	.45
1816	Pop., 187,097.	97	.77	1865		524	.92
1817		52	.30	1866	Pop., 674,022.	144	.21
1818		8	.05	1867		48	.07
1819		1	.....	1868		48	.07
1820		.....	.....	1869		6	.008
1821		.....	.....	1870		9	.01
1822		.....	.....	1871		1,879	2.78
1823		160	1.16	1872		2,585	3.83
1824		325	2.37	1873		39	.05
1825	Pop., 188,797.	6	.04	1874		15	.02
1826		3	.01	1875		54	.08
1827		100	.52	1876	Pop. 846,980.	407	.45
1828		107	.56	1877		155	.17
1829		81	.42	1878		.....	.....
1830		86	.45	1879		6	.006
1831		14	.07	1880		424	.05
1832		37	.19	1881		1,336	1.57
1833		156	.82	1882		314	0.3
1834		195	1.03	1883		173	0.02
1835		101	.53	1884		35	0.04
1836	Pop., 268,034	76	.33	1885		6	0.003
1837		79	.34	1886	Pop., 1,046,964.	4	0.003
1838		42	.16	1887		.....	.....
1839		5	.01	1888		80	0.074
1840		63	.24	1889		.....	.....
1841		259	1.00	1890		.....	.....
1842		156	.60	1891		5	0.004
1843		36	.13	1892		.....	.....
1844		17	.06	1893		5	0.004
1845		190	.73	1894		13	0.011
1846		251	.61	1895		45	0.3 8
1847	Pop., 408,762.	9	.02	1896		.....	.....
1848		100	.24	1897		.....	.....
1849		152	.37				
1850		40	.09				
1851		216	.52				
1852		427	1.04				
1853		57	.13				
1854		40	.09				
1855		275	.67				

The Division of House Drainage has just closed the twelfth year of its existence and a recapitulation of the work performed in those years is herewith submitted. The table which follows shows the old and new plans for house drainage submitted and approved during the twelve years, 1886 to 1897, inclusive:

1886	5,527	1892	12,388
1887	9,384	1893	17,231
1888	10,274	1894	22,201
1889	10,498	1895	17,867
1890	10,278	1896	15,825
1891	10,252	1897	13,820

Of the number of plans submitted and approved during 1897, 6,383 were for new and 7,437 for old buildings.

The number of plumbers registered at the close of the year was 885.

The number of quarts of milk inspected in 1897 was 545,873, an increase of 140,903 quarts over the year 1896. Of these 8,285 quarts or 1.52 per cent. were condemned for adulteration with water, 4,695 quarts or 0.86 per cent. were skimmed, and 31 quarts were colored.

The following table shows the percentage of adulterated milk in each year:

1892	11.15 per cent.
1893	6.00 " "
1894	3.82 " "
1895	4.29 " "
1896	3.81 " "
1897	2.38 " "

There were 56 prosecutions during the year and true bills found by the Grand Jury in every case. Eighteen (18) defendants pleaded guilty, three were convicted, two discharged by the magistrate, and 31 cases are pending. Two of the defendants convicted were sentenced to jail for one month in addition to fine, and one to six months' imprisonment.

The Superior Court affirmed the verdict and judgment of the Court of Quarter Sessions (Judge Hare) in the case of Commonwealth *vs.* Hufnal. In this case "separator" milk was being sold as skim milk.

The report of the Chief Inspector of Milk detailing the work of his division for the year will be found in the Appendix.

During 1897 the Chemical Laboratory devoted much time to water analysis, especially to that of the City supply. A special assistant was employed to make these tests under the direction of the Water Bureau.

It is recommended that a room, fitted up especially for water analysis, and containing the best natural light, be set apart for this purpose.

The Chemist's report will be found in the Appendix.

Municipal Hospital.

The number of patients admitted to this institution annually has greatly increased during the past few years. There were more admissions to the Hospital in 1897 than during any other year of its existence, and this cannot be attributed to any material increase in the number of cases of infectious diseases throughout the City. It is due, no doubt, to the greater popularity of the Hospital. There the patients receive the best treatment and care, and the public are beginning to realize that this is an institution to be sought rather than feared by those whose conditions render them subjects for admission thereto.

As before stated the number of admissions in 1897 was greater than in any other year in the history of the hospital. For example, there were admitted in 1890, 52 patients; in 1891, 127; in 1892, 480; in 1893, 524; in 1894, 810; in 1895, 1,191; in 1896, 1,252; and in 1897, 2,179.

1,295 of the patients admitted during the year suffered

from diphtheria, and of these 300 died—a death rate of 23.16 per cent. There were 858 patients who suffered from scarlet fever admitted, and of this number 99 died —a death rate of 11.53 per cent.

In 1893 there was a pavilion erected upon the grounds which was set aside for the exclusive use of diphtheria patients. At that time it was thought that this building would answer the object of its erection for many years to come. It was soon found however, that more room was required, and in 1897, a much-needed annex was completed. This enlarged building, while not an expensive structure, is admirably adapted to its purpose. No elaborate furnishings are within, yet everything suited to such an hospital is provided.

The original buildings, or main hospital, were erected in 1865 and since that time no improvements of importance have been added and few repairs made. Much is needed, therefore, to bring them up to the modern standard of efficiency. They are now partly heated by an old-fashioned heater in the cellar and partly by stoves. But it is gratifying to announce that provision has already been made to introduce improved heating facilities.

Attention is here called to some of the more important improvements, all badly needed, referring you to the report of Dr. William M. Welch, Physician-in-Charge, contained in the Appendix, for a detailed account thereof.

The main building should be thoroughly modernized. Additional dining rooms, dormitories, etc., for the employees ought to be provided; more bath rooms are required; the entire water closet system needs changing, and private rooms for pay patients should be added.

The laundry is inadequate in every particular, washing being done on old-fashioned washboards and the ironing by a method as thoroughly antiquated.

The employees are compelled to harness and unharness

horses in full exposure to the weather for want of a proper shed for this purpose.

A building is much needed for caring for the dead. At present a dilapidated building, located in Potter's Field, is used for this purpose.

A competent pharmacist is needed to compound prescriptions, the time of the resident physicians being too valuable to be taken up with such work; and, besides, it is doubtful whether any one other than a properly qualified graduate of pharmacy, who has passed a successful examination, in accordance with a State law, is competent to perform this service.

A clerk, having a knowledge of stenography and typewriting, is also badly needed, to relieve the medical staff of another duty which is now only partially performed on account of the tax made upon their services by legitimate work. The records and statistics of this institution are of the greatest scientific value, and it will be readily seen that a great amount of labor is necessary to have them accurate and in such shape that they may be promptly referred to. It is, therefore, of the utmost importance that clerical service be provided.

It is hoped that City Councils will see the importance of providing funds for making the improvements which Dr. Welch has outlined. As shown above, the population of the hospital has greatly increased within the past few years and there is no doubt that it will continue so to do in proportion to the increase in population of the City. Should an epidemic occur, no provision would have been made in the way of hospital facilities, to meet it, for today the capacity of the Municipal Hospital is being taxed to its utmost.

An interesting report upon the results of the use of antitoxin in the Hospital is made by Dr. Welch and will be found in the Appendix.

The work of the Bacteriological Division consisted mainly in the examination of cultures from cases of diphtheria and suspicious inflammations of the throat and nose, etc., and of the application of the so-called Widal test in the diagnosis of typhoid fever, which latter method was introduced on March 15, 1897. The results of the work of this Division are contained in the report of Dr. Abbott, contained in the Appendix.

This Division has prepared all the antitoxin of diphtheria that has been used in the Municipal Hospital and by the special physician employed to administer the same to patients who are too poor to purchase it.

Table showing the number of permits issued to clean privy-wells during the year 1897.

Months.	Number.	Amount.	Months.	Number.	Amount.
January	353	$208 00	August	1,140	$683 50
February	422	238 50	September	899	538 50
March	911	518 50	October	506	362 50
April	1,196	692 50	November	489	293 50
May	1,248	730 50	December	541	337 00
June	1,350	805 50			
July	1,480	882 50	Total	10,535	$6,291 00

There were twenty-five companies or persons licensed to clean privy wells during the year 1897, from each of which fifty (50) dollars was received for license, making the revenue from this source one thousand two hundred and fifty (1,250) dollars.

Table showing the number of permits issued to construct systems of house drainage during the year 1897.

Months.	Number.	Amount.	Months.	Number.	Amount.
January	234	$234 00	August	1,558	$1,558 00
February	198	198 00	September	1,461	1,461 00
March	981	981 00	October	1,424	1,424 00
April	1,588	1,588 00	November	1,206	1,206 00
May	1,352	1,352 00	December	568	568 00
June	1,764	1,764 00			
July	1,471	1,471 00	Total	13,805	$13,805 00

The following are the receipts for the year 1897:

Permits to clean privies	$6,287 00
House-drainage permits	13 826 00
Dead permits	1,513 00
Certified copies	589 50
Permits to land fish, hides, etc	41 50
Licenses to clean privy wells	1,666 75
Disinfecting at hospital	120 70
Repayment of costs	10,737 41
Board of patients	462 00
Miscellaneous	41 72
Total	$35,285 58

The following are the amounts paid into the City Treasury in each month of the year, 1897:

January	$1,491 44
February	1,123 56
March	2,290 71
April	3,171 11
May	4,050 45
June	3,759 57
July	3,687 46
August	3,645 02
September	3,845 83
October	3,557 73
November	2,735 91
December	1,926 79
Total	$35,285 58

A full statement of the various operations of each Division of the Board of Health will be found in the Appendix.

By order of the Board of Health,

A. A. HIRST,
President.

J. LEWIS GOOD,
Secretary.

APPENDIX

TO THE

REPORT

OF THE

BOARD OF HEALTH

OF THE

CITY AND PORT OF PHILADELPHIA

FOR THE YEAR 1897.

REPORT

OF THE

REGISTRATION DIVISION

BOARD OF HEALTH

Summary of Vital Statistics.

Philadelphia, January 4, 1898.

To the President and Members
of the Board of Health.

GENTLEMEN:—I have the honor to submit a summary of the operations of this Division of the Bureau of Health, for the year ending December 31, 1897.

The number of deaths during the year, exclusive of still and premature births, amounted to twenty-two thousand seven hundred thirty-five (22,735), a decrease of one thousand, two hundred forty-seven (1,247) from the previous year.

The death rate per 1,000 population, from all causes, was 18.72, or 1 death in each 53.40 living persons.

The number of births collected during the year amount to twenty-nine thousand nine hundred and twenty-five (29,925), an increase of one hundred and seventy-two (172) over the previous year.

Marriages so far reported number 7,793.

The population, estimated to the middle of 1897, 1,214,-256.

The following table shows the principal causes of death during the year, with the increase or decrease of each disease as compared with the previous year:

		Increase.	Decrease.			Increase.	Decrease.
Abscess	111	.....	1	Fever, typhoid	401	.....	1
Alcoholism	47	.....	17	Homicide	20	.....	16
Apoplexy	798	.....	26	Inanition	523	.....	80
Bright's disease	468	5		Influenza	160	81	
Burns and scalds	116	.....	21	Inflammation of brain	614	.....	74
Cancer	688	12		Inflammation of bronchi	473	.....	55
Casualties	433	.....	63	Inflammation of lungs	2,723	18	
Cholera Infantum	822	.....	304	Inflammat'n of peritoneum	261	.....	41
Congestion of brain	162	.....	5	Inflammation of stomach and bowels	624	.....	139
Congestion of lungs	149	.....	44	Marasmus	765	.....	168
Convulsions	670	.....	122	Measles	64	.....	127
Consumption of lungs	2,388	.....	126	Old age	814	.....	12
Croup	40	.....	6	Paralysis	349	.....	1
Croup, membraneous	243	.....	50	Rheumatism	72	.....	16
Debility	148	.....	81	Sunstroke	22	.....	217
Diarrhoea	87	.....	34	Suicide	143	8	
Diphtheria	1,231	.....	369	Teething	90	.....	23
Disease of heart	1,297	.....	108	Tumors	118	.....	18
Drowned	93	5		Uraemia	343	1	
Dysentery	90	.....		Whooping cough	271	113	
Erysipelas	71	15		Premature births	770	.....	5
Fever, malarial	18	1		Still-born	1,168	.....	127
Fever, scarlet	282	221					

NATIVITIES.

United States	17,122	White	21,569
Foreign	5,042	Black	1,166
Unknown	571		

Deaths in each Ward during the year 1897.

Ward.	Deaths.	Ward.	Deaths.
First	1,368	Twenty-first	464
Second	706	Twenty-second	937
Third	545	Twenty-third	471
Fourth	440	Twenty-fourth	852
Fifth	356	Twenty-fifth	867
Sixth	153	Twenty-sixth	776
Seventh	737	Twenty-seventh	*1,287
Eighth	336	Twenty-eighth	639
Ninth	155	Twenty-ninth	1,013
Tenth	413	Thirtieth	603
Eleventh	229	Thirty-first	576
Twelfth	260	Thirty-second	494
Thirteenth	276	Thirty-third	1,017
Fourteenth	377	Thirty-fourth	580
Fifteenth	969	Thirty-fifth	252
Sixteenth	313	Thirty-sixth	840
Seventeenth	384	Thirty-seventh	351
Eighteenth	687	Thirty-eighth	331
Nineteenth	1,014		
Twentieth	717	Total	22,735

*Includes deaths in Almshouse, 513.
Includes deaths in St. Vincent's Home, 136.

Deaths from Typhoid Fever with the ratio per 100,000 of population, for the 18 years, 1880–1897, inclusive.

Years.	Deaths.	Ratio per 100,000.
1880	498	58.7
1881	645	74.3
1882	650	74.4
1883	579	63.8
1884	662	71.3
1885	610	64.2
1886	618	63.6
1887	621	62.4
1888	785	77.2
1889	736	70.7
1890	666	63.6
1891	683	64.0
1892	440	40.2
1893	456	40.8
1894	370	32.4
1895	469	40.2
1896	402	33.81
1897	401	33.02

Table showing the number of deaths in each division of age during the year 1897.

Under 1 year	4,657	40 to 50 years	1,992
1 to 2 years	1,317	50 to 60 years	2,939
2 to 5 years	1,631	60 to 70 years	2,304
5 to 10 years	931	70 to 80 years	1,952
10 to 15 years	350	80 to 90 years	836
15 to 20 years	537	90 to 100 years	153
20 to 30 years	1,923	100 to 110 years	11
30 to 40 years	2,072	Total	22,735

Table showing the number of births, marriages and deaths reported during the year, with the number of searches made and permits issued:

Visits made by collectors of vital statistics	25,850
Births collected, including some for 1896.	29,925
Marriages reported	7,793
Permits issued for interments	26,415
Permits issued for disinterments	3,013

Searches of Records.

Pension cases	2,281
Paid transcripts	1,192
Miscellaneous	3,013
Total	6,486

Table showing the number of permits issued, day and night, holidays and week-days, between January 1, 1897 and January 1, 1898.

Week-Days.

Between 9 A. M. and 4 P. M.	25,562
Between 7 A. M. and 8 P. M.	298

Sundays, Saturdays and Holidays.

From January 1 to June 1, 1897:

9 to 10 A. M.	125
6 to 7 P. M.	58

From June 1 to December 31, 1897:

9 A. M. to 1 P. M.	228
2 to 6 P. M.	45

The following table shows the number of permits issued for the interment of dead bodies in each month of the year, viz:

January	2,323	August	1,917
February	2,471	September	1,781
March	2,353	October	2,126
April	2,720	November	1,696
May	1,980	December	2,450
June	2,390	Total	26,415
July	2,208		

The following table shows the fees received for disinterment permits, and transcripts of records during 1897:

Disinterment permits		$1,506 50
Transcript of records—Births	$63 00	
" " " —Marriages	33 50	
" " " —Deaths	499 50	
		596 00
Total revenues for 1897		$2,102 50

Disinterment Permits issued in each Month of 1897.

Months.	Number.	Amount.	Months.	Number.	Amount.
January	214	$107 00	August	90	$45 00
February	222	111 00	September	97	48 50
March	405	202 50	October	287	143 50
April	550	275 00	November	315	157 50
May	320	160 00	December	261	130 50
June	140	70 00			
July	112	56 00	Total	3,013	$1,506 50

Mortality of children under five years of age in Philadelphia, from 1871 to 1897, inclusive.

(Still-born not included.)

Years.	Deaths under five years.	Percentage of deaths to population.	Percentage of deaths to total mortality.	Total mortality.
1871	6,262	.88	40.43	15,485
1872	8,320	1.13	43.82	18,987
1873	6,260	.83	41.11	15,224
1874	6,231	.80	40.89	15,238
1875	7,371	.92	41.39	17,805
1876	7,632	.92	40.39	18,892
1877	6,417	.75	40.09	16,004
1878	5,985	.68	38.01	15,743
1879	5,524	.61	35.70	15,473
1880	6,594	.77	38.53	17,111
1881	7,124	.82	36.50	19,515
1882	7,254	.81	36.16	20,059
1883	7,417	.81	37.07	20,006
1884	7,606	.80	38.08	19,999
1885	8,188	.86	38.27	21,392
1886	7,351	.75	36.74	20,065
1887	8,421	.85	38.77	21,719
1888	7,268	.72	35.67	20,372
1889	7,752	.74	37.74	20,536
1890	7,912	.75	36.40	21,733
1891	8,479	.79	36.28	23,367
1892	9,199	.84	37.84	24,305
1893	8,690	.77	36.73	23,655
1894	8,431	.74	37.17	22,680
1895	8,401	.72	35.30	23,797
1896	8,661	.72	36.11	23,982
1897	7,605	.62	33.45	22,735

Table showing the deaths from some of the principal causes for each of the seventeen years, 1881–1897.

Diseases.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Consumption of Lungs	2,768	2,809	2,798	2,801	2,821	2,834	2,800	2,697	2,532	2,760	2,624	2,709	2,671	2,513	2,449	2,514	2,388
Cholera Infantum	902	871	878	775	971	688	891	835	838	918	1,211	1,292	1,217	1,176	1,126	1,126	822
Diphtheria	457	933	1,206	680	600	411	416	350	375	528	918	1,435	916	1,047	1,020	862	1,231
Disease of Heart	615	677	726	748	829	769	863	820	820	1,211	1,325	1,400	1,461	1,276	1,424	1,405	1,297
Fever, scarlet	486	310	561	540	375	248	159	235	298	189	341	485	267	153	79	61	282
Fever, typhoid	645	650	579	662	610	618	621	783	736	666	684	440	456	370	469	402	401
Influenza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	147	304	265	139	311	229	79	160
Inflammation of bronchi	386	407	373	376	464	441	419	348	387	524	539	618	566	480	550	528	478
Inflammation of lungs	997	1,247	1,282	1,253	1,519	1,456	1,703	1,548	1,582	2,026	2,111	2,209	2,255	2,142	2,582	2,696	2,723
Old age	737	824	767	795	934	753	795	1,050	850	817	805	856	798	725	939	810	814

*Comparative Statement of the Death-rate of Cities of the United States and Europe, for the eleven years, 1880–1890.**

Cities.	Census 1880.	Death-rate per 1,000 of Population in the following years.											Population, Census of 1890.
		1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	
Philadelphia	846,980	20.91	22.48	22.62	22.13	21.55	22.53	20.59	21.85	20.04	19.74	20.76	1,046,964
New York	1,209,268	26.41	31.00	29.5	25.7	25.7	25.4	25.8	26.1	26.2	25.1	24.6	1,515,301
Chicago	503,185	20.79	25.60	23.60	19.92	19.80	18.76	19.43	20.27	19.06	17.48	18.22	1,099,850
Boston	362,839	23.53	22.67	21.91	22.76	22.48	24.04	23.17	25.18	24.57	24.42	22.70	448,477
Baltimore	332,313	24.33	22.37	21.81	22.93	20.27	19.55	19.98	19.16	17.87	17.40	22.41	434,439
Brooklyn	566,660	19.75	23.22	23.07	20.36	20.18	21.18	21.04	22.02	22.01	22.14	23.05	806,343
New Orleans	216,090	26.02	29.26	26.71	33.50	31.43	28.50	26.43	25.02	25.41	23.92	28.50	242,039
St. Louis	350,000	18.9	22.7	19.6	20.4	19.7	18.7	20.6	21.8	20.49	17.78	18.45	460,367
San Francisco	233,969	.....	23.09	25.36	22.81	21.86	21.00	22.18	17.63	18.63	20.06	28.50	298,997
Cincinnati	255,739	18.49	21.78	24.54	21.12	20.33	18.37	18.98	19.97	18.44	18.22	19.81	296,908
Providence, R. I.	104,857	19.81	19.56	19.6	19.89	19.00	18.33	19.62	21.50	21.30	19.76	21.77	†148,944
London	3,894,000	21.6	21.3	21.5	20.8	20.9	20.4	20.6	20.3	19.3	18.4	21.4	4,024,691
Paris	2,269,000	25.32	24.6	25.3	24.3	24.4	23.4	24.4	22.5	21.9	23.0	23.3	2,424,705
Berlin	1,122,400	29.6	27.29	25.92	28.92	26.33	24.38	25.63	21.84	20.30	23.0	21.53	1,330,080
Vienna	.....	.....	25.4	25.3	24.3	23.1	24.8	23.2	22.3	21.9	21.4	21.4	1,103,857

* The figures for Philadelphia, excepting 1880 and 1890, which are the census years, are accurately estimated on the ratio of increase of population, based on the census years of 1880 and 1890. The figures for the other cities were furnished by the Statistical Bureaus of those cities.
† Estimated.

Intramural Interments during 1897.

Cemetery.	No.	Location.
Glenwood	743	Ridge avenue and Islington lane.
Odd Fellows'	456	Twenty-third and Diamond streets.
U. A. Mechanics'	293	Twenty-second and Diamond streets.
Monument	196	Broad and Diamond streets.
Lafayette	116	Federal street, above Ninth street.
Palmer Ground	177	Palmer and Belgrade streets.
*Macphelah & M. E. Union		Tenth street and Washington avenue.
Union, Sixth street	58	Sixth street and Washington avenue.
†St. Joseph's (R. C)		Eighth street and Washington avenue.
St. Peter's (R. C.)	267	Tioga and West streets.
St. Ann's (R. C.)	100	Lehigh avenue and Memphis street.
St. Mary's (R. C.)	822	Eleventh and Moore streets.
St John's (R. C.)	3	Thirteenth street, above Chestnut street.
St Paul's (M. E.)	6	Christian street, above Sixth street.
Philanthropic	57	Twelfth and Dickinson streets.
St. Michael's	5	Second and Jefferson streets.
Kensington (M. E.)	65	Hanover street.
Union Harmony	33	Hanover street.
Ebenezer (M. E.)	15	Christian street, below Fourth street.
Holy Trinity		Seventh street and Passyunk avenue.
Mutual Family	4	Washington avenue, above Ninth street.
Trinity (P. E.)	4	Catharine street, above Second street.
Union Wesleyan	156	Hanover street.
Friends'		Sixteenth and Race streets.
St. John's (M. E.)	3	Third street, below Beaver street.
Ronaldson	21	Ninth and Bainbridge streets.
Jewish, Federal street	8	Federal street, above Eleventh street.
St. Augustine (R. C.)	7	Fourth street, below Vine street.
Mt. Zion	227	Sixth and Christian street.
Baptist Church		Passyunk avenue, west of Broad street.
Arabella	5	Fifth and Washington streets.
Arch Street Friends		Fourth and Arch streets.
Arch Street Presbyterian		Arch street, above Tenth street.
Axe's	2	Germantown avenue and Washington street.
Christ Church	3	Fifth and Arch streets.

Intramural Interments during 1897—Continued.

Cemetery.	No.	Location.
Colored M. E. Church	.....	Centre and Morton streets.
Dunkard's Ground	7	Germantown avenue and Sharpnack street.
Epiphany (abandoned)	.....	Fifteenth and Chestnut streets.
Franklin	172	Franklin Lane.
First Presbyterian Ground	1	Fourth and Pine streets.
Free Quakers	.....	Fifth and Spruce streets.
Fair Hill	35	Cambria and Germantown avenue.
Haines Street (M. E.)	.....	Germantown avenue and Haines street.
Hebrew	.....	Spruce, below Ninth street.
Holy Comforter	.....	Nineteenth and Wharton streets.
Holy Trinity (1)	.....	Sixth and Spruce streets.
Holy Trinity (2)	.....	Fifth and Spruce streets.
Market Square	4	Germantown avenue.
Olive	287	Girard and Belmont avenues.
Presbyterian	3	Frankford.
Rose's	.....	Ludlow street.
St. John's (R. C.)	104	Manayunk.
St. Joachim's	3	Frankford.
St. Luke's	1	Thirteenth, below Spruce street.
St. Mary's (R. C.)	1	Fourth, above Spruce street.
St. Michael's (Lutheran)	21	Germantown.
St. Peter's	9	Third and Pine streets.
St. Paul's (M. E.)	7	Christian, above Sixth street.
St. John's (M. E.)	3	Third, below Beaver street.
Swedes, P. E., (Gloria Dei)	4	931 Otsego street.
Third Presbyterian	.....	Fourth and Pine streets.
Wharton Street (M. E.)	30	
Cathedral	1,778	Forty-eighth and Lancaster avenue.
Total	6,329	

* Receiving vault only, the cemetery having been abandoned.
† Interments prohibited since August 29, 1893.

Respectfully submitted,

J. V. P. TURNER,

Chief Registration Clerk.

ANNUAL REPORT

OF THE

MEDICAL INSPECTOR

DIVISION OF CONTAGIOUS DISEASES.

For the year 1897.

Philadelphia, December 31, 1898.

LT. COL. J. LEWIS GOOD,
Secretary, Board of Health

DEAR SIR:—I have the honor to report five thousand and thirty-one (5,031) cases of diphtheria; three hundred and seventy-four (374) cases of membraneous croup; three thousand five hundred and fifty-three (3,553) cases of scarlet fever and two thousand, nine hundred and ninety-four (2,994) cases of typhoid fever were reported to this office during the year 1897.

There was an increase of one thousand eight hundred and forty (1,840) cases of diphtheria, two thousand five hundred and eleven (2,511) cases of scarlet fever, five hundred and five (505) cases of typhoid fever, and a decrease of thirty (30) cases of membraneous croup from the returns of 1896.

There was an increase of three hundred and sixty-nine (369) in deaths from diphtheria; an increase of two hundredred and twenty-one (221) in deaths from scarlet fever; a decrease of fifty (50) in deaths from membraneous croup; a decrease of one (1) in death from typhoid fever from the year 1896.

Two thousand three hundred and eighty-eight (2,388) deaths from consumption were reported; a decrease of one hundred and thirty-six (136) from the preceding year.

Eight thousand two hundred and seventy-five (8,275) disinfections were done.

The disinfecting tank has been in continuous use during the year, and during the latter part of the year a second tank was put in use to disinfect with electrozone the alleys, streets, gutters, yards and water-closets in the Thirty-third Ward, where an increase of diphtheria prevailed for two months.

In the Twenty-second Ward the cases of diphtheria began to augment during the month of September, and continued at a high figure for three or four weeks. The outbreak was of an unusually mild type, which accounted for its rapid spread, because these cases were not promptly recognized, and children were permitted to attend school and mingle indiscriminately with others. A house to house inspection was made of the infected section, and all schools within the locality were fumigated and cleaned.

Eighteen hundred and forty (1,840) nuisances were turned over to the Nuisance Department for abatement.

The report of Dr. Bemis for the past year is herewith appended.

Respectfully submitted,

J. HOWARD TAYLOR,

Medical Inspector.

ANNUAL REPORT

OF THE

MEDICAL OFFICER

For the Administration of Antitoxin and the Practice of Intubation.

Philadelphia, December 31, 1897.

DR. J. HOWARD TAYLOR,
Medical Inspector.

SIR:—I have the honor to report the following work done by the Medical Officer for the Administration of Antitoxin and the Practice of Intubation for the year 1897:

Cases immunized	193
(None developed Diphtheria within two weeks.)	
Cases injected	274
Deaths	53
Recoveries	221
Cases injected twice or more	119
Deaths	27
Recoveries	92
Cases intubated and injected	68
Deaths	34
Recoveries	34
Cases intubated and not injected	27
Deaths	15
Recoveries	12
Total cases intubated	95
Total deaths	49
Recoveries	46

The following table shows the day of the disease on which the cases were injected:

Days.	Cases.	Deaths.
First	16	
Second	66	8
Third	70	10
Fourth	46	9
Fifth	33	11
Sixth	16	6
Seventh (or more)	29	9
Totals	274	53

The following table shows the cases receiving two or more injections, the day the first injection was given, and the deaths:

Days.	Cases.	Deaths.
First	6	
Second	21	2
Third	36	8
Fourth	23	3
Fifth	13	6
Sixth	7	4
Seventh (or more)	13	4
Totals	119	27

Respectfully submitted,

R. W. BEMIS,

Medical Officer for the Administration of Antitoxin and the Practice of Intubation.

ANNUAL REPORT

OF THE

PHYSICIAN-IN-CHARGE

OF THE

MUNICIPAL HOSPITAL

For the year 1897.

GENTLEMEN:—In accordance with custom and a rule of the hospital, I take pleasure in presenting the annual report for 1897, detailing the work performed during the year.

For several years past the number of admissions to the hospital has increased year after year, until it has now reached a proportion unparalleled in the history of the institution. In the years 1871-1872, when the great epidemic of small-pox prevailed, the admissions were greater than in any year before, or since that time, until the two years—1896-1897—during which the number of admissions so greatly increased as to attain pre-eminence. While the increase was very great in 1896 over previous years, it was far greater in 1897. It cannot be said that the increase is due to unusual prevalence of such infections diseases as are usually treated in the hospital, for, on the contrary, these diseases have been more prevalent in the city in previous year. I believe the increase is due, first, to a more rigid enforcement by the Board of Health of the Act of Assembly of 1895, which requires that all houses in which infectious diseases exist shall be placarded, or the patients removed to the hospital, by force, if necessary, when they cannot be properly cared for at their homes; and, secondly,

to the greater popularity of the hospital. It is now quite generally known in the city that the hospital is provided with competent resident physicians, and with an efficient corps of trained nurses, who constantly care for the patients from the time they are received into the ambulance to be conveyed to the hospital until they have recovered and are ready to be returned to their homes. In employing nurses great care is taken to ascertain their standing and general reputation, and only those are accepted who, besides being well recommended, have received their diplomas from a reputable training school. I do not believe that a more comptent corps of nurses can be found in any hospital here or elsewhere. A number of those on duty at present have served for several years, and consequently have become quite skilled in the management of patients suffering from infectious diseases.

It is due the institution to say that the present resident physicians (only two in number) have served for nearly three years, by which long and constant service they have acquired not only much valuable experience in the treatment of infectious diseases, but have become remarkably skillful in the operation known as intubation for the relief of membraneous croup. A resident physician and a trained nurse invariably go with the ambulance when a call is made for a patient, and if the case be one of membraneous croup with very difficult breathing, the physician, with the assistance of the nurse, immediately performs intubation at the residence, after which the patient is carried to the ambulance by the nurse and conveyed to the hospital with much less suffering than if the operation had not been performed. This operation has even been performed in the ambulance on its way to the hospital in order to save the life of the child.

In answering an ambulance call it not infrequently happens on reaching the house the resident physician discovers

that the case, though reported as diphtheria, is actually scarlet fever; in such case the ambulance returns to the hospital empty, and another ambulance, physician and nurse are sent for the patient. The hospital is provided with three ambulances with modern improvements: one is used for conveying diphtheria patients, another scarlet fever patients, and the third small-pox, when that disease prevails. Fortunately, no case of the latter disease has been admitted to the hospital for over two years. The last case was received in the latter part of October, 1895; since that time, it is worthy of remark, the city has been wholly exempt from small-pox. No like period of exemption from that dread diseases can be found in the records of the Health Department of Philadelphia; and this speaks volumes for the service of sanitary workers.

The diseases diphtheria and scarlet fever have, for several years past, been responsible for the vast majority of the admissions to the hospital; and this is true notwithstanding the fact that these diseases have not prevailed in the city in epidemic form. As already stated, the increase of admissions has steadily progressed year after year. This may be seen by the following table, which shows the number of patients admitted annually since 1890:

TABLE I.

1890	52	1894	810
1891	127	1897	1,191
1892	480	1896	1,252
1893	524	1897	2,179

The following table shows the number of patients remaining in the hospital January 1, 1897, the number admitted during the year, the total number treated during the year, the number discharged cured, the number that died, and the number remaining under treatment December 31st, 1897:

TABLE II.

Remaining Jan. 1, 1897.	Admitted.	Total Cases Treated.	Discharged.	Died.	Remaining Dec. 31, 1897.
218	2,179	2,397	1,828	397	172

NOTE.—Twelve (12) of the deaths recorded in this table occurred among the two hundred and eighteen (218) patients remaining over from the year 1896.

Out of the twelve hundred and fifty (1,250) patients admitted in the year 1896, two hundred and eighteen (218), as the table shows, remained over into 1897. Adding this number (218) to the number admitted during the year (2,179), gives the total number treated in the hospital in 1897, which amounts to two thousand three hundred and seventy-nine (2,379). When small-pox prevailed in the years 1871-1872, one hundred and eighty-seven (187) cases remained over from the former year into the beginning of the latter, and as the admissions in the latter year amounted to twelve hundred and nine (1,209), it shows that the total number treated in 1872 was one thousand four hundred and sixty-nine (1,469). This was the largest number of patients ever treated in the hospital in any single year, before or since, until 1897, when, as just stated, it reached 2,379, which is 910 patients in excess of the next highest annual number. The year 1897 has therefore acquired considerable pre-eminence as to the number of admissions, over any previous year in the history of the institution.

The following table shows the number of admissions and deaths during each month of the year:

TABLE III.

Months.	Cases.	Deaths.	Months.	Cases.	Deaths.
January	186	30	August	170	29
February	187	38	September	136	23
March	180	36	October	189	29
April	190	28	November	184	38
May	229	34	December	176	29
June	182	43			
July	170	28	Total	2,179	385

A number of the patients who were admitted in the latter months of the year 1897, died in the early months of 1898. These deaths are not recorded in the above table.

The following table shows the number of admissions during the year classified according to the diseases, and the sex and color of the patients; also, the same classification of the patients remaining over from the year 1896:

TABLE IV.

Diseases.	Admitted.	Sex.		Color.		Died.
		Male.	Female.	White.	Black.	
Diphtheria	1,295	636	659	1,217	78	285
Scarlatina	858	414	444	808	50	97
No disease	10	1	9	8	2	
Pseudo-Diphtheria	9	4	5	7	2	
Typhus Fever	2	.....	2	2		
Syphilis	1	.....	1	.....	1	1
Exophthalmic Goitre	1	.....	1	1	.....	1
Perforate Foramen Ovale	1	.....	1	1	.....	1
Tonsillitis	1	.....	1	1		
Pharyngitis	1	1	.....	1		
Totals	2,179	1,056	1,123	2,046	133	385
Remaining Jan. 1, 1897. Diphtheria	137	60	77	135	2	8
Scarlatina	77	38	39	74	3	2
Leprosy	2	1	1	2	.....	1
Meningitis	1	1	.....	1	.....	1
No disease	1	.....	1	1		
Grand total	2,397	1,156	1,241	2,259	138	397

This table shows that the diseases, diphtheria and scarlet fever, are responsible for by far the greatest number of patients admitted to the hospital during the past year.

The ten (10) admissions classified as "No disease," were

principally mothers who came to the hospital as assistant caretakers of their children. The nine (9) cases of "Pseudo-diphtheria" were sent to the hospital as cases of true diphtheria, but as the specific organism of diphtheria was not found in culture the cases were classified as pseudo-diphtheria. Of the two (2) cases of typhoid fever one occurred in an employe of the hospital, and the other in a patient who had at the same time diphtheria. The case of syphilis was sent as diphtheria; so also was the case of exopthalmic goitre; but the diagnosis of diphtheria was not in either case supported by the clinical symptoms nor the bacteriological examination. The case of perforate foramen ovale was sent to the hospital as a diphtheria suspect, but the clinical symptoms of that disease were not well marked, and a negative bacteriological examination resulted. The patient, however, became very cyanotic, and death resulted from the imperfect condition of the heart. The case of tonsillitis, and the one of pharyngitis were sent as diphtheria, but by a careful examination these diseases were excluded.

The following table shows the number of admissions, the number of deaths, and the death rates from diphtheria and scarlatina:

TABLE V.

Disease.	Admitted.	*Died.	Per cent.
Diphtheria	1,295	300	23.16
Scarlatina	858	99	11.53

* 15 of the deaths from diphtheria occurred among the patients remaining over into 1898; and 2 of the deaths from scarlatina occurred among patients remaining over with that disease. In all tables which follow, these 17 deaths are included.

The number of admissions from both diphtheria and scarlet fever in 1897, was very considerably increased over the preceding year. For example, in 1896 the admissions from diphtheria were 869, while in 1897 they

amounted to 1,295. In 1897 the admissions from scarlet fever were 858, while in 1896 they were only 253.

The above table shows that the death rate from diphtheria in 1897 was 23.16 per cent. This does not differ very greatly from the result in 1896, when the death rate was 22.02 per cent. The comparison with regard to the result in scarlet fever is decidedly in favor of the year 1896, the death rate then was 7.15 per cent., while, as the above table shows, it was 11.53 per cent. in 1897. It was a matter of observation in the hospital that scarlet fever was more severe during the latter year.

The total number of cases of diphtheria, including membraneous croup, that occurred in the entire city during 1897, was 5,405, and the deaths amounted to 1,474. Deducting from these cases the cases and deaths from this disease in the hospital, it may be seen that the death rate in the city amounted to 28.92 per cent., while in the hospital it was 23.16—a difference in favor of the hospital of 5.76 per cent. The same calculation with regard to the cases of scarlatina shows that the death rate in the city was 6.86 per cent., while in the hospital it amounted to 11.53 per cent—a difference in favor of the city of 4.67 per cent.

The following table shows the cases of diphtheria and scarlatina classified according to the sex and color of the patients—showing the number of admissions, the deaths, and the death rate from each disease:

TABLE VI.

DISEASE.	SEX.						COLOR.					
	MALE.			FEMALE.			WHITE.			BLACK.		
	Admitted.	Died.	Per cent. of Deaths.	Admitted.	Died.	Per cent. of Deaths.	Admitted.	Died.	Per cent. of Deaths.	Admitted.	Died.	Per cent. of Deaths.
Diphtheria.....	636	147	23.11	659	153	23.21	1,217	281	23.08	78	19	24.35
Scarlatina.....	414	43	11.83	444	50	11.26	808	99	12.25	50		

According to this table there is very little difference in the death rates of the male and female patients who suffered from diphtheria; and the same may be said with regard to the white and colored patients. The difference also is very slight with regard to the scarlet fever patients, excepting that none of the blacks died, which was simply accidental. It cannot be said that sex or color exercise any influence over these diseases.

The following table shows the cases of diphtheria and scarlet fever classified according to the age of the patients —showing the admissions, the deaths, and the death rates at the various age periods therein designated:

TABLE VII.

AGE PERIODS.	DIPHTHERIA.			SCARLATINA.		
	Admitted.	Died.	Per cent. of Deaths.	Admitted.	Died.	Per cent. of Deaths.
Under one year	34	16	47.05	4	2	50.00
One to five years	560	199	35.53	330	64	19.39
Five to ten years	437	65	14.87	366	30	8.19
Ten to fifteen years	126	14	11.11	94	3	3.19
Fifteen to twenty-five years	89	3	3.37	49		
Twenty-five years and upwards	49	3	6.12	.....		
Total	1,295	300	23.16	858	99	11.53

The above table clearly shows that the death rate from diphtheria depends largely upon the age of the patients, it being very much higher in those who are very young. For example, it was the highest among patients under one year of age, and greatly diminished as the ages of the patients increased.

The diphtheria antitoxin was used more freely in 1897 than in any previous years since its introduction to the

profession. It was not only used in a larger number of cases, but was administered in larger and more frequently repeated doses, without reducing the death rate very materially below that of the previous years, when it was less freely used. Indeed, the death rate from diphtheria was slightly higher than in 1896, notwithstanding the proportion of patients that recived antitoxin in 1896 was less than in 1897. For instance, of the total number of admissions of diphtheria cases in 1896, 63.63 per cent. received antitoxin, while, in 1897, the proportion was 76.86 per cent.

The number of diphtheria admissions in 1897 was 1,295, of these 993 received antitoxin, and 261 died, making the death rate 26.28 per cent., as against 25.67 per cent. the previous year. The number of cases that did not receive antitoxin was made up mainly of three classes: (1) Very mild cases; (2) moribund cases, which died before an injection could be made; (3) cases complicated by scarlatina. The first class was by far the largest, and hence the death rate was comparatively low among the non-antitoxin cases. The total number of non-antitoxin cases was 302, of which 39 died, making the death rate 12.91 per cent. The mortality was slightly less than in 1896, when the rate among the non-antitoxin cases was 13.29.

The proportion of deaths among the laryngeal cases requiring intubation was considerably larger than in any year since 1894. The number of cases that required intubation in 1897 was 182, and of these 127 died, making the death rate 69.78 per cent., as against 60.25 per cent. in 1896, and 54.91 per cent. in 1895. Of the 182 cases, 167 received antitoxin, and of these 115 died, making the death rate 68.86 per cent., as against 56.06 per cent. in 1896, and 52.94 per cent. in 1895. Fifteen (15) cases of diphtheria did not receive antitoxin, and of these 12 died—a death rate of 80 per cent. Among the 15 cases are in-

cluded a few, at least two or three, that were *in extremis* when admitted, and also several that occurred in the scarlet fever wards, the diphtheria occurring simultaneously with or immediately after the former disease. According to my exeprience, membraneous croup, occurring in cases of measles or scarlet fever, is extremely fatal. During the year one case of measles suffered from this complication, and death resulted; and also four cases of scarlet fever, with four deaths. One of the latter cases received antitoxin. In all five of the cases intubation was performed, but not being recorded as cases of diphtheria they are not included among the intubation cases above mentioned.

There are two very important factors to be taken into account in considering the mortality from diphtheria in any series of cases: One is the age incident, as the preceding table shows, and the other is the proportion of laryngeal cases. As laryngeal diphtheria is so much more fatal than the more ordinary form of the disease, it is evidence that any series of cases in which there is a large proportion of laryngeal cases will show a death rate proportionately high. By eliminating such cases entirely the death rate will usually be found to be compartively low. Taking, for example, the total number of cases of diphtheria admitted to the hospital in the year 1897, with a death rate of 23.16 per cent., and eliminating the larygeal or intubation cases, it may be seen that the death rate among the faucial and nasal cses alone was relatively low—15.54 per cent.

The following table shows the number of cases of diphtheria in which antitoxin was administered in each month of the year, and the number of deaths and the death rates among these cases:

TABLE VIII.

Months.	Number treated.	Number died.	Per Cent.
January	91	23	25.27
February	68	17	25.00
March	44	18	40.90
April	67	18	26.86
May	70	19	27.14
June	84	23	27.36
July	83	20	24.09
August	85	18	21.17
September	68	18	26.47
October	126	21	16.66
November	96	29	3 .20
December	111	37	33.33
Total	993	261	26.28

I wish to direct attention to the very great variation in the death rates among the various series of cases of diphtheria, divided according to the month of admission. It must be remembered that they all received the same care and treatment, and that they equally enjoyed the advantages of a so-called specific remedy. This variation in the death rate clearly demonstrates how greatly different series of cases may vary in the severity of the disease—a fact which should always be taken into consideration in estimating the value of any remedy. Nothing is so well calculated to promote the reputation of a drug, or a special line of treatment, as its use at a lucky period, or under circumstances most fortuitous. On the other hand, the reputation of a remedy should not suffer because of the unsatisfactory results obtained under unfavorable conditions.

As already stated, antitoxin was never more freely used than in the past year. The chief supply came from that which is prepared under the supervision of the Bacterio-

logical Division of the Bureau of Health. H. K. Mulford & Co., of this city, and Parke, Davis & Co., Detroit, being anxious that the antitoxin prepared by them should be subjected to a trial in the hospital, and each kindly offering to supply gratuitously all that would be required for an entire month, I accepted with thanks their offer, and set apart the month of September for H. K. Mulford & Co., and the month of December for Parke, Davis & Co. I should add that the antitoxic serum prepared by the Bacteriological Division of the Bureau of Health, this city, contained 100 units of antitoxin to each cubic centimeter, while that furnished by Mulford & Co., contained 200 antitoxin units, and that by Parke, Davis & Co., 750 antitoxin units to each cubic centimeter. The two stronger serums were used much more freely than the weaker—the dose in antitoxin units being not only greater, but it was more frequently repeated. I feel perfectly safe in saying that antitoxin was never so freely used in the hospital as during the month of December. I shall make no comment on the results, but let the table speak for itself.

One of the two lepers who have been cared for in the hospital for some years past died July 24, 1897. His name was Hop Yen Lee, age 41 years, a native of China, admitted to the hospital with leprosy March 29, 1890. Death resulted from exhaustion incident to the disease. When admitted the Chinaman gave his age as 34 years, and stated that the disease had existed not over one year, but it is probable that it was of much longer duration. The disease at first was of the anesthetic variety, but gradually changed to the tubercular. An autopsy was made by Prof. W. M. L. Coplin, who collected and preserved several pathological specimens for careful scientific study. A full and interesting report will doubtless be made by Prof. Coplin. The other leper, a female, still remains in the hospital, and the disease does not appear to progress rapidly.

I append hereto the report of the Disinfector of the public disinfecting station, located on the hospital grounds. The report gives a detailed account of the work done during the year, showing the great amount of material of various kinds disinfected. The demands upon the plant are increasing every year, so that it has been found necessary to increase from time to time the facilities for collecting and returning the goods. The plant is capable of doing still more work; it has never yet been operated to its fullest capacity.

Before closing, permit me to offer some recommendations for your consideration. I know it is not possible for you to carry the recommendations which I shall make into effect unless City Councils provide the necessary appropriation of money; but it is hoped, by calling your attention to the many pressing needs of the hospital, that the funds necessary to provide these may be procured through your efforts.

In the first place, I would recommend that an appropriation sufficient to employ a competent pharmacist be asked for. As no provision has ever been made for such an official, all pharmaceutical work of the hospital falls upon the resident physicians. The time of the latter is now so fully occupied in the performance of other legitimate duties that the work of compounding prescriptions does not receive the care and attention it deserves. Besides, if the resident physicians had the time for this service, they are scarcely competent at the present day to perform the duties pertaining to pharmacy, which has long since become a distinct and separate branch of medicine, followed only by those who have met the rigid requirements of an exacting State enactment regulating the practice of pharmacy. In order, therefore, to comply with the law, if for no other reason, it seems necessary that provision should be made for the employment of a competent pharmacist.

Secondly, I would recommend that provision be made for the employment of a clerk. The hospital has never as yet had the services of a clerk. The records, many of which are of scientific value, should not only be complete, but so systematically arranged and carefully preserved that data of interest and value could be furnished with the least possible delay or trouble. The clerical work of the hospital, always considerable, increases *parri passu* with the annual increase of admissions, which during the last few years has been very great. A young lady with some clerical ability, and capable of operating a typewriting machine, would be competent to fill the position.

Lastly, I would recommend that there be no relaxation in your efforts to convince City Councils of the importance of making an adequate apppropriation for the much needed repairs and improvements of the hospital buildings. The original buildings were erected in 1865, and, during the many years which have elapsed, very little has been done in the way of repairs, and practically nothing in the way of improvements. Very much is therefore needed to put the buildings in good condition, and to bring them up to modern requirements. I need say nothing about the heating facilities, which are very defective at present, as provision has already been made for the introduction of a steam heating system. The cellar should be cemented, and furnished with suitable refrigerators for the preservation of meats, milk, butter, and other perishable articles; an additional dining room should be built for the employees, so that the males and females may be dined separately; additional dormitories should also be provided for their accommmodation; more bath rooms are required, and the entire water closet system needs changing; private rooms are needed for pay patients; a dining room and sitting room, bath room, toilet rooms, and more comfortable dormitories are urgently required for the nurses.

The laundry is inadequate in every respect, and should by all means be brought up to the modern requirements. The washing is done on old-fashioned washboards, and the ironing, by flat irons. Improved washing machines, centrifugal wringers, mangles, and the like, should be introduced. A drying room is much needed. At present there is great difficulty in drying the clothes during a spell of rainy weather.

A shed in front of the stable, capable of being enclosed and slightly heated in the winter, is much needed. At present ambulance drivers are obliged to harness and unharness their horses in full exposure of the weather, and to wash the ambulances out of doors all the year round. Surely, better facilities for this work should be provided.

There is no building on the grounds for the reception of dead bodies. All such bodies are now removed to an old and dilapidated building located in Potter's Field. I would recommend that a suitable building be erected on the Hospital grounds where all dead bodies could be cared for until the funeral takes place.

When the pavilion was built in 1893, and set apart for the treatment of diphtheria patients, it was thought to be large enough to accommodate this class of patients for some years to come, but it was very soon found to be too small. In 1896, the work of building an annex was commenced, and, owing to some changes in the plan was not finished until the early part of 1897. The pavilion, though not elaborate or costly in its construction, is quite complete in all its appointments, and admirably adapted for its purpose. A full description of the building was given by Dr. Ford in his report of last year.

Respectfully submitted,

WILLIAM M. WELCH,

Physician-in-Charge.

ANNUAL REPORT

OF THE

DISINFECTING STATION

MUNICIPAL HOSPITAL

For the year 1897.

Philadelphia, January 20, 1898.

WILLIAM M. WELCH, M. D.,
Physician-in-charge.

DEAR SIR:—In submitting the report of the work performed at the Disinfecting Station, for the year ending December 31, 1897, I beg to direct your attention to the large increase of work over the year 1896. Comparing the two years last-named you will see that the volume of work was nearly twice as great in 1897; and, on referring to the report of 1895, a still greater increase is shown.

The following tables will show the amount of work done during each of the last two years:

TABLE I.

Articles Received.	1896	1897
Mattresses and beds	2,295	5,582
Quilts, blankets and shawls	2,807	4,384
Pillows and bolsters	4,539	9,197
Carpets and rugs	559	880
Lots of clothing	645	1,202
Sheets and spreads	1,034	1,599
Curtains and covers	120	132
Couches and chairs	6	107
Miscellaneous lots	488	398
Bedsteads and cots	140	89

TABLE II.

Articles received during each month of the year ending December 31, 1897.

Articles.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Mattresses and beds	496	454	532	460	588	567	525	393	273	415	448	431	5,582
Quilts, blankets and shawls	518	481	529	466	367	363	239	169	168	301	384	349	4,334
Pillows and bolsters	896	799	947	732	987	800	819	608	471	684	782	672	9,197
Carpets and rugs	91	80	87	63	63	86	84	83	23	36	78	106	880
Lots of clothing	149	149	117	93	95	79	76	67	77	100	90	110	1,202
Sheets and spreads	186	188	222	152	109	110	76	96	102	90	132	136	1,599
Curtains and covers	21	25	12	14	8	5	4	1	2	10	9	18	132
Couches and chairs	9	5	5	8	9	10	8	8	2	15	12	16	107
Miscellaneous lots	42	30	37	38	29	37	31	18	20	20	30	66	398
Bedsteads and cots	2	4	1	6	1	56	9	2	4	....	3	1	89
Calls by wagon	627	542	605	490	521	569	604	370	415	584	722	647	6,696
Deliveries by wagon	322	299	324	274	228	275	278	183	156	222	263	237	3,091
Number of disinfecting processes	29	26	29	25	26	28	25	25	23	25	28	29	318
Total													33,625

TABLE III.

Articles disinfected during each month of the year ending December 31, 1896.

Articles.	January.	February.	March	April.	May.	June.	July.	August.	September	October.	November.	December.	Total.
Mattresses and beds	386	391	459	371	505	468	435	323	210	327	368	357	4,600
Blankets, quilts and shawls	476	455	501	423	332	331	215	152	157	280	353	322	3,997
Pillows and bolsters	832	762	917	702	947	744	779	561	433	642	762	640	8,721
Carpets and rugs	83	70	73	59	60	79	74	80	21	30	73	100	802
Lots of clothing	129	128	63	86	47	69	19	65	72	65	87	101	931
Sheets and spreads	182	185	222	150	109	105	74	96	101	90	129	134	1,577
Curtains and covers	24	25	12	14	8	5	4	1	2	10	9	18	132
Couches and chairs	6	3	4	2	4	6	5	4	.....	8	8	12	62
Miscellaneous lots	30	24	32	28	20	25	18	10	11	11	14	41	264
Bedsteads and cots	.....	2	.....	1	.....	53	2	.....	.....	.....	.....	.....	58
Articles disinfected	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21,114
Articles destroyed	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,376
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,520

TABLE IV.

Articles destroyed during each month the year ending December 31, 1897.

Articles.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Mattresses and beds	110	63	73	89	83	99	90	70	63	88	80	74	982
Quilts, blankets and shawls	42	26	28	43	35	32	24	17	11	21	31	27	337
Pillows and bolsters	64	37	30	30	40	56	40	47	38	42	20	32	476
Carpets and rugs	8	10	14	4	3	7	10	3	2	6	5	6	78
Lots of clothing	20	21	54	7	48	10	57	2	5	35	3	9	271
Sheets and spreads	4	3	.....	2	.....	5	2	.....	1	.....	3	2	22
Couches and chairs	3	2	1	6	5	4	3	4	2	7	4	4	45
Miscellaneous lots	12	6	5	10	9	12	13	8	9	9	16	25	134
Bedsteads and cots	2	2	1	5	1	3	7	2	4	.....	3	1	31
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,376

TABLE V.

Articles Destroyed.	1896.	1897.
Mattresses and beds	472	982
Quilts, blankets and shawls	221	337
Pillows and bolsters	318	476
Carpets and rugs	78	78
Lots of clothing	164	271
Sheets and spreads	24	22
Curtains and covers	25	
Couches and chairs	36	45
Miscellaneous lots	185	134
Bedsteads and cots	21	31

Respectfully submitted,

W. G. SHALLCROSS, M. D.,

Disinfector.

ANNUAL REPORT

OF THE

Chief Inspector of Nuisances

Philadelphia, January 14, 1898.

JOHN J. MCCAY., ESQ.,
Chief Clerk.

SIR:—I have the honor to submit this, my annual report for 1897.

Number of complaints received from all sources	21,576
Number of complaints anonymous	1,723
Number of complaints referred to other Bureaus	862
Number of complaints received from Director of Public Safety	152
Number of complaints received from Division of Contagious Diseases	1,849
Number of complaints received from Bureau of Police	1,467
Number of complaints reported well founded	18,678
Number of complaints dismissed as "No nuisance"	3,606
Number of nuisances abated without formal notice	749
Number of nuisances abated by owners upon due notice	14,443
Number of nuisances returned "Not complied with"	2,780

A tabulated exhibit of number and character of nuisances is herewith appended.

I beg leave to call your attention to the fact that at the close of the year a number of nuisances remained "not complied with," the item for abatement of nuisances having exhausted.

House-to-House Inspection.

The annual domiciliary inspection disclosed a better condition than at any previous inspection indicating that

the residents of our city learn and profit by these annual visitations. The inspection covered sixteen thousand five hundred and seventy-two (16,572) premises.

The prevalence of diphtheria in the Twenty-second and Thirty-third Wards prompted a special inspection of these localities the result of which made a decided improvement. The Thirty-third Ward lacks proper sewer facilities, and until such are provided, our sanitary work will re retarded. It is to the credit of property owners in these localities that, whenever practicable, nuisances were promptly abated, after notification.

An outbreak of typhoid fever in the territory west of Broad street, and from Poplar street to Lehigh avenue, embracing the Twenty-ninth, Twenty-eighth, and parts of the Thirty-second and Thirty-seventh Wards, necessitated an investigation as to the sanitary conditions. This section of the city, with few exceptions, is in an excellent condition.

The prevention of pollution of the Schuylkill river has been continued. A communication from the Chief Engineer of the Bureau of Water, complaining of the pollution of the Schuylkill water by parties along the canal at Manayunk, depositing offal, etc., was investigated and cautionary notices served upon all the mills, factories, dwellings and stores, prohibiting such practice.

Slaughter Houses.

An inspection of slaughter houses, of which there are in active operation two hundred and three (203), finds these establishments generally well conducted. But four (4) were found to be in such condition as to require official action, one of which has been directed to be closed and the business discontinued.

Cemetery Vaults.

The annual inspection of cemetery vaults, made after May 1st, evidences care on the part of superintendents

of cemeteries in the observance of the rules of the Board of Health.

Privy Cleaning.

The inspectors of privy cleaning report having visited seventeen hundred and thirty-eight (1,738) premises where odorless apparatus were in operation. With the exception of three trivial complaints, there appears to have been no violation of the rules.

Privy Wells.

The abondonment of privy wells that having become in such condition that the mere removal of the contents does not abate the nuisance, progresses gradually, under notice of this Division. Wells have been abandoned to the number of six hundred and twenty-three (623) under notice of this Bureau.

Lodging Houses.

During the year one hundred and three (103) licenses were issued for the keeping of lodging houses, an increase of twenty (20) over last year.

These houses are inspected frequently, and considering the unfortunate condition of the lodgers in many of them, are kept in fair condition. Three (3) have been vacated leaving one hundred (100) licenses in operation at the close of the year.

Keeping of Swine.

It is a matter of regret that, notwithstanding the persistent efforts of the Board of Health to abate the nuisance arising from keeping of hogs, several parties, in defiance of the rules, have brought hogs into the lower part of the city. During the year a number of these offending parties have been arrested and indicted for maintaining a nuisance. The disposition of these cases

will, in all probability, settle the question as to the right of parties keeping hogs and feeding garbage.

The work of this Division has been performed with an eye single to the benefit of the sanitation of our City. We have had the hearty co-operation of other Bureaus whose assistance is made necessary by reason of the fact that nuisances often occur for which the municipal authorities are responsible, and not coming within the authority of the Board of Health. I desire to express my appreciation of their co-operation.

Thanking you for many official courtesies, I am,

Very respectfully,

CHAS. F. KENNEDY,

Chief Inspector of Nuisances.

ANNUAL REPORT

OF THE

CHIEF INSPECTOR OF HOUSE DRAINAGE

For the year 1897.

Philadelphia, January 18, 1898.

To the President and Members of
the Board of Health.

GENTLEMEN:—I herewith present the annual report of the operations of the House Drainage Division for the year ending December 31, 1897:

There were submitted and approved plans for six thousand three hundred and eighty-three (6,383) new, and seven thousand four hundred and thirty-seven (7,437) old buildings; total, thirteen thousand eight hundred and twenty (13,820).

There were returned and filed, two thousand five hundred and six (2,506) new, and six thousand and twenty-three (6,023) for old buildings, making a total of eight thousand five hundred and twenty-nine (8,529).

Total number of inspection visits, new and old buildings, this year, were forty-one thousand and ninety-three (41,093).

There were referred from the Nuisance Division to this complaints, respecting house drainage, involving one thousand and thirty-eight (1,038) buildings; of this number, one thousand and thirty (1,038) were inspected and reported on to the Board with the recommendations necessary for their abatement.

Resolutions of the Board were referred by the Health Officer involving thirty-eight (38) buildings; plans and specifications were prepared representing twenty-six (26); abated by owners, three (3); referred to the Health Officer, nine (9).

Privy wells abanboned, two thousand and twenty (2,020); constructed, for which permits were issued, one hundred and one (101).

Applications for registration, two hundred (200).

Applicants examined, one hundred and eighty-nine (189).

Applicants accepted, one hundred and twenty-two (122).

Applicants rejected, sixty-seven (67).

Applicants who failed to appear for examination, eleven (11).

Certificates issued to persons previously registered, twenty-three (23).

Certificates issued to successful applicants, ninety-two (92).

Certificates cancelled or surrendered, one hundred and fourteen (114).

Certificates in force December 31, 1896, eight hundred and eighty-four (884).

Certificates in force December 31, 1897, eight hundred and eighty-five (885).

The following Table Shows the Operations of the Divisions, Monthly, for 1897.

House Drainage Division.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
New Buildings.													
Plans approved	84	90	392	687	553	798	704	727	716	773	555	304	6,383
Plans returned and filed	.....	.....	24	11	16	74	33	52	160	629	169	1,338	2,506
Old Buildings.													
Plans approved	150	123	609	905	836	983	770	817	771	626	665	232	7,437
Plans returned and filed	17	51	116	246	159	351	163	213	905	1,499	589	1,714	6,023
Inspection visits, new and old, 1897	237	502	1,494	3,054	4,865	3,648	4,895	3,980	5,634	4,732	3,879	4,178	41,093
Inspection visits, new and old, 1896	2,199	1,128	976	924	619	332	324	91	402	341	278	139	7,753
Inspection visits, new and old, 1895	30	20	86	35	20	84	15	.....	.....	.....	.....	.....	290
Total inspection visits, new and old	2,466	1,650	2,556	4,013	5,504	4,069	5,234	4,071	6,036	5,073	4,157	4,317	49,136
Complaints of Drainage.													
Buildings involved	52	1	264	159	165	209	132	55	.....	.....	1	.....	1,038
Referred to the Board	52	1	264	159	165	209	132	55	.....	.....	1	.....	1,038
Referred by the Health Officer for plans, etc	.....	.....	.....	12	.....	.....	26	.....	.....	.....	.....	.....	38
Plans prepared for Health Officer	.....	.....	.....	9	.....	.....	17	.....	.....	.....	.....	.....	26
Abated by owners	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	3
Re-referred to Health Officer	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....	.....	9

	Manure pits.	Hogs and hog-pens.	Filthy houses.	Filthy yards.	Filthy cellars.	Filthy alleys.	Filthy lots.	Stagnant ponds.	Water in cellars.	Leaking hydrants.	Pump wells.	Dead animals.	School-houses.	Infected houses.	Miscellaneous.
January	1	.....	2	11	8	7	.....	.....	45	11	.....	.....	.....	.....	17
February	4	.....	7	9	11	2	1	.....	57	32	2	.....	2	.....	11
March	5	.....	1	42	3	33	9	.....	26	24	1	3	1	.....	1
April	2	.....	9	36	26	196	8	3	51	15	1	1	.....	.....	13
May	9	.....	7	29	29	130	9	4	55	18	.....	1	3	.....	16
June	10	.....	4	23	40	72	12	3	58	38	8	2	.....	.....	22
July	19	.....	13	66	61	85	28	5	97	60	4	4	2	.....	42
August	6	.....	17	30	22	49	17	.....	80	43	6	5	1	.....	32
September	10	.....	7	12	20	31	10	.....	34	44	3	1	.....	.....	30
October	2	2	11	20	16	26	9	.....	37	41	.....	1	.....	.....	16
November	1	.....	16	10	21	12	11	.....	40	36	.....	1	.....	.....	18
December	2	.....	10	20	15	16	6	.....	45	31	.....	1	.....	.....	25
Total	71	2	104	308	299	659	120	15	625	393	25	20	10	.....	243
From Divisio	1	.....	23	26	29	35	17	.....	62	6	.....	.....	.....	124	3
From Bureau	4	33	17	43	18	197	7	.....	2	8	2	.....	.....	.....	10
From Direct															
House to Ho	2	.....	69	161	364	41	8	.....	6	15	.....	.....	.....	.....	15
Total	78	35	213	538	710	932	152	15	695	422	27	20	*10	124	271

The following Table Shows the Operations of the Division, Monthly, for 1897.

House Drainage Division.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Privy wells abandoned	36	40	12	227	268	240	226	257	215	157	139	95	2,020
Privy wells constructed	3	1	16	6	3	5	3	31	28	2	2	1	101
Applications for registration	32	22	27	27	9	17	12	9	4	13	15	13	200
Applicants examined	29	22	26	22	9	17	12	9	4	13	13	13	189
Applicants accepted	16	12	11	13	7	11	7	6	3	12	12	12	122
Applicants rejected	13	10	15	9	2	6	5	3	1	1	1	1	67
Applicants who failed to appear for examination	3	.....	1	5	.....	.....	.....	.....	.....	.....	2	.....	11
Certificates issued to persons previously registered	3	1	3	3	4	2	1	.....	1	.....	1	4	23
Certificates issued by examination	11	9	9	10	6	4	10	7	4	7	2	13	92
Certificates surrendered or canceled	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	114
Certificates in force December 31, 1896	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	884
Certificates in force December 31, 1897	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	885

This Division received during the year a number of complaints, both from our inspectors and citizens, charging violations of the rules of the Board governing house drainage, all of which were given prompt attention. In some instances those emanating from the public proved to be without foundation, while others were well founded. In the latter case the plumbers were required to comply with the law in every respect which incurred for them additional expense above the estimated price and no doubt will have a salutary effect in the future with such persons and deter them and others from a like offence.

It is manifest that the general public are being gradually educated to the necessity for sanitary drainage, and as a consequence are particular that an Inspector of the Board shall pass upon the work that they may have the assurance of an official that it is in accordance with the rules of the Board of Health.

This Division is in receipt daily of communications and visits from owners, architects, builders and others consulting and soliciting advice upon this subject generally in advance of the construction of a building, in order that plans and specifications may be prepared with a view to obtaining the best sanitary results in the construction of their drainage systems. It will therefore be seen that the authorities are in close touch with the public. Those intending to deceive do not proceed very far with their work before the Board is made cognizant of it and the offender required to correct all violations which may have occurred.

The benefits of sanitary drainage have become so apparent that since the enactment of the general law of 1895, applying to all the cities and boroughs of this Commonwealth, requests for information have been received from the authorities of a number of cities and towns of the State with a view of promulgating suitable rules and regu-

lations for the organization of departments and the construction of house drainage. In each instance the information requested has been forwarded, together with copies of our rules and such blank forms as we have in use, with the result that the rules which they have adopted are similar to those under which this Division operates.

In suburban places, which are under no legal restrictions in this respect, architects, in preparing plans and specifications for private residences and other buildings, invariably specify that the drainage systems shall be constructed in accordance with the rules and regulations of the Phliadelphia Board of Health, thus evidencing their appreciation of the necessity for such laws.

A number of the plans submitted and approved were for the reconstruction of drainage systems of bakeries. This was largely due to the order of the Factory Inspectors, who are required under the Act of Assembly approved in 1897, to make inspectors of the sanitary conditions of bake houses. oS that a large percentage, at least, of this class of buildings in Philadelphia now have improved drainage systems, and it is only a question of a short time that the same improvenet will have been made in them all.

I would call the attention of the Board especially to that portion of my report referring to the surrendering or canceling of certificates of registry amounting to one hundred and fourteen (114). This was due to the fact of having re-registered all the master plumbers engaged in the business as such in the City. It was found that the above number were either out of the City, deceased, or had retired from business.

In conclusion, I would briefly refer to that portion of my report of 1896 relative to the obstructions that were placed in the way of this Division for the proper drainage of tenement houses. Through the firm attitude taken by the Board, the obstructions with which they had to con-

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Abated by owners	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	3
Re-referred to Health Officer	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....	.....	9

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This Division received during the year a number of complaints, both from our inspectors and citizens, charging violations of the rules of the Board governing house drainage, all of which were given prompt attention. In some instances those emanating from the public proved to be without foundation, while others were well founded. In the latter case the plumbers were required to comply with the law in every respect which incurred for them additional expense above the estimated price and no doubt will have a salutary effect in the future with such persons and deter them and others from a like offence.

It is manifest that the general public are being gradually educated to the necessity for sanitary drainage, and as a consequence are particular that an Inspector of the Board shall pass upon the work that they may have the assurance of an official that it is in accordance with the rules of the Board of Health.

This Division is in receipt daily of communications and visits from owners, architects, builders and others consulting and soliciting advice upon this subject generally in advance of the construction of a building, in order that plans and specifications may be prepared with a view to obtaining the best sanitary results in the construction of their drainage systems. It will therefore be seen that the authorities are in close touch with the public. Those intending to deceive do not proceed very far with their work before the Board is made cognizant of it and the offender required to correct all violations which may have occurred.

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I would call the attention of the Board especially to that portion of my report referring to the surrendering or canceling of certificates of registry amounting to one hundred and fourteen (114). This was due to the fact of having re-registered all the master plumbers engaged in the business as such in the City. It was found that the above number were either out of the City, deceased, or had retired from business.

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tend have disappeared, architects and builders now submitting their plans for approval and complying in every respect with the law.

Respectfully submitted,

GEO. S. HUGHES,

Chief Inspector.

ANNUAL REPORT

OF THE

Chief Inspector of Milk

For the year 1897.

Division of Milk Inspection,
Room 513 City Hall.

Philadelphia, January 20, 1898.

To the President and Members of
the Board of Health.

GENTLEMEN:—During the past year the inspection of milk has progressed diligently and systematically. The number of inspections throughout the year aggregated thirty-two thousand eight hundred and thirty-four (32,834); the number of quarts inspected, five hundred and forty-five thousand eight hundred and seventy-three (545,873), an increase of one hundred and forty thousand nine hundred and three (140,903) quarts over the preceding year (1896).

Of these, eight thousand two hundred and eighty-five (8,285) quarts or 1.52 per centum were condemned for adulteration with water; four thousand six hundred and ninety-five (4,695) quarts or 0.86 per centum were skimmed, and thirty-one (31) quarts were colored.

The monthly average of condemnations is shown to be 2.36 per centum of the whole quantity inspected as found in the wagons and shops of dealers, with the exception of one thousand two hundred and eighty (1,280) quarts of

separator refuse shipped from creameries as skimmed milk for use as such in this City and condemned on the railroad platforms.

The relative proportion of the quantity inspected to the whole supply estimated at one hundred and ten million (110,000,000) quarts is nearly as one-half is to one hundred (100) or one quart to two hundred (200) quarts or 0.50 per centum. The result may appear insignificant when compared with the supply, nevertheless it represents the quantity being sold or offered for sale by dealers as found by the inspectors on their periodical visitations.

An inspector and collector are assigned to each of the four districts into which the City is divided, and the territory embraced in each district being necessarily large, with the most energetic efforts they cannot be gone over in less than four to six weeks. The efficiency of regular inspection however may be seen in the reduced percentage of adulterated milk from year to year, especially, since 1892 when the force was doubled.

The following shows the percentage of adulterated milk found each year:

1892	11.15 per centum
1893	6.00 " "
1894	3.82 " "
1895	4.29 " "
1896	3.81 " "
1897	2.38 " "

There are about five thousand cows kept in this City for the sale of their milk. In addition to the regular examination of their milk, strict attention is given to the health, stabling, food, cleanliness, preparation of the milk for use —in short the enforcement of the regulations of your Board for the government of these suburban dairies. When these facts are taken into consideration the extent and efficiency of the work done by the force employed will be readily understood.

Bacteriological Tests.

In compliance with the resolution of your Board of October 5th, 1897, samples of milk have been collected daily for bacteriological examination.

Among these were samples from houses infected with diphtheria and typhoid fever, but in no instance have dangerous or suspicious germs been found. Bacteria in varying numbers, from 1,800 to 819,000 per cubic centimeter were discovered, but these are the lactic acid producers, or bacteria of fermentation, which may be found in all milk in numbers according to the length of time since milking, and the care exercised in its preparation for use. While these bacteria may be taken into the stomach of a healthy and vigorous person with impunity, there is an element of danger, by reason of causing intestinal disorders, especially in children, invalids and persons of weak digestion. It is therefore advisable that consumers should insist upon having fresh milk instead of stale milk, because in proportion to the length of time between milking and service at our doors will bacteria increase.

As a rule, the system of milk transportation from the dairies to this City is defective. Refrigerator cars should be provided by the transportation companies, so that as low a temperature as possible be maintained in transit. In other than the winter season, milk, on its arrival here is found at temperatures averaging 70 degrees Fahrenheit, a condition most favorable for the rapid multiplication of bacteria of fermentation. The hours of delivery at the railroad depots, i. e. between 8 and 10 o'clock A. M., are also objectionable, because the dealer is unable to serve this milk until the day following. With the best efforts of the dealer under the circumstances, the milk served at our doors in the early morning is from 24 to 36 hours old.

In the Spring, Summer and Autumn, the milk may be exposed for a length of time to the heat of the sun on the various station platforms awaiting the milk train, which as a matter of course counteracts whatever "cooling" it may have received at the hands of the dairyman, with the result in many instances of finding on its arrival lumps of butter floating on the surface, or can after can of sour milk. Until better facilities are furnished for low temperatures and deliverey at such hours as will enable the usual service of milk as soon after milking as possible, having due regard to its proper preparation for shipment may we hope to minimize bacteria.

The correction of these objectionable features of milk transportation lies with the railroad companies, and unless strenuous and persistent efforts are made by shippers and consignees there is little likelihood of improvement in this direction.

Before filling the cans for shipment, it is essentially requisite to regularly and systematically scald and thoroughly cleanse them. The milk should be carefully strained, aerated and cooled to 50 degrees Fahrenheit or lower, so that upon its arrival at the railroad platforms it may be in a fair condition for distribution. Before returning the empty cans to the farmer, the dealer should not fail to scald and thoroughly cleanse them. Neglect in this matter cannot be too strongly condemned. An examination of the empty cans at the various platforms will show the greater number in a disgusting condition of filth and sourness. In many instances the cans are used by dealers as fermenting vats for cheese making, after which they are returned to the farmer without even rinsing. That bacteria are found in almost incredible numbers under the circumstances is not surprising. Unless the cans are subjected to the cleansing effect of live steam or boiling water they are absolutely unfit receptacles for milk.

Prosecutions.

There were filty-six prosecutions during the year, and true bills found by the grand jury in every case. Eighteen defendants pleaded guilty, three were convicted, three acquitted, two discharged by the magistrate, and thirty cases are pending. In addition to the latter, are eighteen cases not disposed of since 1896. Two of the defendants convicted were sentenced to jail for one month in addition to fine, and one to six months imprisonment. Tardiness in reaching milk cases for trial may be said to be still the rule. Owing to the large number of prison cases pending, which are given priority, milk cases necessarily "go over" indefinitely, although on the trial list for the day. Defendants or counsel are seldom if ever urgent for trial, another important factor in the prompt disposition of these cases. Time, that would otherwise be employed in the regular performance of duty is spent in fruitless attendance in the court by inspectors and collectors. When cases are finally reached, material facts and circumstances are indistinct or forgotten in the lapse of time, which operates unfavorably on the verdict.

Counsel eagerly seize and magnify any want of recollection of conversations held with, or statements made by defendants at the time that milk was condemned and sampled by the inspector. A remarkably retentive memory is therefore important if not indispensable requisite of the inspector's qualifications.

Efforts to convict farmers of shipping adulterated milk to dealers have resulted unfavorably. The plea of not guilty being supported by the testimony of the family and employees of the accused creates a doubt in the minds of the jury and acquittal follows in accordance with the rule of law that "the defendant is entitled to the benefit of the doubt," coupled with the charge of the court that "unless the adulteration is shown to have been done by

the farmer the jury must acquit." To convict a farmer under these conditions cannot be reasonably expected.

The intent and purpose of the Act of 1895, known as the Pure Food Act, is clearly to hold the vendor responsible in whose possession adulterated milk is found for sale. Each and every dealer in this City is aware of the prohibitory and penal provisions of the statute, and every advantage afforded to avoid its violation. Instruction in the use of in the instruments for detecting the watering or skimming of milk is given, as will be seen by the following advisory notice served upon all dealers and vendors in this City:

SIR:—For the purpose of securing compliance with the law prohibiting the sale of impure, adulterated or unwholesome milk, I hereby call your attention to the provisions of the Act of Assembly hereto appended. In order to know that your milk is not adulterated you are advised to provide yourself with a Standard Lactometer and Thermometer, and test all milk received by you for sale or exchange. Instruction in the method of using these instruments will be given by the Assistant Inspectors in their respective districts, or by the Chief Inspector at his office, daily (except Sunday), between 12 M and 3 P. M. The Chief Inspector will also test milk in any doubtful case that may be submitted to him.

This notice is given that every dealer may be fully informed of his personal responsibility in this matter.

By order of the Board of Health.

In view of these facts the fallacy of the assertions of the dealers that prosecutions of them for selling adulterated milk is unjust and oppressive, is too apparent to need further refutation.

A grocer of this City was tried and convicted under the Act of 1895, for selling cotton seed oil for olive oil. In charging the jury the trial Judge interpreted the law as follows: "Ignorance of the character and quality of the article is not defence. The defendant is bound to know the character of the article which he sells as of a particular quality or kind."

Testing Milk.

The methods in use for testing milk to determine watering or skimming, is a matter that interests consumers as well as producers and dealers.

The test used by the inspectors of milk in their daily examinations is the lactometer, or specific gravity test. The lactometer is an instrument of the hydrometer class, and is arranged specially to ascertain the specific gravity of milk. It is graduated from 0 to 130, the former representing the gravity of water, which is 1 or 1.000, and the latter 1.03770 specific gravity. The figures on the stem of the instrument are arbitrary, but their equivalents may be learned by referring to the table.

Innumerable tests by eminent chemists fix the lowest gravity of normal milk at 1.02900, or 100 on the lactometer stem. Where the result by the lactometer is accepted as final and conclusive this may be satisfactory, but it is not so in this city. Gravimetric analysis only determines conclusively the quality of milk. At best, all other methods are approximations, and consequently unreliable as evidence. By way of illustration, suppose a milk shows 1.03190 specific gravity, or 110 on the lactometer, and sufficient water is added to lower the gravity to 1.02900 or 100 lactometer indication. Surely it would not be unadulterated milk although within the prescribed limit of safety. The experience of daily inspections and analysis proves, that the fair average of the milk of a healthy and reasonably fed herd of grade or domestic cows is 1.03190 specific gravity, or 110 lactometer reading. Low gravity is due to an excess of cream or water. No one familliar with milk it may be presumed could fail to discriminate between these causes. The removal of cream raises the gravity of milk according to the care exercised in skimming and the quantity removed. The range on the lactometer for skimmed mlik is from 115 to 130. But normal milk

is frequently met with having a gravity between these limits, therefore, when milk with high gravity is examined it should be carefully scrutinized to determine by the viscosity or body whether it is skimmed or otherwise. Watering or skimming converts milk from a viscous to comparatively a thin or almost translucent liquid. For the purpose of concealing the addition of water or the abstraction of cream, coloring matter is sometimes used. A chemical test is necessary to establish the presence and character of coloring matter. An unusual yellow appearance in milk at other than pasture seasons may safely be ascribed to artificial coloring.

A simple and convenient method to test milk suspected of skimming, is by the use of the creamometer. This is a glass cylinder graduated by lines from 0 to 30, each line indicating one per centum. The tube is filled to the O line with the milk and set away for 24 hours, when the per cent. of cream may be read off by lines, reading downwards. The raising of the cream is facilitated by warming the milk to about 80 degrees Fahrenheit, after which it should be rapidly cooled. Another method is to fill the vessel to the O line with equal portions of milk and water. In case water is added as suggested, the indicated percentage is to be multiplied by 2. It should be borne in mind, that a "heavy bodied" milk presents a greater resistance to the cream rising than a light bodied, hence it is that watered milk creams more rapidly than the unwatered article. Under the microscope the fat globules may be seen floating in this emulsion of caseine, milk sugar, salts or mineral matter and watery fluid or whey. These globules vary in size from 1 | 10,000 to 1 | 25,000 of an inch in diameter, and some are so small that they lack sufficient buoyancy to reach the surface at all.

Centrifugal force even as exhibited in the separator cannot expel all those minute bodies from the milk, so that

from 0.1 to 0.5 per centum of fat may be found in the residue of the separator. Seeing that centrifugal force cannot bring all of the cream to the surface, it is evident that the test suggested is only an approximation. It is sufficiently accurate however for the purpose.

Valne of Lactometer, Degrees in Specific Gravity.

Lactometer.	Gravity.	Lactometer.	Gravity.
0	1.00000	35	1.01015
1	1.00029	36	1.01044
2	1.00058	37	1.01073
3	1.00087	38	1.01102
4	1.00116	39	1.01131
5	1.00145	40	1.01160
6	1.00174	41	1.01189
7	1.00203	42	1.01218
8	1.00232	43	1.01247
9	1.00261	44	1.01276
10	1.00290	45	1.01305
11	1.00319	46	1.01334
12	1.00348	47	1.01363
13	1.00377	48	1.01392
14	1.00406	49	1.01421
15	1.00435	50	1.01450
16	1.00464	51	1.01479
17	1.00493	52	1.01508
18	1.00522	53	1.01537
19	1.00551	54	1.01566
20	1.00580	55	1.01595
21	1.00609	56	1.01624
22	1.00638	57	1.01653
23	1.00667	58	1.01682
24	1.00696	59	1.01711
25	1.00725	60	1.01740
26	1.00754	61	1.01769
27	1.00783	62	1.01798
28	1.00812	63	1.01827
29	1.00841	64	1.01856
30	1.00870	65	1.01885
31	1.00899	66	1.01914
32	1.00928	67	1.01943
33	1.00957	68	1.01972
34	1.00986	69	1.02001

Value of Lactometer, Degrees in Specific Gravity—Continued.

Lactometer.	Gravity.	Lactometer.	Gravity.
70	1.02030	101	1 02929
71	1.02059	102	1.0.958
72	1.02088	103	1.02987
73	1.02117	104	1.03016
74	1.02146	105	1.03045
75	1.02175	106	1.03074
76	1.02204	107	1.03103
77	1.02233	108	1.03132
78	1.02262	109	1.03161
79	1.02291	110	1.03190
80	1 02320	111	1.03219
81	1.02349	112	1.03248
82	1.02378	113	1.03277
83	1.02407	114	1.03306
84	1.02436	115	1.03335
85	1.02465	116	1.03364
86	1.02494	117	1.03393
87	1.02523	118	1.03422
88	1.02552	119	1.03451
89	1.02581	120	1.03480
90	1.02610	121	1.03509
91	1.02639	122	1.03538
92	1.02668	123	1.03567
93	1.02697	124	1.03596
94	1.02726	125	1.03625
95	1.02755	126	1.03654
96	1.02784	127	1.03683
97	1.02813	128	1.03712
98	1.02842	129	1.03741
99	1.02871	130	1.03770
100	1.02900		

An Act to prevent the addition of preservatives or coloring matter to milk or cream was passed at the last session of the Legislature. The title of the Act is "To prohibit the adulteration or coloring of milk or cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same."

Section 1. Be it enacted, etc., That the sale or offering for sale of milk or cream for human consumption in this Commonwealth, to which has been added boracic acid salt, boracic acid, salicylic acid, salicylate of soda or any other injurious compound or substance for artificially coloring, the same shall be a misdemeanor and punishable, etc.

Owing to an error of transcribing, or printing, or perhaps faulty construction and carelessness of the framer of the bill, it is inoperative. The chemical substances named in Section 1 have no coloring properties whatever and when used in milk it is for the purpose of arresting or preventing fermentation or souring. Annatto is the substance chiefly used for coloring milk and cream as well as butter. Its use in milk is to conceal watering or the abstraction of cream, and giving to milk or cream an appearance which is unreal. Irrespective of other considerations, it is a deception and a fraud upon the consumer.

Thomson, in his "Chemistry of Organic Bodies," describes the preparation of annatto as follows:

"The fruit of the plant is a coccus containing thirty or forty seeds, smaller than a pea and having a vermilion red color. To extract this coloring matter the grains are rasped down, water is added, and the whole allowed to remain for some days. A sort of putrid fermentation takes place. The whole is thrown on a drain, and the water which holds the coloring matter in suspension, is collected. The coloring matter gradually subsides.

Dr. Thomson describes annatto "as having no taste; but a disagreeable smell resembling that of putrid urine, and

he adds in a foot note: "This smell is not natural, but is communicated to it in the magazine by adding to it urine from time to time, in order to keep it moist and improve its color."

Dr. F. Crace Calvert in his work on Dyeing and Calico Printing, says: "The paste has a repulsive odor of urine, which is added by those who store it, to keep it moist and impart to it a brighter hue."

A report by Dr. Davenport to the health authorities of Boston, on the result of a microscopic examination of paste annatto, or of the alkaline solution of it as employed for coloring milk, "shows the presence of innumerable bacteria, a necessary result of the putrefactive changes through which the coloring matter has passed. It is not surprising, therefore, that milk to which even the smallest quantity of annatto coloring has been added should sour much more rapidly than pure milk, a fact which has long been known to milkmen, and many times acknowledged by milkmen of whom inquiries have been made."

The following statement shows the aggregate inspections, condemnations, etc., during the year 1897:

Number of inspections	32,834
Number of quarts inspected	545,873
Number of quarts condemned	13,011
Number of samples collected	358
Number of samples collected for bacteriological examination	230
Number of samples analyzed	119
Number of quarts adulterated (water)	8,285
Number of quarts skimmed	4,695
Number of quarts colored	31
Number of cautionary notice	235
Percentage of adulterated milk	1.52
Percentage of skimmed milk	0.86
Percentage of adulterated and skimmed milk	2.38

Monthly Condemnations.

Months.	Per cent.	Months.	Per cent.
January	1.65	July	5.01
February	3.21	August	0.79
March	3.75	September	1.06
April	2.55	October	1.06
May	1.46	November	1.52
June	2.14	December	4.07

Respectfully submitted,

W. J. BYRNES,

Chief Inspector of Milk.

AN ACT

To provide against the adulteration of food, and providing for the enforcement thereof.

Section 1. Be it enacted, etc., That no person shall, within this State, manufacture for sale, offer for sale or sell any article of food which is adulterated within the meaning of this act:

Sect. 2. The term "Food," as used herein, shall include all articles used for food or drink by man, whether simple, mixed or compound.

Sect. 3. An article shall be deemed to be adulterated within the meaning of this act.

(a) In the case of food: (1) If any substance or substances have been mixed with it so as to lower or depreciate or injuriously affect its quality, strength or purity. (2) If any inferior or cheaper substance or substances have been substituted wholly or in part for it. (3) If any valuable or necessary constituent or ingredient has been wholly or in part abstracted from it. (4) If it is an imitation of or is sold under the name of another article.

(5) If it consists wholly or in part of a diseased, decomposed, putrid, infected, tainted or rotten animal or vegetable substance or article, whether manufactured or not, or in case of milk if it is the produce of a diseased animal. (6) If it is colored, coated polished or powdered, whereby damge of inferiority is concealed, or if by any means it is made to appear better or of greater value than it really is. (7) If it contains any added substance or ingredient which is poisonous or injurious to health: Provided, That the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles or ingredients of articles of food, if each and every package sold or offered for sale be distinctly labelled as mixtures or compounds, and are not injurious to health.

Sect. 4. Every person manufacturing, offering or exposing for sale or delivering to a purchaser any article of food included in the provisions of this act shall furnish to any person interested or demanding the same, who shall apply to him for the purpose and shall tender him the value of the same, a sample sufficient for the analysis of any such article of food which is in his possession.

Sect. 5. Whoever refuses to comply, upon demand, with the requirements of section four, and whoever violates any of the provisions of this act shall be guilty of a misdemeanor and upon conviction shall be fined not exceeding one hundred nor less than fifty dollars, or imprisoned not exceeding ninety nor less than thirty days, or both, and any person found guilty of manufacturing, offering for sale, or selling any adulterated article of food under the provisions of this act shall be adjudged to pay, in addition to the penalties herein provided for, all necessary costs and expenses incurred in inspecting and analyizing such adulterated articles of which said person may have been found guilty of manufacturing, selling or offering for sale: Provided, That all penalties and costs for the

violation of the provisions of this act shall be paid to the Dairy and Food Commissioner, or his agent, and by him paid into the State Treasury, to be kept as a fund, separate and apart, for the use of the Department of Agriculture for the enforcement of this act, and to be drawn out upon warrant signed by the Secretary of Agriculture and the Auditor General.

Sect. 6. The agent of the Department of Agriculture, known as the Dairy and Food Commissioner, of this State, shall be charged with the enforcement of all the provisions of this act and shall have the same power to enforce the provisions of this act that is given him to enforce the provisions of the act by which he receives his appointment.

Approved the 26th day of June, A. D. 1895.

DANIEL H. HASTINGS.

ANNUAL REPORT OF THE CHEMIST.

DIVISION OF CHEMICAL ANALYSIS.

Philadelphia, January 20, 1898.

To the President and Members
of the Board of Health.

GENTLEMEN:—During the past year much time has been devoted to water analysis, especially to that of the City supply. In this latter work Mr. J. H. Eastwick has been engaged under the direction of Mr. John C. Trautwine, Jr., Chief of the Bureau of Water. To secure the best results this very important work should be carried on in a systematic manner. An apartment for water analysis exclusively should also be fitted up, which should contain a complete equipment and have the best natural light—that from the northern sky.

Analyses of Water.

The samples of water submitted for analysis may be divided into three classes. (1) Well, river and spring waters to determine their fitness for household use and drinking purposes. (2) Waters from cellars, to learn their probable source from the character and condition of the material in solution and in suspension. (3) For steam-making and manufacturing operations.

All natural waters, even the purest, contain some organic matter. The excess is objected to, especially that of animal origin, which is certain to pass through putrefactive changes. Animal matters passing through the soil become oxidised into compounds believed to be harmless; but this purifying action does not continue for an indefi-

nite period, and the soil will, in time, become so saturated that the soluble organic material will pass through it unchanged. A very small quantity of sewage, which really consists of water in which is suspended an enormous quantity of organic matter, finding its way into a water supply, may contaminate it for a whole neighborhood and, if it carries the specific organisms of disease, is likely to cause an epidemic. The chemist should not, however, assert without qualification that the drinking of any polluted water will cause sickness. He may only declare that, owing to the amount and character of the polluting material, the use of such water is likely to result injuriously. Even after the chemical analysis has been supplemented by bacteriological examination, and the presence of organisms indicating fermentative changes has been determined, the water cannot be said to be disease-producing; indeed, the facts may not support such a position. The Chemist should confine himself to a statement of analytical results and their interpretation without guessing or predicting.

For ordinary sanitary purposes the chemical examination of waters may be limited to the determination of total solid matter, mineral matter, loss on ignition, chlorine, nitrogen as nitrites, nitrates, "free ammonia and albuminoid ammonia." Its condition, reaction and odor when heated are always observed; and when deemed advisable, the oxygen consumed, phosphates, sulphates, lime, magnesia and hardness are estimated. The presence of the poisonous salts of metals is very rare and, in many cases, incompatible with other substances in solution; consequently they need not be looked for unless specially indicated. Of the above-mentioned determinations, the first is of use in furnishing an idea of the general nature of the water, regarded as a solution of mineral and organic substances. It is usually considered that, unless the proportion of total

solids exceeds six hundred parts per million, except in artesian waters and those from mineral springs, the water need not be objected to on this ground alone. Excessive proportions of mineral solids on account of irritation or other physiological action upon the intestinal tract, may render a water undesirable and even dangerous for dietetic purposes; but the limit of safety can best be fixed by determining the character of the salts in solution and by experimental methods in particular cases. The volatile organic matter is determined by igniting the total solids and weighing after cooling then treating with ammonium carbonate, igniting gently and calculating organic matter from loss of weight. This method affords a general idea of the proportion of organic contamination present; the degree of blackening of the solid residue and any deflagration being, at least, useful qualitative indications.

The presence of chlorides in a water not liable to be affected by mineral admixture suggests direct contamination. Where the proportion of chlorine varies from time to time, and is in excess of the average of the district from which it has been taken, it is indicative of sewage pollution. The importance attaching to the estimation of chlorine is due to the fact that this element enters largely into the food of men and animals as common salt and is thrown off in their excretions.

In judging the sanitary quality of a water, it is necessary to take into consideration its origin and the surrounding conditions which affect the chances of contamination Putrefactive decomposition of organic matter is attended by the formation of certain compounds (such as ammonia, nitrites and nitrates) of which quantitative estimations may be made. After the ammonia existing as such has been removed by boiling (after making alkaline) the proportions of albuminous and allied constituents may be measured by the quantity of ammonia produced when the

water is boiled with an alkaline solution of potassium permanganate. The whole of the nitrogen present in organic combination is not obtained in this manner; more or less of the nitrogen in some organic substances being converted into products other than ammonia. Upon these facts, Messrs. Wanklyn, Chapman and Smith have based a method which is in general use yielding, as it does, reliable data assisting in the final decision of the analyst.

Prof. J. W. Mallet, says: "Two entirely legitimate directions seem to be open for the useful examination by chemical means of the organic constituents of drinking water, namely: first, the detection of very gross pollution; and secondly, the periodical examination of a water suplpy, as of a great city, in order that the normal or usual character of the water having been previously ascertained, any suspicious changes which from time to time may occur, shall be promptly detected an dtheir cause investigated."

Nitrites are formed in the second stage of nitrification—all of these changes are due to bacterial agency. They frequently occur in natural waters in minute quantities and their estimation is of great value in forming an opinion as to the wholesomeness of a water. They are evidence of fermentative changes and where they persist indicate continuous pollution. Fresenius says: "Good drinking water contains none." For the quantitative estimation I employ Griess' method, using sulphanilic acid and naphylamine hydrochlorate.

Nitrates, the ultimate point in the oxidation of organic mater, are found in most waters in small quantites.

The origin of nitrates in waters is chiefly animal and not vegetable contamination. Good drinking water should have no color, turbidity or odor; its reaction may be acid if due to carbonic acid gas in solution or slightly alkaline if due to alkaline earthy carbonates. It should not, however, be strongly alkaline or acid. A water that possesses

any of thes bad qualities will, as a rule, be found to hold in solution sufficient impurities to make it objectionable. It may, however, give no sensible indication of contamination and yet be quite unfit to drink. It is always well to supplement the chemical analysis of a water by a bacteriological examination. Sewage contains an immense quantity of organic material and organisms other than those productive of disease, search for the latter often being futile, while proof of pollution is readily ascertained by chemical analysis.

Well Waters.

When reported non-potable, the Board of Health orders the wells to be filled.

No. 1,559. From 6809 Kirby avenue.

Report: This water is surface drainage which by natural filtration has been clarified and aerated. It is perfectly clear, free from odor or taste and contains no harmful organic material. Other samples from this well have been analysed by me and from the results obtained I have reason to believe that the water from this source is not always potable. There is undoubtedly contamination at some remote point but this sample is free from the most objectionable features of the others.

No. 1,561. From Seventy-first street and Woodland avenue.

Report: This water gives no evidence of harmful organic pollution. It does not, however, seem to be sufficiently aerated.

No. 1,565. From 8202 Bowery avenue.

Report: While there is evidence of organic contamination it is not from a near-by source nor is it recent; so that although it is not a pure water nor desirable for drinking, yet owing to thorough oxidation, its use may not be injurious to health.

No. 1,572. Sent by Col. J. Lewis Good, marked "Windmill."

Report: Badly polluted and unsafe for drinking.

No. 1,573. Sent by Col. J. Lewis Good, marked "Cellar."

Report: In its present condition this water may be classed as "fair;" but its character is liable to change for the worse after a rainfall.

No. 1,582. From No. 5 Cottage avenue.

No. 1,583. From No. 14 Cottage avenue.

No. 1,584. From No. 2110 Midvale avenue.

No. 1,585. From No. 2119 Midvale avenue.

Report: These are clear, colorless, odorless waters and sufficiently aerated. There is evidence of surface drainage containing organic matter in small amount, but filtration through the soil has resulted in its thorough oxidation, and the waters should be classed as potable.

No. 1,586. Sent by Col. J. Lewis Good, marked "Windmill."

Report: This water contains the oxidation products of sewage material in large quantity. It is not safe for drinking purposes. The analytical results indicate a more objectionable condition than those from the sample reported upon March 10th. No. 1,572.

No. 1,606. From 2317 Green street.

Report: This water contains a large amount of organic matter of animal origin some of which is not completely oxidised. It is not in a potable condition.

No. 1,626. From artesian well near Bryn avenue and City line.

Report: A soft, potable water. There is no evidence of contamination by sewage infiltration.

No. 1,651. From 1813 Plumb street.

Report: This water is clear and odorless. It is, however, highly contaminated with dangerous substances that

give no evidence to the senses. It has the characteristics of an old well water that has been thoroughly filtered and oxidised in its passage through the soil, but which carries with it the decomposition products of a very large amount of animal organic matter. It is not a safe water for drinking.

No. 1,657. From Pleasant street west of Musgrove street, Germantown.

Report: This water contains a large amount of surface drainage. It is not suitable for drinking.

No. 1,661. From 3613 Vankirk street.

Report: There are no indications of sewage pollution, but simply of surface drainage of a presumably harmless nature. It is one of those waters that one can neither condemn nor approve upon a single analysis because of the uncertainty existing as to the amount and character of the polluting material at different times.

No. 1,664. From 4907 Aspen street.

Report: There is no evidence of recent pollution but, like most waters from old wells there is a comparatively large amount of nitrates and chlorides that have been washed from the soil. At present, the water does not contain any harmful organic matter.

No. 1,666. From spring in Fairmount Park, Forty-ninth and Girard avenue.

Report: A careful analysis shows this to be one of the purest of natural waters.

No. 1,724. From Twentieth street, south of Milk street.

Report: This water shows evidence of harmful organic pollution. It is not a safe water for drinking.

No. 1,725. From 4119-4127 Ashland avenue.

Report: The well from which this water was taken derives its supply from a soil heavily charged with organic filth. The water is, therefore, unfit for drinking.

No. 1,731. From Seventy-second and Gray's avenue.

Report: This is a well water of fair quality. It contains no harmful organic matter.

No. 1,736. From southeast corner Hartwell and Gold streets, Chestnut Hill.

Report: Although this well water gives evidence of surface drainage, yet all the organic matter present is in a thoroughly oxidised and probably harmless condition. There is nothing to indicate sewage pollution.

No. 1,738. From 4537-39 Stiles street. (Sept. 21st.)

Report: The analysis shows the presence of polluting material of animal origin. It is not a safe water for drinking.

No. 1,747. From well on property of G. W. Kochersperger, Esq.

Report: This is a well water of good quality.

No. 1,748. From 26 Washington avenue.

Report: No harmful organic matter is present. It is apparently a sample of water from an old well. The long continued drought may account for its present condition. I would like to have a sample taken after a rainfall.

No. 1,752. From 4537-39 Stiles street (Oct. 13th).

Report: The water flowing into this well passes through soil contaminated with sewage material. There is a slight improvement in the quality of this sample over that taken in September, but still it is not potable. It is true that nearly all the polluting material is oxidised and clarified by filtering through the soil, but there is a small amount undergoing fermentative changes, indicated by the presence of nitrites, that renders the water unsafe for drinking.

No. 1,765. From 238-40 Collom street.

Report: This is a very unsafe water for drinking. It contains animal matter undergoing changes produced by great bacterial activity.

No. 1,766. From 3464 Germantown avenue.

Report: Some of the characteristics of this water are similar to those of No. 1,765, but the more dangerous features of the latter are absent in this sample. It is not, however, a good water for drinking purposes.

No. 1,773. From Twenty-sixth street and Passyunk avenue.

Report: This water, like all the sub-soil water underlying the thickly populated portions of the City, contains a large quantity of salts and a great excess of nitrogenous organic matter. It is not a potable water.

No. 1,789. From 363 Price street.

Report: This water possesses the usual features of well waters, deriving their supply partially or entirely from surface drainage in the thickly populated districts. It does not, at present, contain any unoxidised organic material and its use is not likely to cause illness but there is no certainty of its remaining potable.

No. 1,793. From Lydia street, southwest from Reading Railway tracks.

Report: This water contains a small quantity of sewage material in a state of active decomposition. It is not a potable water.

No. 1,805. From Island road, east of Lincoln avenue.

Report: This water is badly polluted with sewage material.

Waters from Cellars.

No. 1,537. From northeast corner Opal and York streets.

Report: This water contains fresh sewage principally urine, mixed with the City supply. It probably comes from a nearby drain.

No. 1,557. From 1941 Elizabeth street.

Report: It is likely that the source of this water is the City supply coming from a leaky pipe at a considerable distance from the cellar and taking up from the polluted

soil through which it passes a large amount of oxidised animal matter.

No. 1,536. From 1935 Columbia avenue.

Report: The origin of this water is very probably the City supply. It has not been polluted by sewage.

No. 1,604. From 2021 Sergeant street.

Report: There is evidence of remote sewage contamination, such as water takes up in flowing through polluted soil for a considerable distance. I think, however, that the source of this water is the City supply.

No. 1,610. From 4141 Terrace street (April 6th).

Report: This is fresh liquid sewage. It is perfectly useless to employ potassium permanganate to detect sewage infiltrations, neither is oil of peppermint suitable. Use strong brine, taking a sample before applying and another sample some time afterward. Fluorescein is also very effective.

No. 1,627. From 2028 Taylor street.

Report: This water may be either surface, drainage or the City supply, arising some distance from the cellar.

No. 1,631. From 3635 Centre street.

Report: This may be the City supply with a slight admixture of fresh urinous material.

No. 1,634. From 4141 Terrace street (after salting), May 14th.

Report: The sample taken April 6th showed 148.68 parts per million of chlorine. The increase (162.84 parts per million of chlorine in the sample of May 14th is not, in my opinion, sufficiently conclusive to prove that the salted privy well is the source of pollution.

No. 1,644. From 2138 N. Seventh street.

Report: In this case the probabilities based upon the analytical results favor the conclusion that the City supply is the source of this water and that it filters through the soil for a considerable distance. It does not give evidence

of direct sewage pollution—only of such salts as are always present in sub-soil water throughout the City. If an underground stream is known to run through this tract, the chemical composition of the water would not be unlike this. In the later case, a heavy rainfall would greatly increase the flow and a drought would diminish it or cause it to cease.

No. 1,663. From 4916 Lancaster avenue.

Report: The principal feature of this water is the large amount of salt in solution. It also contains a considerable quantity of partially oxidised nitrogenous organic matter not of sewagic origin, but very likely washed from the soil. I cannot say that the origin of this water is the city supply, because of the impurities it contains but the probabilities are in that direction. The presence of such an enormous quantity of salt (chlorine 1,045 parts in a million), needs explanation.

No. 1665. From 3005 Page street.

Report: This appears to be Schuylkill River water slightly polluted by organic matter, such as might have been introduced after reaching the cellar.

No. 1667. From the Thomas Building, Thirty-first and Ridge avenue.

Report: The source of this water may have been the City supply. It has washed from the soil the salts of nitrification. It does not contain sewage material.

No. 1690. From 154 north Eighth street.

Report: This is like Schuylkill river water with fresh urinous admixture in small amount.

No. 1691. From 821 Cherry street.

Report: This water is intensely acid, with full sulphuric acid and has an odor resembling prussic acid. It contains no sewage material and might have come from the City supply.

No. 1726. From 240 north Ninth street.

Report: This water contains urinous products but not in sufficient amount to indicate direct sewage pollution. It is likely that this water has taken up impurities from the soil through which it has passed and that its origin is the city supply.

No. 1728. From 2047 Leithgow street.

Report: This water probably comes from a leaky drain located some distance from the cellar.

No. 1,729. From 2351 Hope street.

Report: This water probably comes from a drain. It could, however, have received its impurities from soil charged with animal organic matter.

No. 1,730. From Freihoffer's Bakery, Twenty-fourth and Master streets.

Report: The sample resembles ground-water or drainage from the surrounding soil. There is no evidence of direct sewage infiltrations or of water from the City supply.

No. 1,732. From 1133 S. Ninth street.

Report: This water contains organic material washed from the soil and, in addition, an exceedingly large amount of chlorine in the form of salt. The latter cannot be accounted for by sewage infiltrations. I am certain that the drainage into this cellar receives salt from some source.

No. 1,735. From 1000 Woodbine avenue.

Report: There is nothing to indicate that the City supply or sewage infiltrations as the source of this water. It most resembles natural sub-soil water.

No. 1,743. From 3224 Sydenham street.

Report: Water from a leaky drain percolating through the soil for some distance would have these characteristics.

No. 1,758. From 1732 Bouvier street.

Report: This water comes from a City supply pipe.

No. 1,770. From 2137 Birch street.

Report: This water has no distinctive features indicating its probable source. It does not contain sewage mate-

rial. It may be the ground-water of the district, or it may come from the City supply, with a slight probability in favor of the former supposition.

No. 1,774. From southwest corner Ninth and Morgan streets.

Report: The analysis does not indicate the City supply as the source of this water, but rather the natural sub-soil water of the locality. It does not contain sewage material.

No. 1,788. From 1745 N. Twenty-second street.

Report: It is difficult to form a definite opinion with respect to the source of this water. It does not contain sewage material and has probably taken up ammonium compounds and salt from the soil. So far as the chemical analysis affords data for judging, it may have come from the City supply a short distance away or it may be surface water caused by rains.

Milk.

Our knowledge of the composition and properties of milk is founded upon an extremely large number of chemical analyses. Milk is a complete food, containing all the elements of a varied diet; nitrogenous substances, a fat easy of digestion, sugar and mineral salts. The highest authorities agree that these substances are able to repair waste in the animal economy, keep up its heat, and furnish all material necessary for health and growth. The use of milk is by no means confined to the nourishment of the young. It enters largely into the dietary of adults in the form of cream, butter and cheese, and can alone be used as the entire nourishment in certain diseases.

Milk is an excellent medium for the growth and distribution of some of the pathogenic germs. This is especially true of sweet milk, sour milk offering a less favorable medium for their growth. Many of them grow readily in milk without producing any visible effect.

The germs of typhoid fever, tuberculosis and diphtheria may thus grow without indicating their presence by any external changes. Their ultimate source is the earth, air or water, but the methods by which they get into the milk are: (1) from the hands of the milker or from the udder during milking; (2) from the milk vessels that have not been properly cleaned; (3) from the air of the stall whcih is always well supplied with bacteria; (4) from the water used to adulterate the milk.

Legal Standard for Milk.

It is an incorrect use of words to speak of a legally pure milk, for it is not the object of a legal standard to fix a *standard of purity*, but rather to prevent flagrant adulteration. While a few abnormal milks are found close to the minimum standards, yet the vast majority of pure milks are far above the legal standards in percentage constituents, owing largely to their richness in cream.

A trifling amount of adulteration by added water would lower the percentage of solids other than fat, not only below any legal standard, but also below that found in the milk from a herd of cows of any breed, however, inferior or in any physical condition, however unsatisfactory. Experience proves that a legal standard *does* protect the consumer by preventing the sale of adulterated and impure milk. Pure cow's milk may be defined as milk produced by a cow well fed and in a healthy condition. There is a difficulty in the consideration of this matter which is owing to different conceptions as to what constitutes a proper milk standard. With some, any kind of milk produced by the cow should be considered pure milk for all purposes and no standard should be fixed that, under any circumstances, would condemn such an article as adulterated. Cows that are badly fed and improperly cared for will yield poor milk.

A just standard will exclude such milk from the market. Another view is that it is a minimum limit of solid constituents fixed by law, below which milk shall be deemed to be adulterated; this limit to be based upon the fullest knowledge of the composition of milk and lower than a fair average. It is obvious that such a standard can only be established after a thorough investigation of the quality of milk *in the territory designed to be covered.* Satisfactory data were in the possession of theLegislature of Pennsylvania when, by the Act of July 7, 1885, the minimum standard for milk was fixed at 12.50 per cent. by weight of total solids and 3.00 per cent. by weight of butter fat. Hitherto, I have adopted this standard in calculating the amount of adulteration, deeming such a standard to be as fair for Philadelphia as for other portions of the State. My experience in the analysis of milks shipped to this city throughout the year demonstrates that a fair average of quality contains from 13.00 to 13.50 per cent. of total solids and from 4.00 to 4.50 per cent. of butter fat, and the people are entitled to this kind of milk. A milk standard cannot be considered too high if the dairyman can readily and uniformly furnish milk of the required quality. In Massachusetts the standard is 13 per cent. and 3.70 per cent.; in Minnesota, 13 per cent. and 3.50 per cent.; in New Hampshire, 13 per cent.; in Iowa, 13.13 per cent. and 3.50 per cent. of total solids and fat respectively, and the dairymen in these States have no trouble in meeting the requirements of the lay. Furthermore, as the quality has improved, the quantity consumed has increased. It is a significant fact that these standards were fixed with the consent and approval of the dairymen themselves.

Skimmed Milk and Adulteration.

There are four ways by which skimmed milk can be sold in this City at a larger profit to the dealer than whole

milk: (1) by selling it as whole milk; (2) by using it as an adulterant of whole milk; (3) by placing the creamery refuse known as separator milk on a par with the hand-skimmed article and selling it for skimmed milk; (4) by blending separator and hand-skimmed milk. All of these methods are employed by unscrupulous milk dealers. The practice of selling skimmed milk for whole milk is declining because of the effective work of the Milk Inspectors. The *blending* of milk is, however, on the increase and openly practiced. The skillful manipulator of skimmed and whole milk can readily produce a mixture just above the legal standard and thus escape prosecution. It always pays the consumer to buy whole milk of good quality instead of cream and skimmed milk as the dealer and farmer prepare them.

Positive evidence of adulteration is furnished, a fair sample of herd milk being taken:

(1.) When the Sp. Gr. at 60 degrees F. is less than 1.029 and the fat is 4 per cent. or over, the milk is watered.

(2.) When the Sp. Gr. at 60 degrees F. is more than 1.035 and the fat less than 4 per cent., the milk is skimmed.

(3.) When the fat is 3 per cent. or less and the total solids more than 12.00 per cent., the milk is skimmed.

(4.) When the fat is 3 per cent. or less and the Sp. Gr. at 60 degrees F. is less than 1.0319, the milk is skimmed and watered.

A law that will permit the sale of whole milk containing less than 3.50 per cent. of butter fat and less than 9 per cent. of solids not fat will foster adulteration. I may add that there is need for a legal standard of quality for condensed milks. In their manufacture gelatine, glucose and antiseptics are often employed and skimmed milk and foreign fats substituted for full cream milk.

Milk Analyses.

No.	Percentages.				Remarks.
	Total Solids.	Fat.	Solids not Fat.	Ash.	
1,539	12.12	4.20	7.92	0.62	Watered.
1,547	11.60	3.45	8.25	0.63	Watered.
1,548	10.77	2.65	8.12	0.60	Skimmed and watered.
1,549	10.33	2.80	7.53	0.57	Skimmed and watered.
1,550	10.73	1.75	8.93	0.67	Skimmed.
1,551	9.63	0.55	9.08	0.70	Skimmed—separator.
1,553	7.18	1.85	5.28	0.33	Watered.
1,554	12.27	4 15	8.12	0.60	Watered.
1,562	10.07	1.50	8.57	0.65	Skimmed and watered.
1,563	10.70	4.80	5.90	0.47	Watered, cream added.
1,566	11.47	3.15	8.32	0.63	Watered.
1,567	10.78	2.50	8.28	0.63	Skimmed and watered.
1,569	9.90	2.05	7.85	0.50	Skimmed and watered.
1,570	13.37	4.00	9.37	0.70	A good milk.
1,571	12.27	4.20	8.07	0.60	Watered.
1,575	11.26	3.35	7.91	0.60	Watered.
1,576	12.17	3.70	8.47	0.63	Watered.
1,577	11.13	3.25	7.88	0.58	Watered.
1,578	10.67	3.15	7.52	0.57	Watered.
1,580	11.16	2.05	9.11	0.70	Skimmed.
1,581	11.70	2.60	9.10	0.70	Skimmed.
1,588	12.33	4.05	8.28	0.63	Watered.
1,589	11.50	3.70	7.80	0.58	Watered.
1,591	11.40	3.55	7.85	0.58	Watered.
1,594	12.53	3.95	8.58	0.63	Watered.
1,595	9.67	1.35	8.32	0 62	Skimmed and watered.
1,596	9.50	1.10	8.40	0.62	Skimmed and watered.
1,598	9.13	3.05	6.08	0.48	Watered.
1,609	10.20	2.55	7.65	0.55	Skimmed and watered.
1,611	12.28	4.08	8.20	0.63	Watered.
1,612	14.94	6.67	8.27	0.65	Cream added.
1,616	10.66	2.23	8.43	0.63	Skimmed and watered.
1,621	10.78	2.50	8.28	0.52	Skimmed and watered.

Milk Analyses—Continued.

No.	Percentages.				Remarks.
	Total Solids.	Fat.	Solids not Fat.	Ash.	
1,622	11.54	3.48	8.06	0.54	Watered.
1,623	11.63	3.25	8.38	0.66	Watered.
1,624	13.08	3.48	9.60	0.73	Some cream abstracted.
1,625	11.58	3.38	8.20	0.58	Watered.
1,628	8.67	0.62	8.05	0.60	Separator.
1,630	9.46	1.30	8.16	0.61	Skimmed and watered.
1,632	12.17	4.05	8.12	0.63	Watered.
1,637	8.73	0.90	7.83	0.58	Skimmed and watered.
1,641	6.67	2.00	4.67	0.33	Watered.
1,645	10.10	0.45	9.65	0.77	Separator.
1,648	13.03	4.85	8.18	0.66	Watered.
1,652	11.77	3.00	8.77	0.68	Skimmed and watered.
1,653	11.90	3.55	8.35	0.65	Watered.
1,662	9.63	2.90	6.73	0.53	Skimmed and watered.
1,672	7.77	0.77	7.00	0.48	Skimmed and watered.
1,673	8.66	0.65	8.01	0.66	Skimmed and watered.
1,674	12.27	3.70	8.57	0.67	Watered.
1,676	11.06	3.10	7.96	0.63	Watered.
1,677	10.13	1.55	8.58	0.66	Skimmed and watered.
1,678	13.56	4.95	8.61	0.65	Watered.
1,679	11.63	2.55	9.08	0.67	Skimmed.
1,680	10.56	2.65	7.91	0.62	Skimmed and watered.
1,681	12.20	3.75	8.45	0.65	Watered.
1,682	12.20	4.00	8.20	0.63	Watered.
1,683	12.66	4.55	8.11	0.62	Watered.
1,684	9.17	1.05	8.12	0 62	Skimmed and watered.
1,685	11.70	3.70	8.00	0.60	Watered.
1,687	12.77	4.75	8.02	0.63	Watered.
1,688	11.97	3.60	8.37	0.65	Watered.
1,689	8.30	2.40	5.90	0.46	Watered.
1,692	8.77	0.65	8.12	0.66	Skimmed and watered.
1,693	10.00	2.25	7.75	0.61	Skimmed and watered.
1,694	13.16	4.30	8.86	0.70	Abnormal—solids not fat.

Milk Analyses—Continued.

Nos.	Percentages.				Remarks.
	Total Solids.	Fat.	Solids not Fat.	Ash.	
1,695	10.50	2.65	7.85	0.62	Skimmed and watered.
1,696	11.66	3.35	8.31	0.65	Watered.
1,697	10.80	2.80	8.00	0.63	Skimmed and watered.
1,698	9.40	1.75	7.65	0.60	Skimmed and watered.
1,700	12.03	3.72	8.31	0.60	Watered.
1,703	8.70	0.65	8.05	0.65	Skimmed and watered.
1,704	8.70	0.60	8.10	0.65	Skimmed and watered.
1,706	9.77	2.10	7.67	0.56	Skimmed and watered.
1,707	9.10	1.10	8.00	0.61	Skimmed and watered.
1,708	8.57	0.85	7.72	0.60	Skimmed and watered.
1,712	9.95	1.05	8.90	0.71	Fore milk.
1,713	11.57	2.40	9.17	0.71	Fore milk.
1,714	10.60	1.40	9.26	0.72	Fore milk.
1,715	12.40	3.02	9.38	0.73	Fore milk.
1,717	14.73	5.40	9.33	0.76	Excellent milk.
1,718	13.90	4.45	9.45	0.75	Exeellent milk.
1,719	13.97	4.60	9.37	0.76	Excellent milk.
1,720	12.86	4.15	8.71	0.67	Watered.
1,333	6.20	1.35	4.85	0.46	Skimmed and badly watered.
1,734	12.03	3.85	8.18	0.62	Watered.
1,739	8.83	1.15	7.68	0.58	Skimmed and watered.
1,740	7.43	1.50	5.93	047	Skimmed and watered.
1,741	9.80	0.60	9.20	0.70	Separator.
1,745	10.47	1.20	9.27	0.73	Skimmed.
1,746	9.40	2.35	7.05	0.53	Skimmed and watered.
1,749	9.05	2.05	7.07	0.50	Skimmed and watered,
1,750	12.90	4.65	8.25	0.67	Watered.
1,753	9.83	1.70	8.13	0.63	Skimmed and watered.
1,754	9.40	0.47	8.93	0.70	Skimmed and watered.
1,762	10.88	3.55	7.33	0.58	Watered.
1,763	5.20	1.35	3.85	0.30	Skimmed and badly watered.
1,764	11.57	3.88	7.69	0.60	Watered.
1,769	8.76	1.20	7.56	0.60	Skimmed and watered.

Milk Analyses.—Continued.

No.	Percentages.				Remarks.
	Total Solids.	Fat.	Solids not Fat.	Ash.	
1,771	10.86	2.55	7.81	0.62	Skimmed and watered.
1,772	10.03	2.90	7.13	0.56	Skimmed and watered.
1,775	10.33	0.80	9.53	0.76	Skimmed.
1,777	9.70	2.65	7.05	0.48	Skimmed and watered.
1,778	10.48	2.42	8.06	0.72	Skimmed and watered.
1,780	9.25	1.50	7.75	0.55	Skimmed and watered.
1,781	11.55	3.80	7.75	0.47	Watered.
1,782	11.85	3.94	7.91	0.53	Watered.
1,783	11.60	3.90	7.70	0.55	Watered.
1,784	12.80	3.60	9.20	0.66	Colored.
1,785	12.10	3.80	8.70	0.58	Watered.
1,786	10.73	2.55	8.18	0.63	Skimmed and watered.
1,787	40.06	33.36	6.70	0.42	Cream (separator).
1,794	9.50	0.35	9.15	0.70	Separator.
1,798	13.30	3.95	9.35	0.78	A good milk.
1,800	11.63	3.05	8.58	0.67	Watered, skimmed and colored.
1,801	10.03	1.95	8.08	0.67	Skimmed and watered.
1,804	9.80	0.95	8.85	0.67	Skimmed and watered.
1,808	10.77	1.05	9.72	0.76	Skimmed.
1,809	10.50	1.25	9 25	0.70	Skimmed.
1,810	10.30	3.05	7.25	0.55	Watered.
1,813	37.15	29.60	7.55	0.50	Hand-skimmed cream.
1,814	31.15	22.10	9.05	0.53	Hand-skimmed cream.
1,815	8.77	0.50	8.27	0.65	Skimmed and watered.

Unsweetened Condensed Milks.

No.	Total solids.	Fat.	Solids not fat.	Ash.	Times condensed.	Fat in original milk.	Remarks.
1792	39.92	12.61	27.31	2.12	3.034	4.15	Boric acid.
1795	42.40	12.60	29.80	2.30	3.31	3.81	
1796	41.85	12.50	29.35	2.30	3.26	3.83	
1797	38.75	11.80	26.95	2.15	2.994	3.94	

Sweetened Condensed Milks.

No.	Total solids.	Fat.	Proteids.	Milk sugar.	Ash.	Cane sugar.	Times condensed.	Fat in original milk.
1799	67.30	6.75	10.80	11.24	2.00	36.51	2.67	2.54

This was made from skimmed milk:

No.	Total solids.	Fat.	Proteids.	Milk sugar.	Ash.	Cane sugar.	Times condensed.	Fat in original milk.
1802	75.30	9.11	9.57	11.76	1.78	43.08	2.568	3.54

Unusual Substances Examined.

Among other work accomplished during the year was the chemical examination of cigars for morphine and aconite, chipped beef, grape juice, "Formalin," "Formochlorol," "Viavi" capsule, polishing powder, effluent water of Pridham's Ozone Process of water purification, ham, liquid putz, peptogenic milk powder, tankage, carbolic acid, clay, blood-stains and aniline yellows for coloring milk.

Respectfully submitted,

WM. C. ROBINSON, JR.,
Chemist.

REPORT OF MR. JOS. H. EASTWICK,

Upon systematic examination of the City's Water Supply, February 10, 1898.

Philadelphia, February 17, 1898.

With the object of making examinations of the Schuylkill River water and of determining the causes of fluctuations in its soluble constituents, samples have been taken at regular intervals during the last six months of 1897—every Monday and Thursday.

In summing up the results of this investigation, it may be well to record some ideas that have suggested themselves.

The increase or diminution of the amount of chlorine in river water is, to some extent, an indication of the amount of sewage material in solution. It does not, however, follow that the free and albuminoid ammonias must be in the same ratio. For instance, during the dry weather of September and October, there is a notable increase in the chlorine, but at the same time the ammonias do not vary widely. This is explained by the fact that the amount of pollution is determined both by the surface water flowing into the river and by the sewage of the populated places along its banks. The proportion of chlorides caused by the former is much less than that from sewage.

During the dry season the surface water decreases largely making the volume of water in the river much less, but the sewage from the cities and towns continues the same. During heavy rainfalls the surface water carries with it

organic matter of both vegetable and animal origin. It is, therefore, obvious that in dry seasons the chlorine should increase and vice versa.

The nitrates and nitrites are the result of oxidation, and increase or diminish in proportion to the amount of organic nitrogen dissolved in the water. The oxidation first produces "free ammonia," then nitrites and finally nitrates. The nitrites in Schuylkill water are usually low and often absent.

The "oxygen consumed" is a measure of the total organic matter in solution both of animal and vegetable origin. When there is a small amount of surface water flowing into the river, the oxygen consumed is usually low. Non-nitrogenous organic matter may also be considered a pollution.

The "hardness" of the water is caused by the lime sulphate and the lime and magnesia carbonates. During the dry season the mineral constituents are concentrated on account of the small flow of water. These lime and magnesia salts are derived entirely from the waters of the limestone country. During the months of September and October, when there was very little rain, the "hardness" increased to over 125 parts per million. In November and December the rainfall was much greater and the "hardness" diminished in proportion. The lime sulphate corresponds to the permanent hardness; the difference between the lime sulphate and the total hardness shows the temporary hardness caused by the lime and magnesia carbonates. The latter may be removed by boiling.

The "opacity" in this instance was determined by weighing the suspended matter. It is often difficult to retain this suspended matter upon the filter, it being in such a finely divided condition. The filter is first dried and weighed, and the filter with the suspended matter is afterward dried and weighed and the difference called "opacity."

The opacity of the water fluctuates greatly, increasing rapidly after heavy rainstorms. It varies from almost nothing to 130 parts per million.

It would be well to have all samples taken at points some distance out in the stream, as there is danger from pollution from the bottom of the river when they are collected too near the shore and would thus not represent a fair average sample of the river water. The sides and bottom of the river accumulate much sewage matter undergoing decomposition.

The systematic examination of streams will often facilitate the detection of sources of pollution. It is also of service in comparing the mineral substances in solution and the matter in suspension at different seasons of the year, and their effect upon sedimentation and filtration. At times the suspended matter consists largely of coal-dust from the coal regions. This coal-dust, however, settles more rapidly than other suspended matter, and carries down with it the finely divided silt which is usually slow in settling, and the water is left bright and clear.

The few examinations of Delaware River water made during the past year show a much better quality of water than those obtained from the Schuylkill. The organic impurities are much less in the former and the amount of lime sulphate is very small. These considerations make the Delaware River water more suitable as a water supply.

It would be well to have a separate room for water analysis. It should have a good natural light preferably facing the north. There is serious objection to working on waters in a laboratory used for general analytical purposes, in which there are always more or less fumes and gases which are readily absorbed by water, and interfere greatly with the determination of impurities therein.

Samples taken from Schuylkill River above Intake at Spring Garden Pumping Station.

Date.	Nitrogen as				Part per Million.					Remarks.
	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.	Oxygen. Consumed.	Hardness as $Ca\,CO_3$.	Sulphate of Lime.	Suspended Matter.	
July 28.....	.174	.172	Traces.	.5	2.83	4.35	.....	.....	.....	Turbid.
Aug. 9.....	.060	.108	Traces.	.55	4.24	1.90	.....	.....	.....	Clear.
12.....	.240	.080	Present.	.6	4.21	1.98	.....	.....	.....	Clear.
16.....	.093	.070	Present.	.6	4.60	1.98	.....	.....	.....	Clear.
19.....	.078	.056	Present.	.5	4.24	2.21	.....	.....	.....	Clear.
23.....	.066	.068	None.	.4	4.95	2.50	110.	.....	.....	Clear.
26.....	.040	.084	None.	.6	4.60	2.32	111.	.....	.....	Clear.
30.....	.034	.098	None.	.4	4.60	3.00	111.	.....	.....	Clear.
Sept. 2.....	.032	.060	Traces.	.7	5.31	3.19	112.	69.	.....	Clear.
6.....	.100	.064	None.	.6	5.30	2.00	115.	65.	.....	Clear.
9.....	.026	.072	Traces.	.7	5.31	1.75	120.	69.5	.....	Clear.
13.....	.102	.070	Present.	.7	5.31	1.90	120.	63.6	.....	Clear.
16.....	.080	.066	None.	.7	5.31	1.90	121.	63.6	.....	Clear.
20.....	.080	.134	Traces.	.6	7.00	1.93	123.	60.7	.....	Clear.
27.....	.038	.066	.003	.5	6.70	2.16	127.	64.4	.....	Clear.
30.....	.056	.084	.002	.5	6.70	2.15	124.	65.3	.....	Clear.

Samples taken from the Schuylkill River above intake at Spring Garden Pumping Station—Continued.

Date.	Nitrogen as				Part per Million.					Remarks.
	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.	Oxygen Consumed.	Hardness as $CaCO_3$	Sulphate of Lime.	Suspended Matter.	
Oct. 4	.060	.108	.003	.6	7.00	2.82	120.	62.1		Clear.
7	.080	.078	.0015	.5	6.70	2.45	123.	58.4		Clear.
11	.060	.120	.0012	.7	7.00	2.86	125.	67.4		Clear.
12	.080	.068	.0015	.6	6.70	2.30				Clear.
14	.070	.128	.0015	.7	6.70	2.80	127.	75.		Clear.
18	.080	.080	.001	.5	6.00	2.12	130.	79.		Clear.
21	.100	.100	.0007	.5	6.37	1.80	130.	87.		Clear.
25	.080	.090	.001	.7	6.70	2.30	136.	68.		Clear.
28	.060	.112	.001	.8	6.40	2.70	127.	63 3		Clear.
Nov. 1	.080	.140	.0007	.6	6.40	3.60	130.	76.		Clear.
4	.230	.098	.001	.8	3.50		104.			Heavy rain.
8	.094	.124	.001	1.1	3.90	3.00	78.	43.		Turbid.
11	.096	.120	.001	1.5	3.90	3.00	78.	43.2		Clear.
15	.024	.084	.001	1.5	3.90	2.25	90.	40.		Clear.
17	.046	.140	.0007		4.60					
18	.034	.084	.0007	.7	4.60	2.00	91.	70.		Clear.

Samples taken from Schuylkill River above Intake at Spring Garden Pumping Station.—Continued.

Date.	Nitrogen as				Part per Million.					Remarks.
	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.	Oxygen Consumed.	Hardness as $CaCO_3$.	Sulphate of Lime.	Suspended Matter.	
Nov. 22.....	.044	.094	.001	1.2	5.30	1.50	84.	53.	.....	Clear.
24.....	.080	.070	.0016	1.2	5.3	1.	97.	45.	.....	Clear.
29.....	.078	.116	.001	.7	4.2	4.	72.	36.	129.	Clear.
Dec. 2.....	.046	.080	None.	1.2	4.2	2.5	78.	52.5	129.	Clear.
6.....	.040	.124	.001	1.	3.5	3.3	58.	26.5	129.	Clear.
9.....	.080	.116	.0012	1.	3.5	2.	65.	36.5	24.	Clear.
13.....	.044	.106	.0007	1 2	4.	1.3	72.	33.3	14.	Clear.
16.....	.070	.104	None.	1.	3.	2.7	59.	28 4	110.	Clear.
20.....	.056	.080	None.	1.2	3.2	2.5	59.	42.9	26.	Clear.
23.....	.064	.164	None.	1.5	3.5	2.	72.	36.	5.	Clear.
27.....	.064	.090	None.	1.4	3.5	1.8	72.	44.	25.	Clear.
30.....	.064	.070	None.	1.2	3.5	2.	84.	39.	4.	Clear.

Sundry Samples of Schuylkill River Water.

Date.	Nitrogen as				Parts per Million.					Remarks.
	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Chlorine.	Oxygen Consumed.	Hardness as $CaCO_3$.	Sulphate of Lime.	Suspended Matter.	
Mar. 30	.03	.082	None.	1.50	4.24					See Note 1.
30	.014	.050	None.	2.50	6.72					From Wissah'k'n Creek.
Apr. 10	.20	.20	None.	1.00	3.87					From Wissah'k'n Creek.
10	.15	.18	None.	1.00	3.18					See Note 2.
30	.007	.065	None.	1.50	5.66					From Wissah'k'n Creek.
30	.028	.083	None.	0.80	3.18					
May 3	.098	.196	None.	0.70	3.89					From Wissah'k'n Creek.
3	.056	.160	None.	0.50	3.53					See Note 3.
July 16	.014	.064	None.	1.00	7.41					From Wissah'k'n Creek.
16	.070	.090	Traces.	0.50	6.01					See Note 4.
23	.084	.124	Present.	1.00	4.43					From Wissah'k'n Creek.
23	.150	.160	Present.	0.80	3.54					See Note 4.
Nov. 17	.062	.152	.0012		4.60					See Note 5.
18	.038	.072	.0014		5.60					South Basin Stop House.
18	.030	.078	.0014		5.30					South Basin Inlet Pool.
20	.036	.074	.0014	1.2	5.3					Above Wissah'k'n Creek.

Sundry Samples of Schuylkill River Water—Continued.

Date.	Nitrogen as				Parts per Million.					Remarks.
	Free Ammonia.	Albuminoids Ammonia.	Nitrites.	Nitrates.	Chlorine.	Oxygen Consumed.	Hardness as $Ca\ CO_3$.	Sulphate of Lime.	Suspended Matter.	
Nov. 20.....	.060	.096	.0014	1.2	5.3	.....	.....	.....	.....	Queen Lane Pump'g Sta.
21.....	.006	.044	None	1.2	5.0	.....	.....	.....	.....	From faucet in Germantown. Note 6.
Dec. 27.....	.080	.096	.0006	1.0	4.2	.....	.....	.....	.....	Queen Lane Reservoir.
30.....	.040	.058	.0007	1.3	3.5	1.5	.....	.....	.....	Queen Lane Pump'g Sta.
30.....	.040	.052	.0005	1.3	6.0	1.2	.....	.....	.....	From Wissahickon creek

Note 1. The Wissahickon sample is a purer water than the Queen Lane sample, being freer from organic nitrogen.

Note 2. Both samples contained considerable suspended matter carried into the streams from the surrounding country by the recent heavy rains. Both contained an unusual amount of free and albuminoid ammonias. The Wissahickon showed the greatest amount of organic nitrogen. It is hardly necessary to say that both samples are in an unfit condition for drinking purposes.

Note 3. Both waters were very turbid from the heavy rain the night before.

Note 4. The samples were taken about noon. The presence of nitrites in the above streams is not usual and indicates nitrogen compounds in process of oxidation. The samples taken on the 23d give a very decided reaction for nitriates; these last were taken after heavy rains and the water was quite turbid.

Note 5. The two samples are from Queen Lane Reservoir and practically the same, and the nitrogenous matter is about half that found in the sample taken from the river on the 17th instant.

Note 6. From letter to John C. Trautwine, Jr., Esq., Chief of Bureau of Water, 12-1-97. "Referring to your communication of yesterday, in which you quote Mr. Wister's complaint regarding the bad condition of the water supplied at his house in Germantown, I would say that the examination of the water in the Schuylkill at Spring Garden Pumping Station, on Monday, showed the highest percentage of organic carbon (oxygen consumed) of any that I have examined since taking weekly samples. The water was very turbid, of a reddish color, no doubt owing to surface drainage in the "Red Shale" district. The high percentage of organic carbon is undoubtedly due to decaying vegetable matter. The water in its passage through the supply pipes undergoes a chemical change, the organic matter being partially oxidised, giving rise to gases having

an offensive odor. These hydrocarbon gases are liberated as the water escapes from the faucet. This is more noticeable at points farthest from the reservoir. The impurities are not increased but, as the analysis shows, diminished after the water leaves the reservoir.

Samples of Water taken from the Lehigh Avenue Reservoir May 24, 1897.

SURFACE SAMPLE.

Free ammonia	.018 parts per million.
Albuminoid ammonia	.100 " " "
Nitrogen as nitrites	None.
Nitrogen as nitrates	Traces.
Chlorine	4.60 parts per million.

BOTTOM OF BASIN.

Free ammonia	.018 parts per million.
Albuminoid ammonia	.126 " " "
Nitrogen as nitrites	None.
Nitrogen as nitrates	None.
Chlorine	4.60 parts per million.

The bottom of the basin was covered with a growth of grass and weeds in apparently healthy condition judging from the pieces attached to the bottles when drawn up. The results of the chemical examination showed a marked difference in one respect, from the usual Schuylkill water in its best condition, there being no nitrates present, or at least a faint trace in the water at the surface and none at the bottom. As the water in the reservoir has been undisturbed for some time, it is probable that the nitrates have been assimilated by the plants growing in the water as it is in this form that nitrogen is taken up by plant life. The growth of aquatic plants is therefore an advantage, to a certain extent, in purifying the water; that is, so long as decay of the plants does not take place. If the plants are exposed above the water decay sets in and the products of decay are taken up by the water and tend to its contamination. The bacteriological examination shows that the colonies in the deep water are less than one half the number of those in the surface water, which would

Samples taken from the Schuylkill River in the vicinity of Reading, Pa.

Reaction.	No.	Date.	PARTS PER MILLION.												
			NITROGEN AS				MINERAL CONSTITUENTS.								
			Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Nitrates.	Free Sulphuric Acid.	Sulphate of Lime.	Carbonate of Lime.	Sulphate of Magnesia.	Carbonate of Magnesia.	Sulphate of Iron and Alumina.	Carbonate of Iron and Alumina.	Silica.	Chloride of Sodium.
Acid	L. 18	June 25	.194	.024	.....	.20	20.8	77.2	.....	53.7	.....	20.9	.....	9.6	6.45
Neutral	M. 19	25	.154	.092	.....	2.00	.....	81.4	.....	7.6	25.2	.....	1.1	6.2	5.27
Neutral	K. 22	25	.160	.040	.....	.50	.....	75.3	.....	26.7	14.4	.....	1.8	6.5	5.85
Alkaline	V. 25	25	.040	.060	.....	.50	.....	78.5	3.6	.....	31.2	.....	0.9	6.5	5.85
Acid	L. 18	Aug. 4	.128	.040	.....	.30	9.0	105.6	.....	22.0	.....	46.4	.....	8.5	4.10
Alkaline	M. C.	4	.012	.030	.....	.80	.....	6.8	51.4	.....	24.1	.....	1.5	3.5	3.50
Alkaline	W. C.	4	.030	.010	.....	1.50	.....	5.3	64.0	.....	42.2	.....	1.6	10.6	4.10
Acid	L. M. 19	4	.088	.024	.....	.30	11.0	77.0	.....	57.3	.....	10.0	.....	8.4	4.10
Neut al	S. 21	4	.112	.046	.....	.40	.....	75.0	.....	48.9	.....	3.0	.....	7.3	4.10
Acid	L. 18	Sept. 20	.....	.....	.....	.....	15.8	138.2	.....	121.5	.....	74.4	.....	11.1	3.30
Acid	L. M. 19	20	.....	.....	.....	.....	7.4	125.3	.....	93.6	.....	17 3	.....	7.2	3.30
Alkaline	M. C.	20	.....	.....	.....	.....	.....	5.6	65.0	.....	30.6	.....	1.5	8.3	3.50
Alkaline	W. C.	20	.....	.....	.....	.....	.....	3.74	66.0	.....	44.1	.....	1.2	9.0	4.60
Neutral	S. 21	20	.....	.....	.....	.....	.....	120.46	.....	72.2	7.2	.....	2.2	9.5	4.60

indicate that the absence of nitrates in the deep water has some relation to the number of bacteria contained therein.

Samples of water from Schuylkill River at several points as follows, June 25, 1897:

L 18.—Herbines' dam, near Leesport, before reaching the limestone water.
M 19.—Maiden creek, at the mouth of the stream.
K 22.—Kissinger's dam, at northern boundary of the City of Reading.
V 25.—Vincent's dam, at a point about two miles above Spring City and about five miles below Pottstown.

Samples of water from Schuylkill river, as follows, August 4, 1897:

L No. 18.—Herbines' dam, near Leesport.
M. C.—Maiden creek, at pumping station of City of Reading.
W. C.—Willow creek, branch of Maiden creek, Reese Davis' mill dam, about one-half mile above City of Reading pumping station.
L. M. No. 19.—Schuylkill river, at Peacock's bridge.
S. | 21.—Schuylkill river, at Schepp's dam.

Samples of water from Schuylkill River, September 20, 1897:

L. 18.—Mouth of Hamburg Canal.
L. M. 19.—Peacock's bridge.
M. C.—Maiden creek.
W. C.—Willow creek.
S. | 21.—Schepp's dam.

The analyses of samples of water taken from the Schuylkill River for the purpose of studying the effect of the limestone water in the vicinity of Reading suggest the following remarks:

The Schuylkill River has its rise in the coal regions of Schuylkill Co., and flows for some distance below Leesport, through a limestone country. There are, however, limestone rocks throughout the coal regions and the mine-waters which flow into the river contain considerable quantities of lime and magnesia sulphates. An analysis of mine-water from the "Ellen Gowan" colliery, made by

W. J. Williams, is a fair sample of the mine-waters of Schuylkill Co. It is as follows:

Free sulphuric acid	— 338	parts per million.
Iron and aluminum sulphate	—2.418	„ „ „
Lime sulphate	— 789	„ „ „
Magnesium sulphate	— 685	„ „ „

A short distance below Leesport, Maiden Creek empties into the Schuylkill River; the Maiden Creek water contains principally lime and magnesium carbonates in solution. The mingling of these waters gives rise to a peculiar appearance. The water above Leesport contains a considerable quantity of free sulphuric acid and iron and aluminus sulphates and has a dark clear appearance; but after mingling with the water from Maiden Creek it changes to a light blue color and somewhat milky, as seen from above the surface. At this point the free acid of the river water is neutralized by the lime and magnesia of the creek water and part of the iron and almumina is precipitated. It is quite probable that the change in the appearance of the water is due to the precipitation of some of the mineral constituents. Carbonic acid gas is also set free, part of it remaining in solution; the frothing which has been noticed when the water is agitated, is probably due to the escape of the carbonic acid gas. The water at Peacock's Bridge usually contains some iron and aluminium sulphates and this gives the water a slight acid reaction. At times also, owing to the irregular flow of Maiden Creek, a small quantity of free sulphuric acid is found here. As the river continues its course, these sulphates and the free acid disappear because the streams and springs of the limestone belt, which continues until near Norristown, neutralize the acid. When, finally, the river reaches Norristown, the water contains lime and magnesia carbonates and to these substances in solution the alkalinity of the Schuylkill water at Philadelphia is due.

Samples of water taken from Delaware River and Rancocas Creek, September 9, 1897:

	Parts per Million.				
	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Chlorine.
No. 1. Lardner's Point Pumping Station.....	.02	.092	None.	.2	3.54
No. 2. Delaware river, opposite Torresdale ...	.02	.048	None.	None.	1.42
No. 3. Mouth of Rancocas creek.....	.026	.064	None.	None.	2.50
No. 4. One mile up Rancocas creek.....	.018	.052	None.	None.	2.50
No. 5. Two miles up Rancocas creek.....	.024	.092	None.	None.	2.50

The Lardner's Point Pumping Station sample contains more impurities than the Delaware River sample, opposite Torresdale. Of the Rancocas Creek waters, the highest in organic impurities is the sample taken two miles up stream. The Delaware River water taken in the middle of the stream opposite Torresdale, is the best of the five waters.

Samples taken September 9, 1897, from Schuylkill and Delaware Rivers:

	Parts per Million.				
	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Chlorine.
Schuylkill River, at Vincent's Dam.....	.044	.072	Traces	0.7	4.24
Schuylkill River, at Poyer's Ford.....	.024	.042	None	0.7	4.60
Schuylkill River, at Phoenixville.....	.114	.046	Present	0.6	4.60
Delaware River, at Trenton.....	.040	.022	None	0.2	1 42
Delaware River, at Yardleyville.....	.200	.076	None	0.2	2.48
Sample from Yardleyville, Sept. 22, 1897.....	.012	.044	.....	.200	1.7

The Royersford sample is the best of the Schuylkill River samples, and the Trenton sample the better of the Delaware River samples. That from Yardleyville indicates sewage pollution.

Samples taken from the Schuylkill River, September 20, 1897:

	Parts per Million.				
	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Chlorine.
Perkiomen Junction	.012	.09	.....	.06	4.6
Port Kennedy	.014	.09	.....	.06	4.6
Merion	.016	.07	.....	.06	4.5

The first two samples were taken from the middle of the stream, the last one from near the shore. All three samples were clear. The free ammonia is less and the albumoid ammonia more than usually found in samples from Spring Garden Pumping Station. The nitrates and chlorine are about the same. The water is practically the same in quality as that taken at Spring Garden Pumping Station.

ANNUAL REPORT

OF THE

Division of Bacteriology, Pathology and Disinfection

OF THE

BUREAU OF HEALTH

FOR THE YEAR ENDING DECEMBER 31, 1897.

Philadelphia, January 4, 1898.

President and Members of the Board of Health.

GENTLEMEN:—I have the honor to submit the following report of the work done in the laboratory for the year ending December 31, 1897.

I deem it unnecessary to enter into the details of our organization, system of registration, and objects and aims of the Division, for the reason that this information is contained in the report for the year 1896.

Since January 1, 1897, the routine work of the Laboratory has consisted in the bacteriological examination of cultures from cases of diphtheria and suspicious inflammations of the throat and nose; of the microscopic examination of sputum sent to the laboratory by physicians of the City; of the application of the so-called Widal's test in the diagnosis of typhoid fever; of the bacteriological analysis of samples of water for the Bureau of Water and

citizens of Philadelphia, and of samples of milk for the Chief Milk Inspector. In addition we have continuously maintained a supply of diphtheria antitoxin sufficient in quantity to meet the demands of the Municipal Hospital, those of physicians requiring the remedy for use in private practice among the poor, and those of the special physician engaged by your Board for the administration of antitoxin. The deails of this work may be summarized as follows:

Diphtheria.

There have been examined 7,313 cultures from 3,353 cases suspected of having diphtheria; of these cultures, 3,960 were secondary.

Of the 3,353 cases examined 2,020 proved by bacteriological examination to contain diphtheria bacilli. There were 1,138 suspicious cases examined which did not contain diphtheria bacilli. There were 195 cases in which ti was impossible for us to make a positive diagnosis.

Without entering into full details it will suffice to say that the persistence of the bacilli in the throats of those cases in which diphtheria bacilli were found is essentially that shown in our report for 1896, namely, they persist, on an average, for twenty-nine days and vary between the extremes of 46 and 120 days.

Sputum.

In this department of our work 563 specimens have been examined. We have not classified the results of these examinations for the reason that we do not regard it as of importance in view of the fact that no particular cognizance of these cases is taken by the municipal authorities.

Urine.

While this is a minor part of our work we are, nevertheless, called upon by physicians for assistance. During

the year we have made both bacteriological and simple chemical analyses of 95 specimens of urine.

Water.

On March 1, 1897, at my request, an assistant was appointed whose routine duties were to be the bacteriological examination of samples of water and of milk.

From the inception of this work 110 samples of water from varoius sources, but particularly from the City's supply, have been examined.

Ninety-four of these samples were examined for the Bureau of Water, and 16 for private individuals.

The results of these examinations show, for the time covered by the work, that the condition of the City's water supply, from the bacteriological standpoint, is subject to the greatest range of fluctuation, the conspicuous underlying causes of which are season and rainfall, particularly the latter.

The range of fluctuation, at the Spring Garden Pumping Station, is seen to be from a minimum of 115 bacteria per cubic centimetre up to the maximum of 14,440 bacteria per cubic centimetre.

The influence of rainfall, and the melting of snow and ice has been seen to result uniformly in a conspicuous increase in the bacterial contents of the water.

Though a continuous and careful search has been made we have failed to detect the presence of specific disease-producing micro-organisms, though in a number of cases we have encountered species that are usually present in the bowels of man and animals.

Our work in connection with the Bureau of Water has been in the way of assisting the Chief of that Bureau in deciding the comparative qualities of the water at the several pumping stations, reservoirs and other points along the courses of our supplies that might be regarded as suitable localities in which to establish filtering plants.

Milk.

At the request of your Board we have examined all samples of milk referred to us by the Chief Milk Inspector. The results of these examinations have shown that the bacteriological condition of the City's milk supply is, as might be anticipated, without uniformity. The smallest number of bacteria that we have found in any sample was 1,200 per cubic centimetre, and the largest number was 819,000 per cubic centimetre. The 221 samples examined by us since October, 1897, fall, in their bacterial content, between these extremes, the average being 121,497 per cubic centimetre.

Antitoxin.

During the year we have supplied 2,334 bottles containing 10 c. c. each of antitoxin of the strength of 1,000 units per bottle. Of these 1,281 went to the Municipal Hospital; the remaining 1,053 were distributed among physicians for use among the poor. Since the majority of this material has been used by the Physician-in-Charge of the Municipal Hospital and by the special physician employed by your Board to administer antitoxin and perform the operation of intubation, the results of its use will be found in their special reports.

In addition to the special work of the laboratory we have been called upon to investigate the recent outbreak of typhoid fever in the City.

The results of this investigation have already been presented to your Board, and appears as an appendix to this report.

Typhoid Fever.

On March 15, 1897, the following circular was sent to the physicians of the City explaining the method of preparation of the specimens and requesting their co-operation with the laboratory in determining the value of the test:

DEPARTMENT OF PUBLIC SAFETY

BUREAU OF HEALTH

Division of Pathology, Bacteriology and Disinfection.
Laboratory of Hygiene.

Philadelphia, Mar. 15, 1897.

DEAR DOCTOR:

The Board of Health of the City of Philadelphia desires to call the attention of the medical profession of this city to the fact that bacteriological methods seem likely to afford a rapid and satisfactory method for the

Diagnosis of Typhoid Fever,

which will compare not unfavorably in point of efficiency with the methods now employed for the diagnosis of Tuberculosis and of Diphtheria.

It has been shown by Pfeiffer of Berlin and Widal of Paris that the serum, obtained from the blood of a typhoid patient, is capable of so acting upon pure bouillon cultures of typhoid bacilli, when mixed with it, as to abolish the active motion so characteristic of that organism in fluid culture media and cause an agglutination of individual bacilli into large groups or clumps. This change is easily recognizable under the microscope—or in culture tubes—and usually occurs within a few minutes.

The reaction is claimed to be a specific one, that is, the serum from healthy persons or patients having febrile diseases other than typhoid fever, does not cause the characteristic reaction with typhoid bacilli, nor does the serum of typhoid patients give any such reaction with other species of motile bacilli.

It has been shown by Dr. Wyatt Johnston, bacteriologist of the Board of Health of the Province of Quebec, Canada, that the fluid obtained by moistening with water a dried blood-drop gives the reaction in a prompt and satisfactory manner, even after it has been dried for several days. This process makes the method suitable for a system of free "Municipal Laboratory" diagnosis similar to that used in the case of diphtheria, as a drop of dried blood can be readily sent to the laboratory and examined there.

As the subject is a new one the Board does not feel in a position to state exactly what degree of accuracy will be obtained by this method when used for the routine diagnosis of typhoid fever on a large scale. In order to test the practical utility of the method, the Board hereby offers the services of the Bacteriological Laboratory to examine and to report upon samples of blood collected by physicians of this city. Suitable outfits containing instructions, which must be carefully followed in all cases, can be obtained at any Police Station or at the Laboratory on application. Inclosed please find card giving instructions and an outfit for collecting the sample of blood. A report will be sent upon the day following that upon which the sample is received at the Laboratory, or the result will be given if the physician will call up the Laboratory by telephone.

In view of the fact that the question is as yet in the experimental stage it is hoped that those who take advantage of the offer now made by the Board will do all in their power to aid this inquiry by giving information, when possible, as to whether the subsequent progress of the case confirmed the result of the serum test or not. It is also especially requested that second samples be sent to the Laboratory from any genuine or suspected case of typhoid when the first sample did not give the specific reaction.

All inquiries and letters should be addressed to Dr. A. C. ABBOTT, Director of the Laboratory, Room 717, City Hall.

By order of the Board of Health,

A. A. HIRST, *Secretary.* **WILLIAM H. FORD, M. D.,** *President.*

The dry-blood method, as elaborated by Johnson, of Montreal, was deemed the most practical for municipal laboratory work and outfits for obtaining blood in this way were prepared and sent to each physician of the city. Large numbers of outfits were sent to the police stations and hospitals which serve as distributing stations to the physicians.

Method.

The blood is obtained by the physician upon a slip of linen paper and then placed in a small envelope. The following card or booklet, containing the data in regard to the case, is filled out by the physician.

TO BE FILLED OUT BY ATTENDING PHYSICIAN.

Is this the first specimen from this case?.....Date,.....Hour,.....

Name of Attending Physician,.....

Residence, ...Telephone Number,.....

Name of Patient,..... .....Age,.....

Residence,.....Ward,..... (over)

Day of Fever,.....Has patient already had Typhoid?.....When?.....

Mark any of the following symptoms observed:

Diarrhœa?..... Temp. Range?.....Enlarged Spleen?.....

Delirium?.....Iliac Tenderness?.....Rose Spots?.....

State suspected source of infection,.....

Clinical Diagnosis and Remarks.....

.....

A card containing directions as to the method of procedure is placed in each outfit.

Bureau of Health--Laboratory of Hygiene.

ROOM 717, CITY HALL.

PHILADELPHIA.

DIRECTIONS FOR TAKING BLOOD DROP.

Thoroughly cleanse the skin of the patient's finger tip or lobe of the ear. After carefully drying, prick it with a needle previously sterilized by heating over a lamp or gas flame and allowed to cool. Allow *five* or more large drops of blood to dry on the inner surface of the accompanying piece of folded paper. Refold and return the latter to the small white envelope, which must then be sealed. Fill out the first two pages of the accompanying book. Replace the small envelope and book in the *colored* envelope, which may be stamped and posted or returned to the Station House.

(OVER)

CIRCUMSTANCES INFLUENCING THE INTERPRETATION OF THE RESULTS OBTAINED.

The test is not likely to yield positive results before the fourth or fifth day of an attack of typhoid fever.

The condition of the blood causing the reaction persists for some time after convalescence, hence care must be taken to exclude the coincidence of a positive result due to a previous attack of typhoid fever.

"A negative result, obtained with the serum of a case of suspected typhoid, affords a presumptive evidence against the diagnosis of typhoid fever, but this is only a probability, especially if the examination has been made in the first few days of the disease. The examination should then be repeated during the next few days. The presumption that a case in which a negative result has been obtained is not typhoid, becomes correspondingly stronger as the stage of the disease becomes more advanced."—WIDAL.

In doubtful cases giving negative reaction, send further samples at intervals of two or three days, so long as there is a possibility of typhoid fever.

Please inform the Laboratory of any discrepancy between result of test and the subsequent course of case.

The outfits containing the blood are brought to the laboratory by patrolmen specially delegated for that work, or sent in by mail and examined each day at 10.30 A. M.

The method of obtaining the reaction that we employ in the laboratory is as follows:

The dry blood is mixed with bouillon to about its bulk before drying; a loopful of this mixture is then mixed with a large drop 24 hour bouillon culture of typhoid bacilli and a hanging drop preparation made. Each specimen is watched carefully for a period of one hour. When the reaction occurs there is a cessation of motion of the bacilli and a marked clumping, leaving the fields between the clumps clear of organisms. The reaction is then said to be positive and card report sent to the physician.

Bureau of Health—Laboratory of Hygiene,

ROOM 717, CITY HALL.

Laboratory Number, S. D. .....

Philadelphia.....189

DEAR DOCTOR:

The test made with the.....specimen of blood from.....

on.....did.....give the typhoid reaction.

A. C. ABBOTT, M. D.

(OVER) Per.....

If the reaction does not occur there is no cessation of motion and no clumping of the bacilli.

The dry blood method is to be preferred for routine examination because it is by far the most convenient for the clinician and the patient and we consider the results to be entirely trustworthy. In a number of cases both blood serum and dried blood were obtained simultaneously

and in no instance was there a discrepancy between the results obtained with the dried blood and with the serum.

SUMMARY OF RESULTS.

1. Whole number of cases examined was	1,557
2. Total number of specimens examined was	1 932
3. Number of cases that were clinically typhoid was	858
4. Number of cases that were not clinically typhoid was	699
5. Number of cases in which the laboratory diagnosis corresponded with the clinical diagnosis was	1,514
6. Number of cases in which the laboratory diagnosis did not correspond with the clinical diagnosis was	43
7. Discrepancy between laboratory diagnosis and clinical diagnosis..	2.8%

While the foregoing report indicates that the work of the laboratory has been fairly satisfactory there are several recommendations that I take the liberty of making which I believe would very much improve the service. Briefly stated:

I would recommend that a part of the laboratory work be the regular, systematic bacteriological study of the city's water supply. This is impossible with the force and facilities at present at my disposal.

While it is impossible to investigate, from the bacteriological standpoint, all milk coming to the city, it, nevertheless, seems advisable that as much of this work be done as may be necessary to demonstrate whether it is or is not possible to state that the milk from dairies conducted upon proper sanitary principles is always of a better quality, from the bacteriological standpoint, than is that from less carefully conducted establishments. With such information at our disposal steps might then be taken to recommend to the dairy interests of the City measures that might prove to be of direct commercial interest to them. Such investigations are in no wise directed against the dairymen of the City, but would be conducted with the view of obtaining exact data that might be used to their advantage as well as to the advantage of the consumer.

We would further recommend that the Division of House Disinfection be incorporated with the Laboratory. This recommendation is made in order that the materials and methods employed by the corps of disinfectors may be under constant scientific control, without which it is impossible to state definitely that the efforts to prevent the spread of contagion by this means are sufficient for the demands of the case.

Under existing conditions the laboratories of your Board are open to all persons who desire to enter them. This we do not regard as conducive to the best interests of the work. We would request, therefore, that, if possible, an additional office be provided to which all persons having business with the laboratory may make inquiries; and that the laboratories proper be closed to promiscuous visitors.

Respectfully submitted,

A. C. ABBOTT, M. D.,
Chief of Division.

REPORT

OF THE

Cause of the Increase of Typhoid Fever in Philadelphia

PRESENTED TO THE BOARD OF HEALTH

BY

DR. A. C. ABBOTT,

Chief of the Bacteriological Division.

Philadelphia, January 20, 1898.

Board of Health.

GENTLEMEN:—I have the honor herewith to submit a report upon the examination into the cause of the increase in the number of cases of typhoid fever in the northern wards of the City.

At the request of this Board the examination of samples of milk collected from dairies supplying the wards in question was started December 20th.

A report to the Chief Milk Inspector, Mr. W. J. Byrnes, was made on January 4, 1898, in which it was stated that the examination had failed to show the presence of typhoid bacilli.

The number of samples of milk examined was forty and the examination was thoroughly carried out and all the known methods of any value for the detection of typhoid bacilli in milk were used with the result as stated.

On the 5th of January we were requested by resolution of this Board to examine the water supplied to the various parts of the Twenty-ninth Ward to see if said water was in any way responsible for the increased prevalence of typhoid fever in that district.

A report upon these examinations was presented to you at the meeting of January 18th. This report stated that the examinations had failed to show the presence of the typhoid bacillus in the samples submitted to us. Since December 27th eight samples of water from Queen Lane Reservoir have been examined for the typhoid bacillus. The examination of these samples has not only consisted in the use of methods for detecting the presence of certain bacteria in water commonly employed, namely, those of Schottelius and Smith, but also the recently described method of Hiss. All of these methods have failed to show the presence of typhoid bacilli in the samples.

The failure to detect the specific micro-organisms of typhoid fever in water known to be polluted with sewage is regarded by the uninformed as fatal to the opinion that such waters are the most frequent channels for the dissemination of the disease.

It is proper to state in explanation of this failure that the special pollutions that are capable of producing typhoid fever are usually intermittent, and being intermittent there are intervals during which typhoid dejecta are probably not passed into the water, otherwise the disease would be always much more conspicuously in our midst than it is.

When, as a result of such contaminations, typhoid fever assumes alarming proportions in the community, attention is then directed to the water that is known to be impure, and the bacterologist is, by some, expected to reveal these specific disease-producing impurities.

Unfortunately for the investigation, however, it is

begun, as a rule, when the disease is at its height, which is from two to three weeks after the gross pollution actually occurred; that is, after the interval of time that is necessary for the disease to develop in persons who have swallowed the infective water. Two to three weeks is quite sufficient time for typhoid bacilli to disappear, for they are not normally at home in water, and do not always find in water conditions favorable to their development.

In consequence, the efforts of the bacteriologist to find them at the time of his investigations are, as a rule, rewarded with negative results.

Further, when we bear in mind that the amount of typhoid excreta capable of seriously polluting a stream is not necessarily large, and that it undergoes in the great volume of water to which it gains access, an enormous dilution, we realize that the bacteriologist, working upon the great mass of fluid with samples rarely larger than a thimbleful can have but little hope of fiuding in his tiny sample the organism for which he is seeking. Were his results constantly positive we would be justified in expecting almost every user of such water to contract typhoid fever, but such we know is not the case.

It is rare, if ever, that bacteriological analysis demonstrates beyond question the presence of typhoid bacilli in waters that are known to be polluted, or furnishes undoubted proof that such water possesses the specific property of causing the disease; nor is such proof demanded. There is proof of another kind, and just as important that is obtainable by any logical individual who will take the trouble to carefully consider the matter.

Long before bacteriology had become a trustworthy science and before its methods were systematically applied to the study of water, there was proof in abundance of the causal relation bewteen impure water and intestinal disease, particularly typhoid fever.

There is probably no one, who is familiar with the circumstances surrounding the epidemic of typhoid fever at Plymouth in this State in 1885, who doubts for an instant the part played by the water in spreading the disease to the one thousand of its nine thousand inhabitants, and yet this opinion is not based on bacteriological proof, nor could such proof have been supplied, for at the time bacteriology was but beginning its modern development.

Neither did the State of Massachusetts demand bacteriological proof of the dangerous condition of the water of the Merrimac before the supply of Lawrence was purified; whereby a reduction of 59 per cent. in the death rate from typhoid fever in that city occurred during the twelve months after the supply was improved.

It was not necessary to detect typhoid bacilli in Chicago's water in order to prove that its polluted supply was the cause of the high mortality from typhoid fever; nor did the absence of such proof delay the improvements that brought about a reduction of sixty per cent. in the typhoid death rate within the first year after the improvements were made. But it is not necessary to multiply such instances; the literature on the subject is rich in them. In not a single instance, however, have we been able to find incontestible bacteriological proof of the presence of typhoid bacilli in the waters. Yet no one doubts that they were there, for it is proven that typhoid evacuations had gained access to the waters.

With regard to onr own supply, convincing proof of the quantity and character of the pollution can easily and always be obtained by any citizen who will inspect the sources of our supply in the course of their flow to the city; or who will consult the excellent and exhaustive reports that have been made from time to time by Mr. Hughes, Chief of the House Drainage Department.

From these reports may also be seen that the effects of

the Board of Health to check such pollutions have been continuous and in part been successful. But their power does not, I believe, extend beyond the city limits.

Upon failing to discover the bacillus of typhoid fever in the samples of water that we have examined, our attention was given to evidence of another kind that might seem to shed some light upon the source of the outbreak from which the city is now suffering. We believe that we have constructed a chain of evidence that will leave little room for reasonable doubt that our water supply is at fault.

A study of the weekly reports of the Health Officer, giving the number of cases of typhoid fever and their location by wards, demonstrated that the increase began during the week ending December 4, 1897. It was also noted that the increase in the number of cases reported was largely confined to the wards in the northwest section of the city.

Reasoning on the ground that it usually takes from four to six days from the time of the first manifestations of the sickness until the diagnosis of typhoid fever is made and reported to the Health Officer, and estimating that the period of incubation is from seven to ten days, we are brought back to the week ending November 20th, as the most probable time for the infection to have taken place. The coincidence of the overflow of the intercepting sewer with consequent sending into the Schuylkill just above the Queen Lane pumping station of a considerable amount of sewage on November 16th, and the infection of a large number of persons in a well-defined portion of the city with typhoid bacilli at the same time was too striking not to be seriously considered and thoroughly investigated. It was ascertained through the courtesy of Mr. J. C. Trautwine, Jr., Chief of the Bureau of Water, that the area supplied with water from the Queen Lane reservoir corresponded very closely to the limits of the wards showing

the largest increase in the number of cases of typhoid fever.

With regard to the overflow of the sewer it is a matter of record that water visibly contaminated was pumped into Queen Lane reservoir on the afternoon of November 16th, for some time, probably not exceeding two hours, before the pumps were stopped, which occurred at 4 P. M. The pumps at Spring Garden and Fairmount pumping stations were shut down at 9 P. M., at which time "the water at these stations began to have a bad taste."

It is therefore clear that while contaminated water was undoubtedly pumped in the Queen Lane basin, but little contaminated water was pumped by the Spring Garden and Fairmount stations; not only on account of the stopping of the pumps, but chiefly because of the dilution of the sewage, as the Schuylkill was high at the time, owing to the recent rains.

Pumping at all the stations was resumed on the afternoon of the 17th, after bacteriological and chemical samples had been taken from the river at the intakes of the various pumping stations and a report of the examination of the chemical had been sent to Mr. Trautwine.

It is of importance to know that there had been light but widespread rains from the 14th of November until the morning of the 17th. This complicated the interpretation of the bacteriological findings, as an increase in the number of bacteria in the water is always expected after a period of rain. It was very difficult, therefore, to determine whether the increase in the number of bacteria was due to the rain or to the sewage.

The next step in the investigation was the diagramatic representation of the cases of typhoid fever reported weekly from the wards supplied by the Queen Lane reservoir as compared to those from the remaining wards of the City, and also as compared with the total unmber of cases reported weekly from the entire city. This diagram

represents a period of from several weeks before the outbreak down to the present time. It has already been presented to the Board at a former meeting and now forms Plate I in a series of similar diagrams. The curves of this diagram represent the number of cases of the disease in question reported for each week during the period from the entire City (A); from the area supplied by the Queen Lane reservoir (B); and from the remaining portions of the City (C).

This seemed to prove beyond any reasonable doubt that there was a definite relation between the area in which the largest part of the increase in the number of cases of typhoid fever occurred and the area supplied with water from the Queen Lane reservoir. Had virulent typhoid bacilli been definitely known to have gained entrance into the water supplying the affected area at the time of the overflow of the intercepting sewer, an increase in the disease would have been expected at just the time when it occurred. There were, however, certain facts and conditions not considered at the time when this diagram was drawn. As the population of the wards and the area supplied by the different reservoirs vary considerably, it might be expected that the number of cases of this disease from the wards and reservoir supply areas would vary also.

This resulted in the making of another diagram (Plate II) in order to show the rate, amount, and time of the increase of the disease at weekly periods as expressed in cases per hundred thousand population (Census 1890). In the first (A) the entire city is indicated; in the second (B) the area supplied by the Queen Lane reservoir; and third (C) the remaining wards of the city not included under (B).

An inspection of this chart shows absolutely that the greatest increase in the number of cases per hundred thousand inhabitants occurred within the limits of the area supplied from the Queen Lane reservoir.

It may have already been suggested to the minds of some

that the area supplied by the Queen Lane reservoir included within its limits one or two large hospitals which might receive many cases from districts outside and yet report them from this area, thus increasing the number of its cases. That this objection does not hold good is clearly seen by an inspection of Plate III on which curve (A) showing the number of cases per hundred thousand inhabitants, but not included those reported from hospitals, closely follows the curve (B), which is a reproduction of the curve (B) of Plate II.

In order to locate the source of the infection as definitely as possible Plate IV was drawn showing the number of cases per hundred thousand population reported weekly from (A), the area supplied by Shawmont Pumping Station, and (B) that supplied by the Queen Lane Reservoir, and (C) that supplied by the Belmont Pumping Station, which is the next station below Queen lane. An inspection of this place shows, that while the Shawmont area was not affected to any extent during the December increase of the disease, the Queen lane area was very much affected and that the Belmont area, while not so much affected as the Queen lane, was much more affected than the Shawmont.

As Plate II shows beyoud a doubt that the greatest increase in the number of cases of typhoid fever per hundred thousand inhabitants occurred within an area, the limits of which correspond very closely to those of the area supplied from the Queen Lane Reservoir.

And as Plate III shows that the increase here was not due to the importation from outside districts into local hospitals.

And as Plate IV shows that the source of infection, if the infective agent was carried by means of the water supply, was located at some point on the Schuylkill below the Shawmont Pumping Station and above the Queen Lane Pumping Station, and was also carried down the river to the Belmont Pumping Station.

And as Plate I, as well as Plates II, III and IV shows, that the beginning of the increase in the number of cases of typhoid fever occurred just two weeks after the overflow of the intercepting sewer, and knowing as we do that the sewage from this overflow entered the Schuylkill at a point below Shawmont Station and just above Queen Lane Station, and knowing that water greatly contaminated with said sewage was pumped into Queen Lane Reservoir and from there was at once sent into the supply pipes, how can it be doubted that the overflow of the intercepting sewer on November 16th was the cause of the increased prevalence of typhoid fever in this city which first manifested itself in the week ending December 4th.

With regard to the second sudden increase in the disease starting the week ending January 1st, there is, as yet, no evidence pointing to a known source of contamination of the Schuylkill although Plate II shows that the increase in January is greatest in the Queen Lane Reservoir supply area, and in the remaining portions of the city also considerable, showing the increase to be more or less general, especially as Plate IV shows that the increase in the Shawmont area, which is above the Queen Lane area, is considerable.

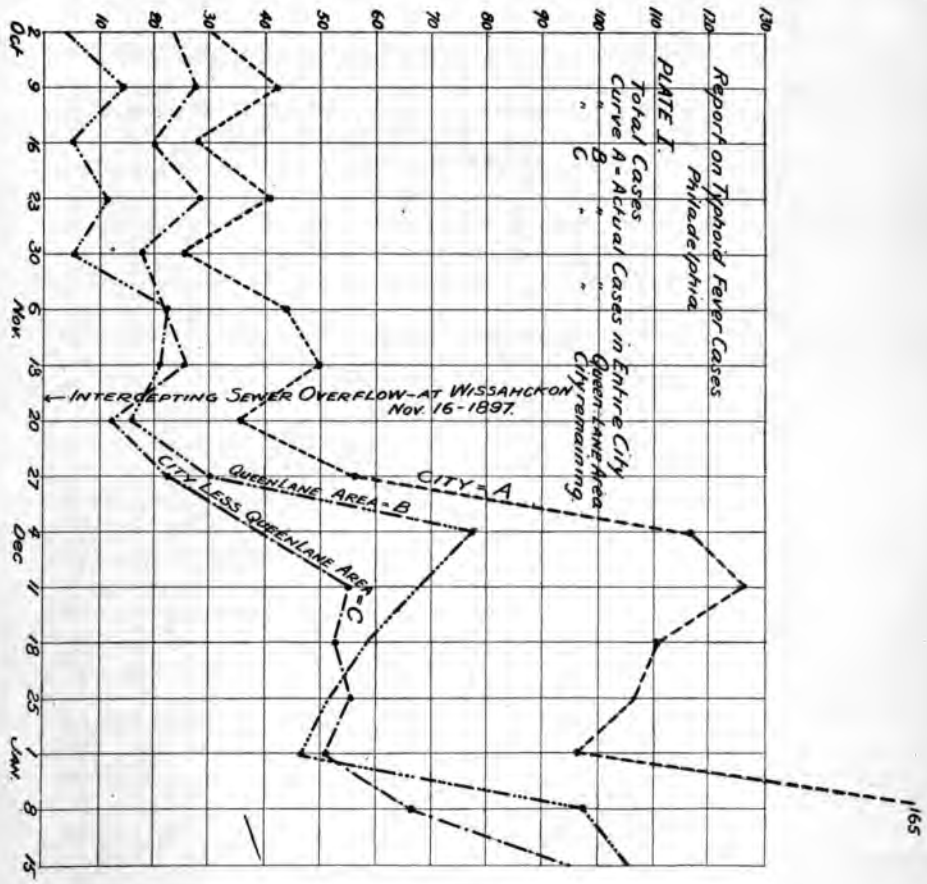
This would indicate that the contamination of the river occurred above the Shawmont Pumping Station; while that the increase in the disease in the Queen Lane area is greater than in the Shawmont area would also indicate that the contamination was increased between Shawmont and Queen Lane by further pollution.

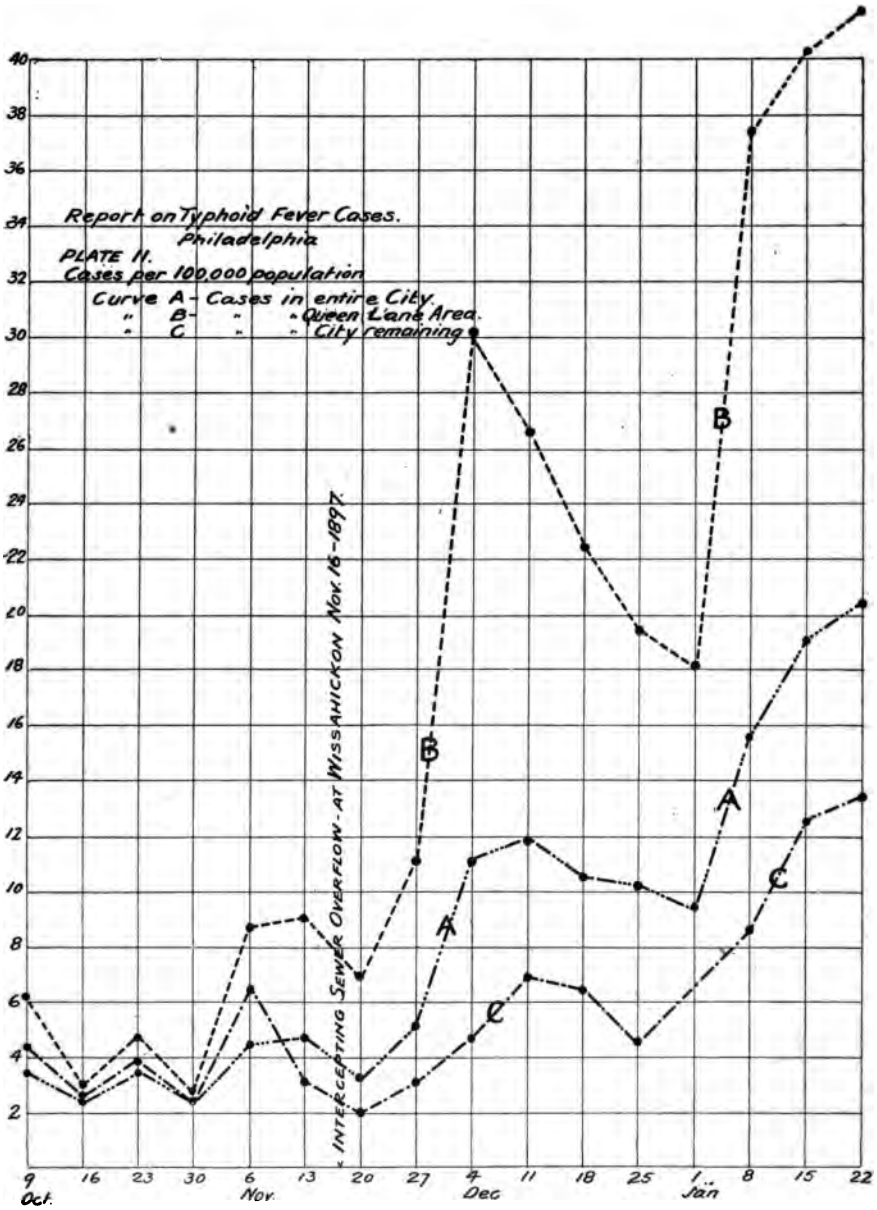
Samples of water are being collected regularly from Queen Lane Reservoir, the Schuylkill, between Shawmont and Queen Lane Stations, and from the Wissahickon; but it cannot be expected that the examination of these will show the presence of typhoid fever.

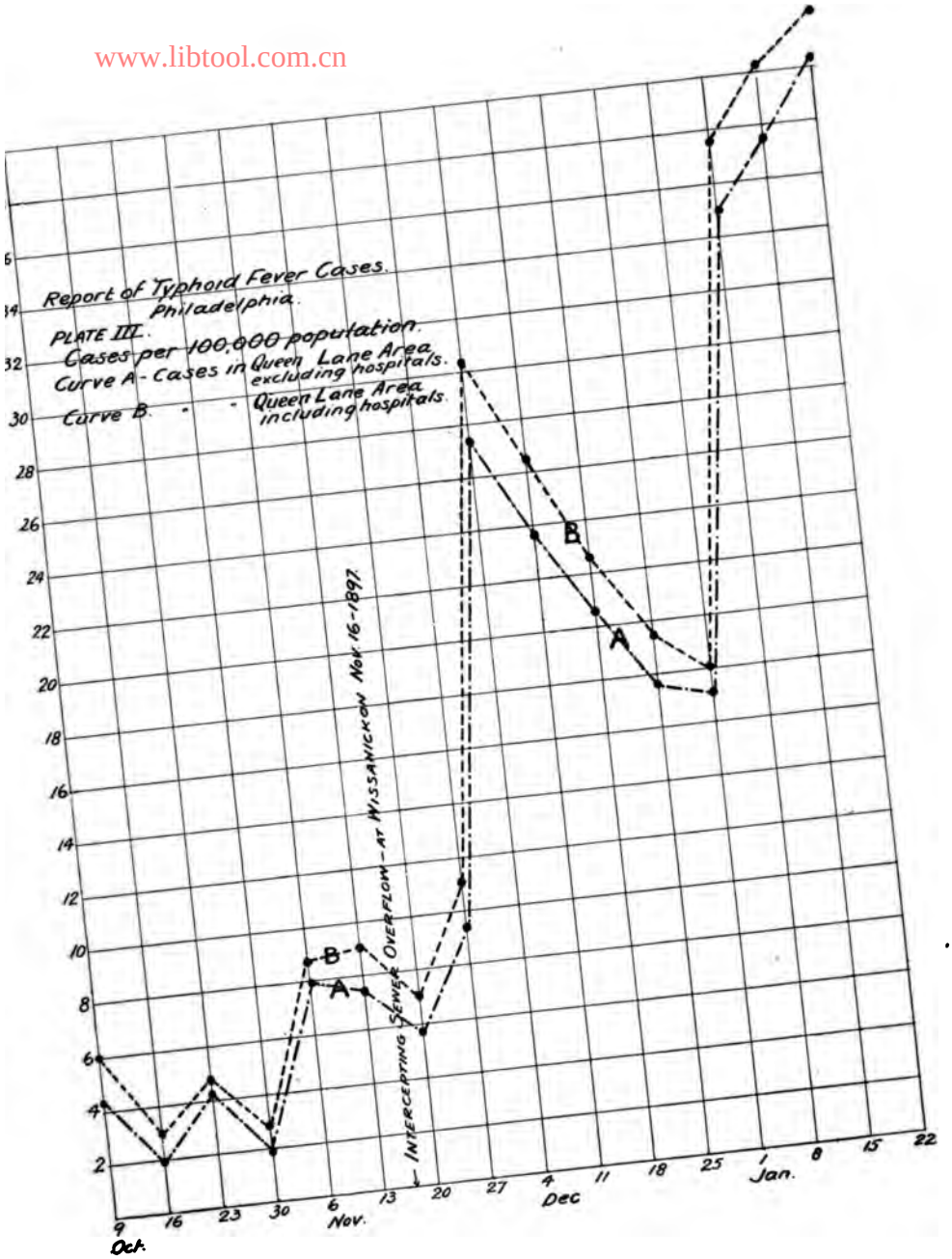
Respectfully submitted,

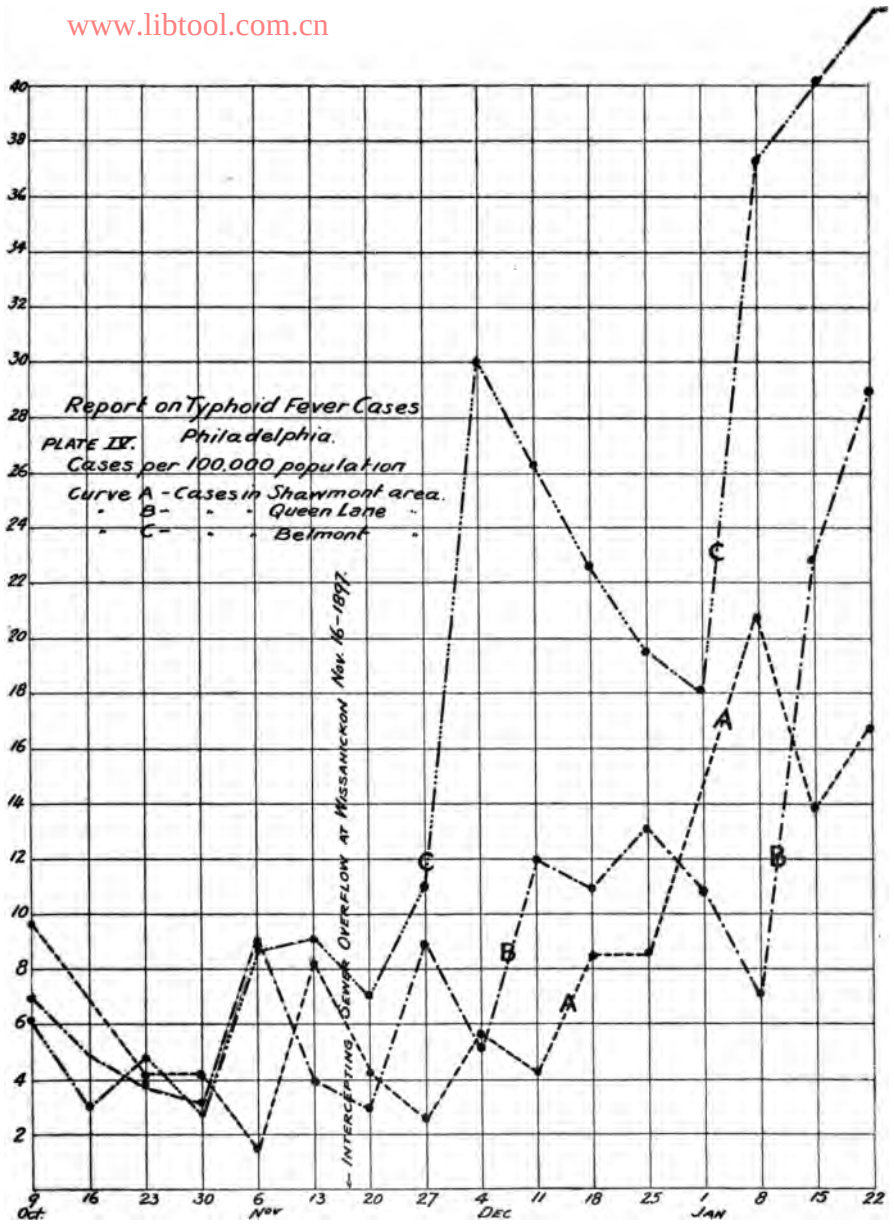
A. C. ABBOTT,

Chief, Division of Bacteriology.









ANNUAL REPORT

OF THE

MEDICAL INSPECTOR

ON THE

SANITARY INSPECTION OF THE PUBLIC SCHOOLS

For the Year 1897.

Philadelphia, December 31, 1897.

LT. COL. J. LEWIS GOOD,
Secretary, Board of Health.

DEAR SIR:—I have the honor to submit the following report of inspections of the Public Schools of the City for the year ending December 31, 1897:

First Section.

Calhoun School, Tenth and Snyder avenue. Heat and light good. Ventilation by means of open windows and transoms. Seating capacity, 394. On the roll, 567. Vaccination record good; all the children vaccinated. School books destroyed if returned by a child that has been sick. Drainage—Latrine system, and in good order. Basement clean and whitewashed.

Close School, Seventh and Dickinson streets. Heat and light good. Ventilation by means of open windows and transoms. Seating capacity, 728. On the roll, 787. Vaccination register good; all the children vaccinated. School books destroyed when returned by a child that has been sick. Drainage—Latrine system, and in good order. Basement clean and whitewashed.

Baugh School, Seventh and Dickinson streets. Heat good. Light very good. Ventilation by means of windows and transoms good. Seating capacity, 622. On the roll, 629. Vaccination register good. All the children vaccinated. School books destroyed when returned by a child that has been sick. Drainage—Smead system, and in good order. Basement clean and whitewashed.

Tasker School, Ninth and Taster streets. Heat and light good. Ventilation by open windows and transoms. Seating capacity, 540. On the roll, 589. Vaccination register good; all the children vaccinated. School books destroyed when returned by a child that has been sick. Drainage—Latrine system, in good order. Basement clean and whitewashed.

Francis Read School, Eleventh and Moore streets. Heat and light good. Ventilation good, by open windows and transoms. Seating capacity, 684. Roll call, 556. Vaccination register good; all the children vaccinated. School books destroyed when returned by a child that has been sick. Drainage—Latrine system, in good order. Basement clean and whitewashed.

Welch School, Thirteenth and Jackson streets. Heat good. Light good, except in three central rooms. Ventilation good, except in three central rooms which were not intended for school rooms. Seatiing capacity, 1,035. On the roll, 1,250. Vaccination register good; all the children vaccinated. School books destroyed when returned by a child that has been sick. Drainage—Latrine system, and in good order. Basement clean and whitewashed.

Foy School, Eighth and Wolf streets. Heat, light and ventilation good. Seating capacity, 750. On the roll, 767. Vaccination register good. School books destroyed when returned by a child that has been sick. Drainage—Smead system, and in good order, except the urinal, where there was no water turned on for fear of freezing. Basement clean and whitewashed.

Clay School, Lancaster street above Reed street. Heat and light good. Ventilation by means of open windows and transoms. Seating capacity, 288. On the roll, 298. Vaccination register good. School books destroyed when returned by a child that has been sick. Drainage—Latrine system, and in good order. Basement clean and whitewashed.

Weccacoe School, Second and Reed streets. Heat and light good. Vaccination register good. Ventilation by open windows and transoms. Seating capacity, 650. On the roll, 535. Latrine system in good order. School books destroyed when returned by a child that has been sick. Basement clean and whitewashed.

Morris School, Second and Morris streets. Heat and light good. Ventilation by open windows and transoms. Seating capacity, 536. On the roll, 520. Vaccination register good. School books destroyed when returned by a child that has been sick. Latrine system in good order. Basement clean and whitewashed.

Smith School, Fifth and Snyder avenue. Heat and light good. Ventilation by open windows and transoms. Seating capacity, 754. On the roll, 800. Vaccination register good. School books destroyed when returned by a child that has been sick. Drainage, Latrine system in good order. Basement clean and whitewashed.

John Taggart School. Fifth and Porter streets. Heat and light good. Ventilation by forced draught; very good. Seating capacity, 1,050. On the roll, 1,150. Vaccination register very good. School books destroyed when returned by a child that has been sick. Drainage—Smead system and in good order. Basement clean and whitewashed.

Second Section.

Washington School, Carpenter above Ninth street. This building has been repaired during summer and will be

finished the coming summer (1898). New steel ceilings have been put in on first and second floor class rooms, and some new windows cut, so that light is better. Heating and ventilation good. Closets are provided for clothing outside class rooms. Cellars and latrines clean, but there is insufficient supply of water to the latter.

Annex and Kindergarten, No. 1, 924 South Ninth street. In good order. Good light. Heated by stoves in rooms. No yard or play-ground. Water closets on each floor, outside landings. Flush closets with good water supply.

Nebinger School, Carpenter street, above Sixth street. Old three-story brick schools in fair repair only. Light is bad in many rooms. Gas has to be used. There are no clothes closets. Heating and latrines are good.

Wharton School, Fifth street, below Washington avenue. A fine building with modern improvements. Heat, light and air in plenty. In splendid condition.

Wharton Annex, in Mechanics Institute Building, a few doors from main school. This building should be forbidden as a school building. It is overcrowded with stoves in rooms and no means of ventilation. Light very bad, due to small, old fashioned windows having panes of glass three inches square. No clothing closets. Floors need repairing. This building should be condemned for school purposes. Originally an old library building.

Watson School, League street, below Second street. Old three-story brick school in fair repair. Light, heat and ventilation fairly good. Have clothes closets. Comfortable school for an old one.

John Stockdale School, Thirteenth and South Marshall streets. In fair order and repair. Brick school house built in 1885. Plenty of light and air. Heating apparatus good. Large clothing closets in hallways. Latrines clean. A good school house.

Kindergarten No. 3, in this building.

Kindergarten No. 2, in Watson School.

Third Section.

Mt. Vernon School, Catharine street, above Third street. Over one thousand pupils. Modern school house; brown stone. Light and heating excellent. Latrines good. Ventilation good.

Beck School, Catharine street, above Sixth street. Old building but in fair repair. Light good, but ventilation hard to attain in some rooms (at end) where stoves have to be used in addition to furnaces. This building has closets in second floor, but no under drainage to sewer, simply to a large cesspool just to rear of school. These closets open directly into class-rooms. Desks face light in several rooms. Floors badly in need of repair, and an iron stairway (the only one) should be covered with corrugated rubber, as they are exceedingly slippery and dangerous to life and limb. A new school house is needed here.

Kindergarten No. 1, in above building.

Florence School, Catharine street, below Eighth street. This building needs many small repairs as sills under doors leading to fire escape where at the sides an inch opening allows draft upon children's feet. Wainscoting about most of the registers is broken and rests upon hot flues. A slate slab should be put in. Some rooms need windows cut and transoms for ventilation. Many of windows are devoid of cords so that the sashes have to be held up with poles. Also, cracks one-half to three-quarters of an inch wide alongside windows need to be filled up. Water closets on second floor have a good flush, but no water is to be had on third floor, hence the closets are useless there and a source of danger. The cellar and latrines are in good order.

Lyons School, Catharine street, above Tenth street. Building old and heated by stoves (13) in class rooms. Clothing hung in class rooms. Light and air good.

Painted last summer. Latrines clean and plenty of water. Cellar damp, as it has only dirt floor.

Lyons Annex (Old Springer School), Christian street, below Sixth street. Old building. New school needed here. Poor ventilation and very small rooms. Houses on each side of school yard, which runs through to Queen street are not drained, and their dirty slop water runs over the yard and keeps it wet. The fences of houses on both sides need repairing. The heating is good. Closets in yard small.

Kindergarten No. 2, in Lyons School.

Fletcher School, Christian street, above Front street. Old school (1867) stone, three stories, but in good repair. In several rooms the light is poor because of buildings close to school. The coal gas troubles of the past few years have been remedied. Several gas fixtures leak, and in one room it is necessary to keep gas lighted at all times to prevent leakage into class room.

Fourth Section.

Ringgold Grammar School, Eighth and Fitzwater streets. Back rooms dark. Heating good and fair ventilation. Clothing kept in class rooms. Two hundred and thirteen Secondary scholars, about two hundred each boys and girls in Grammar Department. Latrines only fairly clean and need more water than is allowed to run through them.

Ronaldson School, Fitzwater street, above Sixth street. Old and poorly adapted building, not worth spending much money on, should be rebuilt. Second floor heated by stoves in class rooms. Ventilation only by means of open windows. Light good in all but one room. Clothing is hung in class rooms. Four hundred and fifty pupils in the school. Latrines clean.

Wm. M. Meredith School, Fifth street, above German

street. In good condition. Light, ventilation and heating excellent. Cellars and Latrines clean. A fine school house.

Ralston School, northeast corner Guilford and Bainbridge streets. Old building but in fairly good condition. Light and ventilation good. Building needs some slight repairs. Latrines clean. Well heated.

Kindergarten No. 2, 208 Bainbridge street. Rooms (2) in rented house, clean.

No. 1, 921 Bainbridge street. In clean condition.

No. 3, 703 South Twelfth street. In clean condition.

Fagen School, Twelfth street, above Fitzwater street. Great trouble in heating, as janitor claims furnaces will not burn. Light and ventilation good in rooms facing north and south and on Twelfth street, but on west side of school and within a few feet off it is a stable wall cutting off air and light, and at times the odor is bad. New furnaces should be put in if the present ones will not burn. Latrines are clean, as is the cellar.

Fifth Section.

Horace Binney Grammar School, Spruce street, below Sixth street. School building kept clean. Latrine on west side too close to class room window. Yard space on west too small. First grade class room crowded and badly ventilated.

George M. Wharton School, Third street, below Pine street. This school always overcrowded, with poor ventilation and defective distribution of light. Class rooms on south side of building are so dark as to require artificial light. Frequent attention has been called to these defects. Building kept clean however.

James B. Anderson Primary, northwest corner Fifth and Pine streets. The second, third and fourth floors of this building are used. Rooms are heated by stoves. No school yard, and water closets up stairs.

Kindergarten, Front and Pine streets. One room in a rented building; good condition.

Sixth Section.

North East School, northwest corner Crown and Race streets. Old fashioned building, not up to modern schools. Many of the inside rooms have to be burning gas daily, as light is poor; ventilation in these rooms is also poor. Separate rooms for clothing. Cellar clean and heaters good.

North East Annex, Union Church Building. An old church, not fit for school purposes. Should be pulled down and new building erected. No cellar under this building for heaters, so each room has a large stove in it, and the scholars sitting near these are overheated, while those at a distance are cold. Rooms are all foul from coal gas. Ventilation only by opening windows. Large room for clothing. Latrines of annex dirty, but those in main school clean and in good condition.

School, New street, above Front street. Very old school, used as a store house. Second floor and one room of first floor used as class rooms. Light and ventilation good. Heated by stoves in each room. New street, from Front to Second street, in front of this school is in very bad condition from accumulated dirt, ashes and garbage. Latrines fairly clean. Separate clothing rooms.

Kindergarten No. 1, Crown street, above Race street. In Union Building. Fifty children.

Kindergarten No. 2, New street, above Front street. In building with Primary. Sixty children.

Seventh Section.

J. S. Ramsey Combined, Pine and Quince streets. Light and ventilation poor. Water closet system defective owing to sluggish flow of water from latrine.

U. S. Grant Combined, Seventeenth and Pine streets. Ventilation defective. In other respects in good condition.

Lippincott Secondary, Nineteenth and Addison streets. General condition very much improved during the year. Forced ventilation and new heating arrangements have been introduced, and the water drains into the sewer instead of over the yards as formerly.

O. V. Catto School, Lombard street, above Twentieth street. Light and ventilation poor. In other respects in good condition.

Secondary and Primary, Twenty-third and Lombard streets. In good condition.

Eighth Section.

Locust Street School, Twelfth and Locust streets. In good condition.

Hollingsworth Combined, Locust street, below Fifteenth street. In good condition.

James A. Garfield School, Twenty-second and Locust streets. In good condition.

Ninth Section.

Keystone Grammar School, Nineteenth street, above Chestnut street. Overcrowded and poorly ventilated.

Zane Street School, Filbert street, above Seventh street. Children's wraps hung in school room. Open cesspool in yard. Light defective. Seats not well arranged.

Tenth Section.

North Western Combined, Fifteenth and Race streets. Insufficient water closet accommodations. Poor ventilation.

John Agnew School, Eleventh and Cherry streets. The leak in cellar from boys urinal has been stopped. Yard

space too small. Rooms on first floor dark and poorly ventilated.

Edward Shippen School, Cherry street, above Nineteenth street. Rooms on west side of building almost useless from defective light. Boys urinal old and very foul.

Eleventh Section.

Northern Liberties Combined, Third street, below Green street, and Northern Liberties Combined, St. John street, below Buttonwood street. In good condition. Yard spaces in both schools too small.

Madison Combined (two buildings) New Market street, above Noble street, and New Market street, above Brown street. The Noble street building is comparatively new and in good condition. The Brown street school is old; small yard with cesspool too close to class room windows.

Twelfth Section.

Mifflin Secondary School, Third street, above Brown street. In good condition.

E. M. Paxson Secondary, Noble street, below Sixth street. In good condition.

Revoudt Primary, Fairmount avenue, below Fifth street. In good condition.

Saunders Primary, Dillwyn and Callowhill streets. In good condition.

Thirteenth Section.

Wyoming Combined, Sixth street and Fairmount avenue. In good condition, with the Smead system of closets and ventilation.

J. Q. Adams Secondary School, Garden street, below Buttonwood street. This is an old building, badly lighted and ventilated. Should be abandoned for school purposes.

Warner Combined, Eighth street, above Parrish street. In good condition.

Fourteenth Section.

Hancock Grammar School, Fairmount avenue, above Twelfth street. An old building, but clean and in good condition.

Robert Vaux School, Wood street, below Twelfth street. Clean and in good condition.

John M. Ogden Secondary, Twelfth and Wistar streets. Since last report yard space has been enlarged, and a new latrine constructed. This is a great improvement, and the school is now in good condition.

Robert T. Conrad School, Melon street, below Twelfth street. In good condition.

Spring Garden School, Twelfth and Ogden streets. School somewhat overcrowded. Yard space too small. Otherwise in good condition.

Fifteenth Section.

Lincoln School, Twentieth street and Fairmount avenue. An old building, but in good condition. Water closets in cellar are clean.

Manual Training School, Seventeenth and Wood streets. In good condition. Exhaust ventilation is to be introduced into some of the class rooms.

Livingston School, Twenty-third street, above Callowhill street. This school has been greatly improved by construction of additional windows on each floor. School now is in good condition.

Bache School, Twenty-third and Brown streets. Sanitory condition fair. Five rooms on first floor inadequately lighted, and nine rooms with insufficient coat accommodations. Three pupils reported as attending school without certificates of successful vaccination, and the Principal refuses to keep a record of those detained from school by reason of contagious disease. She does not plead ignorance of the law for she is fully conversant with its provisions. Water closets now in good condition.

Girls' High School, Seventeenth and Spring Garden streets. In fine condition.

Thaddeus Stevens School, Seventeenth and Swayne streets. The general appointments are fairly good. There is occasionally water in the cellar from some unknown source; this should be investigated, and, if possible stopped. Boys urinal cannot be properly cleaned owing to lack of water supply.

Sixteenth Section.

Jefferson School, Fifth street, above Poplar street. Generally overcrowded; otherwise in good condition.

Wolf School, Charlotta street, above Poplar street. In good condition.

Landenberger School, Fourth street, above George street. In good condition.

Lee School, Girard avenue and Leopard street. Not fit for school purposes. Water closets are foul and filthy.

Seventeenth Section.

Ludlow School, Lawrence and Master streets. Coal gas nuisance is not yet fully abated. This has been referred to for many years.

Webster School, Hancock street, above Girard avenue. In good condition.

Moffett School, Second and Oxford streets. A new building in good condition. There are some skin dressing establishments in the neighborhood which give off very offensive odors at times.

Eighteenth Section.

Douglass School, corner Huntingdon and Edgemont streets. The class rooms are heated by stoves. Filthy lots adjoining the school which have been complained of for many years an dthe nuisance not yet abated.

Chandler School, Montgomery avenue, above Richmond

street. Cellar here is usually damp and should be white-washed and kept thoroughly ventilated.

Shackamaxon or Primary, 1014 Shackamaxon street. Not a well arranged school. Defective light and ventilation, and small yard space.

Gorgas School, Belgrade and E. Susquehanna avenue. In good condition.

Finletter School, northeast corner Montgomery avenue and Gaul street. In good condition.

Adaire School, Palmer street, above Thompson street. In good condition.

Vaughn School, Marlborough street, above Thompson street. Insufficient light in class rooms.

Nineteenth Section.

Megargee School, Susquehanna avenue and Lawrence street. Old building; class rooms heated by stoves. Walls are leaky and need replastering. Insufficient water supply to latrines. A new building urgently needed.

Wm. H. Hunter School, Dauphin and Mascher streets. Leaky cellar next door to school has been abated. Latrines well flushed; yard needs repaving.

John Welsh School, Fourth and Dauphin streets. Building well lighted, heated and in good condition.

Hartranft School, Seventh street, above York street. A fine building in good condition. Smead system of ventilation in water closets very satisfactory.

Wm. F. Miller School, Howard street, above Diamond street. New building in fine condition.

Wm. Adamson School, Fourth street, below Lehigh avenue. Old and defective plumbing. Leaky roof. Defective water closets on second and third floors. Insufficient water supply to latrines.

Cumberland School, Hancock and Cumberland streets. In fair condition. Heating, light and ventilation good, but there is an insufficient water supply to latrines.

Cohocksink School, Fourth and Montgomery avenue. Very old building, but newly repainted, and toilet rooms renovated. Heat and light good.

Franklin School, American street, above Columbia avenue. Very old building. Windows have been repaired. New heating apparatus installed. Latrines well flushed and new hydrants in yard.

Twentieth Section.

Park avenue, Park avenue, below Master street. Stone building of three stories. Newly painted. In good condition. Heating, light and ventilation good.

Rutledge School, Seventh and Norris streets. Old brick building, but in fair condition. Heat and light good.

James Todd School, corner Franklin and Norris streets. In good condition.

James Lynd School, Twelfth street, above Columbia avenue. Fine, large building, well ventilated and heated and lighted. Commodious closets for children's wraps.

Daniel Webster School, Eleventh street, below Thompson street. The building has undergone quite extensive repairs in the past year. All leaks of former years have been stopped save one in the toilet room on first floor. A new and plentiful supply of water to the latrines and teachers toilet rooms has been introduced.

Penn School, southeast corner Eighth and Thompson streets. Building in good condition.

Mervine School, Mervine street, above Jefferson street. This school is composed of three old brick dwellings. The heat, light and ventilation are good, and the cellars dry and cemented.

Ninth Street School, Ninth street, above Montgomery avenue. During the year a new heating apparatus has been placed in the building. Heat, light and ventilation are good. Position of school poor on account of proximity of noisy foundry.

Kindergarten, corner Twelfth street and Montgomery avenue. Second floor room used. Bright and sunny with good ventilation and heat.

1752 N. Twelfth street. Second floor used for school purposes. Neat and clean.

Corner Eighth street and Montgomery avenue. Large and sunny room; well heated and ventilated.

Twenty-first Section.

Levering School, Ridge avenue, below Martin street. Building in good condition, but there is no running water with which to flush the urinal. This connection with the City main should be made.

Schuylkill School, Washington street. Building in good condition. Privy should be connected with sewer and flushed daily. It is a well at present, and very filthy.

All the following schools are in good condition:

Alfred Crease School, Wissahickon avenue, Rittenhousetown.

Manatawna School, Shawmont, below Ridge avenue.

Roxborough School, Ridge and Parker avenues.

Wissahickon School, Ridge avenue and Kalos street.

Washington School, Shur's lane, above Cresson street.

Fairview School, Manayunk avenue, below Green lane.

Manayunk School, Green lane, below Wood street.

In all these schools a great deal of dust is found floating around after janitor has finished sweeping. The floors should be sprinkled with saw-dust impregnated with some antiseptic solution before being swept.

Twenty-second Section.

Chestnut Hill Public School, Twenty-ninth street and Highland avenue. Sanitary conditions good.

Mt. Airy Public School, Allen's lane. The water closets are entirely too small for the size of the school. Primary room crowded, with bad system of ventilation.

D. L. Keyser Public School, Coulter and Morris streets. Overcrowded. Poor system of ventilation.

Sub Primary Kindergarten, Pulaski and Coulter streets. Wraps are kept in small closets in the school room without light or ventilation. Wraps of two or more pupils occupy the same hook.

Pastorius Public School, Woodbine avenue and Sprague street. Sanitary conditions good.

Kindergarten, Morton street, above Haines street. Sanitary conditions good.

Colored Secondary Public School, Price street. Leaky urinal. Urine tracked into class rooms. Gas in cellar and school rooms from defective furnaces. Interior of school should be cleaned and repainted throughout.

Central Combined Public School, Centre street. Sanitary condition good.

Germantown Combined School, Lafayette street. Wraps of the children are deposited on the floor in a pile, and afterwards hung up by the attendant in rooms which are dark and poorly ventilated. This practice should be abandoned.

Rittenhouse Public School, Rittenhouse street. Defective system of ventilation. Low ceilings. Not enough air space per pupil.

Franklin Primary, Church and Musgrove streets. Sanitary conditions good.

A. G. Curtin Public School, Musgrove and Church streets. Sanitary conditions good.

Colored Primary, Coulter street, west of Pulaski avenue. Wraps of the pupils are hung openly in the school rooms. Water closet very offensive necessitating closing the windows, which in turn hinder ventilation. School crowded; three in a seat. Defective light and ventilation in rear room. Building too small.

Bringhurst School, Bringhurst street. Defective sys-

tem of ventilation. School overcrowded. Water closet offensive; should be disinfected.

Schaeffer School, Main and Wyoming streets. Sanitary conditions good.

Spencer Roberts School, Twenty-first and Mill streets. Fine, modern school, first class in all respects. Everything pertaining to the building in good order.

Bringhurst Annex, Bringhurst street, east of Germantown avenue. Two story building in fair repair, but rooms are rather small.

Pittsville School, Haines west of Limekiln Pike. Stone building in good order. Heating and ventilation good. Records in good order. Plenty of light. Water closets in good order.

Elwood School, Ook Lane, Milestown. Stone building in good order. Records well kept. Premises clean. Heating and ventilation good.

Morton School, Branchtown, Green lane east of York road. Stone building in good condition. Furnace heaters, ventilation good. Privies in yard need repairing, and replastering of walls. Escape pipes from urinals in boys yard choked up. Pavement about both closet doors should be relayed, as bricks have been torn up. Records well kept.

Crescentville School, Crescentville. Stone building in good condition. Heating, light and ventilation good. Records well kept. Privies in good condition.

Olney Consolidated School, Tabor road west of Second street pike. Annex, over Buzby's tin shop, Second street pike. Annex in good order in a new brick building. Main school of stone two stories high. Rooms bright, well heated and ventilated, but roof over second story rear class-room leaks badly, as it does also over second story hall. Clothes in closets outside of class-room. Records well kept. Closets in good condition.

Feltonville School, Second street pike and Fisher's lane.

Rough cast building, two stories high, in good condition. Privies clean. Light, heating and ventilation good, and records well kept.

Twenty-third Section.

The following schools in this Section are in good sanitary condition: Henry Herbert School, Frankford avenue below Foulkrod street; Alex. Henry School, Paul and Unity streets; Marshall School, Sellers and Franklin streets; Whitehall School, Tacony road and Pratt street; Decatur School, Orchard below Church street; Wilmot School, Meadow and Cherry streets; James Seddon School, Hedge and Brown streets.

Twenty-fourth Section.

E. Spencer Miller School, Forty-third and Ogden streets. A fine modern building with all the best sanitary appliances, and in very good condition. Some few class-rooms are slightly overcrowded.

Joseph Leidy School, Forty-third and Leidy avenue. Building is new and in fine sanitary condition throughout. No overcrowding.

Haverford School, Thirty-fifth and Haverford streets. An old building, but in good condition. On account of close proximity to several dwelling houses, the entrance of light and air is to some extent interfered with in some of the class rooms.

Haverford Kindergarten (adjoining main school). Building, an old dwelling house, in good sanitary condition.

Morton McMichael School, Thirty-fifth and Fairmount avenue. A new building in perfect sanitary condition, with all the modern improvements.

Belmont School, Forty-first and Brown streets. An old building, but in fair condition. A leakage of gas was noticed in one of the second floor rooms.

Astenville School, Monument avenue and Ford road. One room only in use. The old pump well has been abandoned during the year, and hydrant water introduced. The cesspool is full but this is caused by rain water running in, and will probably drain out. The school room walls on the east side are very damp, and the paper has been loosened and is hanging. The cloak-room walls are also very damp. The walls should be scraped, made dry and then painted, not repapered.

Warren School, Thirty-eighth below Powelton avenue. An old building, shut in by dwelling houses, which cut off light and air. There is a spring in the cellar under the floor in the northwest corner, and water also runs in after rains.

Mantua School, Thirty-eighth and Mt. Vernon streets. An old building, but in fair condition.

Warren Kindergarten, Fortieth and Green streets. This building is a store, and the school room is the large sales-room. In good condition.

Twenty-fifth Section.

Henry W. Halliwell School, Frankford below Allegheny avenue. There are several poorly lighted rooms in this building. The ventilation is not good.

John H. Webster School, Frankford avenue and Ontario street. A new modern school building, in good condition.

Sherman School, Frankford avenue and Somerset street. An old building scarcely fit for school purposes. A new school is needed.

Barton School, Frankford avenue and Buckius street. Cross lights and poor ventilation complained of still exist here.

McClellan, No. 1, Edgmont and Neff streets. Ventilation faulty, and lights poor.

McClellan, No. 2, Thompson and Neff streets. In good condition.

Carroll School, Salmon above Somerset streets. Insufficient light and ventilation in several rooms.

Bridesburg School, Richmond and Jenks streets. In good condition.

Martin School, Richmond and Ontario streets. A new building, in good condition.

Twenty-sixth Section.

Nicholas School, Sixteenth and Wharton streets. In good condition. The drain from closet in yard to sewer is often choked causing back water in the yard.

Geo. W. Childs School, Seventeenth and Tasker streets. In good condition.

Jackson School, Twelfth and Federal streets. In good condition.

Federal Hall School, Seventeenth and Federal streets. This school is over a market house, but is very clean and in good condition.

F. M. Drexel School, Sixteenth and Moore streets. A new building, in good condition.

Drexel Annex, Fifteenth and Porter streets. Recently organized in a rented building. It is overcrowded, heated by stoves and surrounded by an unpaved yard.

Church School, Wharton below Eighteenth street. In fair condition. Light and ventilation are poor.

Twenty-seventh Section.

Newton School, Thirty-sixth and Chestnut streets; Woodland Combined, Forty-sixth and Woodland avenue; Boons Dam Schol, Island and Penrose Ferry road. All these schools are new and first class in all their appointments.

Newton School, Ludlow street, below Thirty-sixth street.

Newton Girls School, Thirty-eighth and Spruce streets.

Annex (Colored), Forty-second and Ludlow streets.

J. K. Lee, Forty-fourth street and Baltimore avenue.

West End, Sixtieth and South streets.

Paschall Combined, Seventieth street and Woodland avenue.

Paschall Annex, Seventieth street and Woodland avenue.

These schools are in good order, but there are some defects in general cleanliness. Ventilation, light (cross lights), and in the method of disposing of children's wraps.

Elmwood School, Eighty-sixth and Holstein avenue. Badly situated building. An old frame dwelling. Yard unpaved, so that ti cannot be used as a play-ground in bad weather. Privy well and surroundings very offensive.

Clearview School, Seventy-sixth and Buist avenue. This is an old farm house. Ventilation of class room is poor, and they are overcrowded. Wraps for children thrown upon the floor as there are no clothing closets.

Price School, Forty-seventh and Locust streets. Condition of this building has been somewhat bettered by the grading of the surrounding streets. It is still without underdrainage and the urinal beside the water closet is a source of constant annoyance.

Greenway School, Fifty-second and Greenway avenue.

Greenway Annex, Fifty-second and Greenway avenue.

This school and annex are objectionable, but are to be replaced by a modern structure.

Twenty-eighth Section.

Glenwood School, Thirtieth and Gordon streets. A modern school building in good condition, having the Smead Wells system of heating and ventilating. The floors of the closets are unpaved, having, as was the case until recently at the Boker School, dirt bottoms, without

means of draining the liquid contents. The boys urinals are galvanized troughs, which are about worn out, and should be displaced by more sanitary arrangements. There is some water in cellar.

Bellevue School, Twenty-sixth and Cumberland streets. An old building, overcrowded, with many rooms improperly lighted and ventilated, and one room without windows, and lighted from a shaft.

Stanton School, Sixteenth and Cumberland streets. A modern building, with Smead Wells system of heating and ventilation. In fine condition.

Twenty-ninth Section.

Muhlenburg School, Seventeenth and Master streets. During the summer this building was painted throughout. Clothing is hung in closets which are not ventilated. Two halls have hooks for hanging clothing. No disinfectants are used in water closets. Garbage is burned after school hours. The latrine system is in good condition. Heating is by furnaces; the basement is clean. Register is to be kept according to law.

Robert Morris School, Twenty-sixth and Thompson streets. This is a modern school with all the best known appliances for hygenic education. It is ventilated and heated by steam, and great care is taken to keep the school in good condition. The register is kept according to law. The clothing is hung in closets some of which are ventilated into the hall, and some by windows into open air. There is not enough yard room for a school with so many pupils. The Smead system is in use. Garbage is burned. The teachers are well provided with retiring rooms, dining rooms and water closets.

Edward Gratz School, Twenty-third and Jefferson streets. The rooms are warmed with heaters; ventilation by windows. No transoms over doors. The school is full.

The general register is kept according to law. The Latrine system is flushed nightly. Closets are clean, and the yard and basement in good condition. Clothing in closets not ventilated. Not a strictly modern school.

Reynolds School, Twentieth and Jefferson streets. The principal keeps register according to law. There are some closets for clothing, but not enough. Some clothing is hung in the halls. The walls of the building and rooms have been painted during the summer. The Latrine system is in use. Teachers closets and retiring rooms are supplied. Basement is clean and yard well kept.

Primary No. 1, Twenty-sixth and Columbia avenue. Register kept according to law. Clothing closets ventilated. Water closet kept in good order. Urinals for boys clean and well kept. The building consists of two stories above several stores. There is no play-ground.

Geo. G. Meade School, Eighteenth and Oxford streets. This school is in very good sanitary state. Clothing rooms for pupils. The register is kept according to law. Latrine system in use, well flushed, and free from odor. Steam heat. The basement is clean and well whitewashed. The water closets for teachers are well kept, and of modern make. Yard is clean and garbage burned.

E. K. Kane, Twenty-fifth and Jefferson streets. Heated with warm air. Latrine system in use, well kept. One flush closet for teachers. Books collected and burned in furnace after contagous sickness. Register kept according to law. Clothing closets ventilated. Basement is clean. Yard ample and kept clean. Retiring room, kitchen and dining room for teachers.

Wm. D. Kelley School, Twenty-eighth and Columbia avenue. This is a modern school, heated by steam and having the Smead system. Clothing closets are provided, and they are ventilated and carefully kept. No disinfectants are furnished by the Board of Education, though

occasionally furnished by the Health Board. The water closets are kept clean. The school register is carefully kept accordingly to law. Suspicious cases are excluded from school, and a daily inspection is made for that purpose by the teachers.

Thirtieth Section.

E. M. Stanton School, Seventeenth and Christian streets. In good condition. There is a foul odor in the girls' water closet. Should be cemented.

James Pollock School, Fitzwater street, above Fifteenth streets. Girls' water closet needs repairing. In some rooms the light is bad and the ventilation poor.

Chester A. Arthur School, Twentieth and Catharine streets. In good condition. Seats have been changed in rooms so that pupils do not face the light.

Wm. T. Pierce School, Twenty-fourth and Christian streets. In fair condition, but ventilation is poor in some of the class rooms.

Thirty-first Section.

Hart School, Memphis and York streets.

Witte School, corner York and Tulip streets.

Adams School, Adams street, above Amber street.

Mott School, Huntingdon street, below Sepviva street.

Brown School, Sergeant and Jasper streets.

All these schools are in good condition.

Primary No. 3, Dauphin and Belgrade streets. This school is not in good, sanitary condition. On the girls sdie there is a party well, within a few feet of the door of the school room. The order permeates the room and is offensive, especially when the weather is warm. On the boys side is an antiquated zinc lined trough, and a very offensive well, this is especially so in warm weather. This system should be done away with and a more ecient one adopted.

Thirty-second Section.

Kindegarten No. 3, 2137 Park avenue. Two rooms—small parlor and sitting rooms of a private house. Halls over corner stores would be better than private houses for Kindergartens, because this like other houses used is too small for the purpose. One water closet for all pupils. Small yard. The water closet has foul odor, no disinfectants being used. Registers kept legally by the teachers. Accommodations are entirely inadequate.

Jos. Singerly School, Twenty-second and Berks streets. A modern school, heated by steam. Smead system which is satisfactory. Good ventilation and plenty of transoms. Register kept according to law. Plenty of clothing closets, ventilated. There are four hundred pupils on half time, showing the need of more school room. Large yard, kept clean. Basement clean and well kept.

Camac School, Thirteenth and Susquehanna avenue. Register kept according to law. Recent improvements made for lighting up dark rooms. Not enough clothing closets. No retiring room for teachers. Principal's room is too small and there is no lunch room. There is plenty of yard space. The latrines are flushed daily and by use of disinfectants they are usually inoffensive. This school is not a modern building, but could be improved. The basement is clean. Garbage is burned. Hot air heating.

Powers School, Susquehanna avenue and Woodstock street. House and yard clean. Not enough clothing closets. Books burned when returned from families where there have been contagious diseases. The Latrine system in use. Closets are clean. Garbage burned. Cellar whitewashed and clean.

Kindergarten No. 1, 1840 North Twentieth street. This property is suitable for the purpose. There is a large yard and two large rooms for the school. They are well

lighted and ventilated. The regsiter is kept according to law, and the water closets in the yard are clean.

Kindergarten No. 2, corner Twenty-seventh street and Ridge avenue. This school consists of two rooms on the second floor. No yard. Not a suitable property; only one water closet for boys and girls in common, and that is in the bath room. Register kept according to law.

Jas G. Blaine School, Thirtieth and Norris streets. This is a modern school recently built. Clothing closets provided properly ventilated. Building heated by steam and ventilated by blower. The Latrine system kept clean and has ventilation provided. There is ample schol yard surrounding the school house. School and yard in a fair condition of cleanliness.

Kindergarten No 4, Thirty-first and Norris streets. Second story of private house. No yard provided for children. One room in good condition of ventilation; one room not so good. Both rooms should be provided with ventilators. A bath room with one closet is not enough for the children.

Fontain Secondary, Seventeenth and Fontain streets. Building second and third stories of a market house. The principal's register is kept according to law. No clothing hanging in school rooms. Ventilation by windows. This building will be given up when the new school building now under construction at Sixteenth and Norris streets is finished. The yard here is not large enough. The water closets in the yard are not well drained. The urinal is foul smelling, an dthe cellar in bad condition. Complaint is made by the teachers that cellar smells come up the heater flues.

Claghorn School, Seventeenth and Susquehanna avenue. Steam heat and hot air. Latrine system flushed frequently and kept clean. Yard spacious and clean. Good light and ventilation. Clothing closets ventilated and separate

from school rooms. Garbage burned. Basement clean. Disinfectants in use.

Thirty-third Section.

Thos. Potter Grammar School, corner Fourth and Clearfield streets. Boys water closet is foul and poorly ventilated, the windows being stationary. Sanitary condition fair. Under drainage.

Asa Packer School, Broad street, above Germantown avenue. Overcrowded. Eight divisions on half time. Bad ventilation. Water closet in yard is foul. Two water pipes in cellar are leaking. Position of many of the desks should be changed, in order to have better light. Some desks are unsuitable. No cloak rooms except for scholars on the third floor. Sanitary condition fair. Under drainage.

Boudinot School, Indiana avenue and D street. Overcrowded. Ten divisions on half time. Light and ventilation fair. Some of the windows need weather strips. Insufficient cloak room, the halls being used for this purpose. Sanitary condition good. Under drainage.

Fairhill School, Marshall and Somerset streets. Ventilation fair. Water supply is often foul. Sanitary conditions good. Underdrainage.

Bayard Taylor School, Turner street, above Venango street. This school consists of two buildings connected by a bridge. New building; sanitary conditions good. Underdrainage. Old building, overcrowded. Bad light. Cloak rooms too small, and badly ventilated. Wraps are also hung in halls. Sanitary conditon fair. Underdrainage. Five divisions are on half time.

Wm. Cramp School, Howard and Tioga streets. School consists of two buildings. Main building overcrowded. Sanitary condition good. Underdrainage. Annex, situated at 3523 North Second street, is a rented building

and unfit for school purposes. Bad light and ventilation. Stoves do not heat rooms properly. Carpets contain much dust. No cloak rooms. Desks unsuitable. Pump is too close to cesspool, and leading from it is a foul gutter. Foul privy. Cellar damp and musty. Sanitary condition bad. Surface drainage.

Hopkinson School (rented), Rising Sun. Overcrowded. Light and ventilation are bad. The light is especially bad in one room caused by building next on the west. Some pupils are required to sit too close to stoves. Desks unsuitable. Filthy gutter in front of building. Privy very foul. No cellar. This building is unfit for school purposes. Sanitary condition bad. Surface drainage.

Potter Primary, in same building with Thos. Potter School.

I. P. Morris School (rented), 3520 K street. Overcrowded. Light and ventilation are bad. Ceilings are too low Cold air comes in under wainscoting Doors and windows need weather strips Some pupils are compelled to sit too near the stoves There are four class rooms; one is subdivided by a curtain. No cloak rooms Damp cellar. Boys urinal and the privy are foul. Part of surface water stagnates in yard, and part drains into lot next on the north. Gutter in yard needs repaving. Gutter in front is foul. This building is unfit for school purposes. Sanitary condition bad. Surface drainage.

Kindergarten No. 1 (rented). This school occupies one room of William Cramp Annex.

Kindergarten No. 2 (rented). Cellar is damp and often contains three or four inches of water. The school consists of two rooms. Alley in rear is filthy. Doors need weather strips. Sanitary condition fair. Underdrainage.

Thirty-fourth Section.

Heston Kindergarten, Conestoga street, above Lansdowns avenue. This school is in a new building and well

adapted for such a purpose. The school room is large and well ventilated.

Heston Kindergarten Annex, Fifty-second and Master streets. Two rooms are in use. The rooms are large and well adapted for the purpose.

Martha Washington School, Forty-fourth and Aspen streets. This is an old school, but is in as good sanitary condition as could be expected.

Norris J. Hoffman School, Fifty-fifth and Vine streets. A new school and in perfect condition.

Jas. Rhoades School, Forty-ninth and Parrish streets. In perfect sanitary condition throughout, having all the modern improvements in sanitation, heating and ventilation.

Jesse George School, Sixty-third-and-a-half and Hamilton streets. An old school, but in good sanitary condition. Ventilation is by means of windows. The centre rooms are quite dark, especially on cloudy days.

Heston School, Fifty-fourth and Lansdowne avenue. An old school, with no modern improvements, but no serious faults. Ventilation by windows. Some rooms are overcrowded.

Heston Annex, Fifty-fifth and Lancaster avenue. Only one room is used. This is an old dwelling house and is unfit for school purposes. The school room has not proper ventilation. The cellar walls are damp, and cellar at times contains water.

Thirty-fifth Section.

Disston School, Tacony. Overcrowded. Three divisions on half time. Drain in yard is now being repaired, so that the water closet may be flushed. Sanitary condition good. Underdrainage.

Brown School, Frankford avenue, Holmesburg. Overcrowded. Two divisions on half time. In three rooms

there are not enough desks for all the scholars. Cesspool in yard is in better condition this year, but is still foul at times. Cellar formerly contained water, but is now underdrained. There is insufficient ventilation in the Smead system. Sanitary condition fair. Surface and underdrainage.

Fayette School, Bustleton. Light and ventilation fair. No transoms. New racks have been erected in the halls for wraps, which formerly hung in the class rooms. Sanitary condition good. Surface drainage.

Wissinoming School (rented). Some rooms are overcrowded. One room on the third floor is insufficiently heated. Full privy. Sanitary condition fair. Surface drainage.

Washington School, Lawndale. Two buildings about a quarter of a mile apart. Main Building. Light is fair. Insufficient cloak room. Water in the cellar. Instead of a cesspool there is a wooden box, the contents of which leak into the yard. The pump water is in such bad condition that it is not used; the scholars using a neighbor's pump. Sanitary condition fair. Surface drainage.

Annex (rented). This is one room of a church. Poor light and no cloak room. Scholars hang their wraps in class rooms. Privy foul. Sanitary condition fair. Surface drainage.

Comly School, Somerton. Yard becomes very muddy, hence it is tracked into school. Weather strips are needed to keep out rain and cold. Urinal is foul and obstructed. Sanitary condition good. Surface drainage.

Holme School, Collegeville. Only one cloak room, which is inadequate. Windows and doors need weather strips. One of the two privies is full. Sanitary condition fair. Surface drainage.

Wheat Sheaf School. Urinal is foul and obstructed. Light and ventilation are bad. Insufficient cloak rooms.

Doors and windows need weather strips. Cellar is very damp. Sanitary condition bad. Surface drainage.

Rush School, Byberry. Light is bad, as it comes from all sides. No cloak room. Sanitary condition fair. Surface drainage.

Mechanicsville School. Light is bad. Water is foul. Sanitary condition fair. Surface drainage.

Maplegrove School.

Tillyer School. Sanitary conditions are good. Surface drainage. In Maplegrove School the light is only fair in certain rooms.

Godfrey School. Weather strips are needed for doors and windows. Sanitary condition good. Surface drainage.

Kindergarten No. 1, in Disston School.

Kindergarten No. 2, in Brown School.

Kindergarten No. 3, in Wissinoming School.

This school should have cloak room, as wraps hang in school room.

Fox Chase School, Fox Chase. In good condition.

Thirty-sixth Section.

Logan School, Nineteenth and Reed streets. Only fair condition. The inside closets are practically useless and should be repaired at once. The second floors should be kept cleaner.

Landreth School, Twenty-third and Federal streets. In good condition.

McDaniel School, Twenty-first and Moore streets. In good condition.

Franklin School, Rope Ferry Road. In good condition.

Alcorn School, Twenty-fourth and Wharton streets. In good condition. A lot adjoining this school is made the receptacle of much garbage which is very objectionable to the scholars, and the nuisance should be abated.

Point Breeze School, Point Breeze. The school is clean and well kept, though the surroundings are not what might be desired.

Benson school, Twenty-seventh and Wharton streets. In good condition.

Girard School, Eighteenth and Passyunk avenue. In fair condition. This school is overcrowded and has an unpaved yard.

Kindergarten, Thirty-third and Wharton streets. In good condition.

Thirty-seventh Section.

Cambria School, Thirteenth and William streets. This is a modern school. This summer, on account of its crowded condition, an annex was built which will accommodate four hundred more pupils. During the year the water closets have been improved by putting in skylights. The Smead system is used. Basement clean and whitewashed. Clothing closets properly ventilated are provided. The register book is kept according to law, and all pupils are excluded who do not have proper return cards after exclusion on account of contagious diseases. Books of pupils affected with contagious diseases are burned. Garbage is burned. School is well ventilated. The water closets are kept clean. No disinfectants are provided by the Board of Education.

Oakdale School, Eleventh and Huntingdon streets. There are three schools in this building. There is ample yard room, and the Latrine system has a good water supply, and is carefully attended to. Water closets are clean. By the recent introduction of ventilators in the windows, a good supply of fresh air is obtained. There are closets for the pupils clothing, and a teacher's room with proper conveniences. The registers are kept according to law. No disinfectants are supplied. The basement is clean and well kept. After contagious sickness the books are burned.

Cambria Kindergarten No. 3, 2847 N. Eleventh street.

Cambria Kindergarten No. 4, 2847 N. Eleventh street. These schools are in a private house, occupying a part of it. The house is not suitable for school purposes. The school rooms are small, crowded and poorly ventilated in cold weather. Clothing is hung in the halls. One water closet in the yard is not in a good place, being in an outside kitchen through which the children are obliged to pass.

Kindergarten No. 1, Tenth and Boston avenue. Two rooms are used in a corner property. Good light; ventilation fair. Clean water closet. This building is better than some used for Kindergarten purposes, but it is inadequate for a school.

Kindergarten, 3462 Germantown avenue. Well lighted room but poorly ventilated. Childrens' clothing hung in school room. No yard. Clean water closet. Register well kept according to law.

Thirty-eighth Section.

Boker School, Twenty-second and Ontario streets. Modern building in good order, with Smead-Wells system of heating and ventilating. The earth floors of the closets which have proved such an annoyance, and concerning which recommendations have been made in the reports of the past two years, have been replaced by cement floors.

Forest School, Crawford street, Falls. Two buildings. One modern, with Smead-Wells system of heating and ventilating, and spacious rooms. The other an older building with fairly good accommodations. The play-ground is but partially paved, and the surface drainage from numerous properties in the vicinity flows into the yard, and is tracked into the school by the pupils.

Kenderton School, Fifteenth and Ontario streets. Half the class rooms are poorly ventilated and the fresh air

supply is secured by raising the windows, thus subjecting the children to drafts. In two rooms it is necessary to use gas light about half the time. Closets for childrens' wraps are too small in size and too few in number. Wraps are hung in the hallways The room for the principal and the teachers' retiring rooms are too small. The flooring throughout the building is so badly worn and splintered that it cannot be kept clean. The cellar is partly paved with bricks, and at times is damp. The boys' yard is only half paved and in damp weather much mud is tracked into the school room. The school is greatly overcrowded, nearly three hundred pupils being on half time.

Respectfully submitted,

J. HOWARD TAYLOR,

Medical Inspector.

Appropriations to and Expenditures of the Board of Health for the year 1897.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance m erging.	Balance not merging
An Ordinance to make an appropriation to the Department of Public Safety (Bureau of Health), for the year 1897, approved December 31, 1896	$198,270 00				
Additional appropriation, ordinance approved June 9, 1897	18,000 00				
Transferred to, ordinance approved Oct. 26, 1897	15,900 00				
Transferred to, ordinance approved Dec. 27, 1897	10,607 00				
	$242,777 00				
Transferred from, ord. approved Oct. 26, 1897	900 00				
	$241,877 00				
Transferred from, ord. approved Dec. 27, 1897	1,787 68				
	$240,089 32				
Items					
1. For salaries: Health Officer (fixed by Act of Assembly)	$2,100 00				
Chief clerk	1,800 00				
First assistant clerk	1,500 00				
Two assistant clerks, $1,200 each	2,400 00				
Two assistant clerks, $1,000 each	2,000 00				
Chief registration clerk	1,500 00				
Nine assistant registration cl'ks, $1,000 each	9,000 00				
Port physician	1,200 00				
Messenger	800 00				
Medical inspector, including carriage hire.	2,300 00				
Provided, That said inspector shall inspect the school buildings belonging to the City, and report their condition and his recommendations at the close of the year.					
Typewriter for Medical Inspector	600 00				
Fifteen assistant medical inspectors, five of whom shall be physicians of the Homœopathic School of Practice, $1,200 each	$18,000 00				

Appropriations and Expenditures—Continued.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Item 1—Continued.					
Chief inspector of nuisances, including carriage hire	1,900 00				
Chief inspector's clerk	1,000 00				
Twenty inspec'rs, $1000 each	20,000 00				
Two collectors of vital statistics, $1,000 each	2,000 00				
Two inspectors of privy cleaning, $900 each	1,800 00				
One vessel inspector	900 00				
Stenographer and typewriter	750 00				
Chief clerk to Health Officer (fixed by Act of Assembly)	1,200 00				
Assistant to chief clerk	800 00				
Three house cleaners $360 each	1,080 00				
Medical attend't Municipal Hospital	2,000 00				
Resident physicians	1,500 00				
Provided, The number and salaries of which shall be regulated by Board of Health, with the approval of the Director of the Department of Public Safety.					
Uniforms for five men, $40 each	200 00				
Steward	700 00				
Matron	360 00				
Disinfector, including carriage hire	1,400 00				
Six assistant disinfectors, $900 each	5,400 00				
Chief inspector of milk, including carriage hire	1,900 00				
Four assistant inspectors of milk, $1,020 ea., including car fare	4,080 00				
Five collectors of milk, $720 each, including car fare	3,600 00				
Chemist	1,500 00				
Chief inspect'r of House Drainage, including carriage hire	2,400 00				
Twelve assistant inspectors, $1,200 each	14,400 00				
Clerk	1,200 00				
	$115,270 00				
Transfer from, ordin'ce approved June 9, 1897	700 00				
	$114,570 00				
Transfer from, ordin'ce approved Oct. 26, 1897	900 0				
	113,670 00				
Transfer from, ordin'ce approved Dec. 27, 1897	145 81				
		$113,524 19	$113,475 81	$48 38	

Appropriations and Expenditures—Continued.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Items.					
2. For pay of vaccine physicians.....	$6,000 00				
Transfer from. ord'ce appr'ved June 9, 1897	3,800 00				
	2,200 00				
Transfer to, ord'ce approved Oct. 26, 1897...	2,000 00				
	4,200 00				
Transfer to, ord'ce approved Dec. 27, 1897...	1,000 00	$5,200 00	$5,200 00		
3. For purchase of vaccine virus.....	$1,200 00				
Transfer from, ord. approved June 9, 1897...	500 00				
	$700 00				
Transfer to, ord'c approved Dec. 27, 1897..	307 00	1,007 00	1,007 00		
4. For postage, miscellaneous and incidental expenses, including use of telephone.....	$1,300 00				
Transfer to, ordinance approved Dec. 27, 1897	750 00	2,050 00	2,050 00		
5. For stationery and printing, blank books, advertising, books for library, executing the Registration Act, printing rules, and information for the preservation of the public health.....	$3,400 00				
Transfer to, ordin'ce approved Oct. 26, 1897..	500 00				
Transfer to, ordin'ce approved Dec. 27, 1897...	1,000 00	4,900 00	4,900 00		
6. For removal of nuisances and expenses incidental thereto, and making special sanitary inspections for quarantining infected houses.....	$23,000 00				
Transfer to, ordin'ce approved Dec. 27, 1897..	1,150 00	24,150 00	24,150 00		
Provided, That the City Controller may countersign warrants on this item for 1896.					

Appropriations and Expenditures—Continued.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Items.					
7. For disinfecting tank, horses, drivers, etc., purchase of disinfecting apparatus, materials, etc	$3,500 00				
Transferred to, Ordin'ce approved Dec. 27, 1897	1,000 00	$4,500 00	$4,500 00		
8. For the care of patients, including the pay of cooks, nurses, firemen, gardener, drivers of ambulances, disinfector, hostler, etc.	$10,000 00				
Additional appropriation, ordinance approved June 9, 1897...	6,000 00				
	16,000 00				
Transferred to, ordinance approved June 9, 1897	2,000 00				
Transferred to, ordinance approved Oct. 26, 1897	5,500 00				
Transferred to, ordin'ce approved December 27, 1897	500 00	24,000 00	23,974 46	$25 54	
9. For board and washing for patients, nurses, officers, etc.,	$9,000 00				
Additional appropriation, ordinance approved June 9, 1897...	6,000 00				
	$15,000 00				
Transferred to, ordinance approv'd June 9, 1897	2,390 72				
Transferred to, ordinance approved Oct. 26, 1897	$5,700 00				
Transferred to, ord. approved Dec. 27, 1897...	2,000 00	25,090 72	25,090 72		
Provided, That warrants shall be drawn against this item without advertisement whenever the bill is approved by the President *pro tem.* and Secretary of the Board of Health, and the proper committee thereof, and by the Director of Public Safety.					
Provided, That the City Controller may countersign warrants on this item for 1896.					
10. For clothing, bedding, furniture, repairs, lights, brushes, soap, cleansing, drugs, coffins, and burial expenses	$3,500 00				

Appropriations and Expenditures—Continued.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Item 10—Continued.					
Additional appropriation, ordinance approved June 9, 1897....	2,000 00				
	$5,500 00				
Transfer to, ord'ce approved June 9, 1897.. ..	1,000 00				
Transfer to, ord'ce approved Oct. 26, 1897...	1,000 00				
Transfer to, ord'ce approved Dec. 27, 1897..	2,000 00	$9,500 00	$9,500 00		
Provided, That the City Controller may countersign warrants on this item for 1896.					
RESOLUTION					
Authorizing and requesting the City Controller to countersign warrants against Item 10, in the annual appropriation to the Department of Public Safety (Bureau of Health) for the year 1897, and suspend joint rule 30 of the Select and Common Councils.					
Resolved, by the Select and Common Councils of the City of Philadelphia: That the City Controller be and is hereby authorized to countersign warrants drawn by the Department of Public Safety (Bureau of Health) against Item 10, in the annual appropriation for the year 1897, viz.: in favor of John Campbell for one hundred and twenty-five (125) dollars and seventy (70) cents; Jas. O'Kane, for two hundred and twenty-four (224) dollars, and John P. Gallagher, for one hundred and seventy-one (171) dollars and ninety-four (94) cents, which are charges made in 1896 and approved by the Board of Health, and joint rule No. 30 of the Select and Common Councils be suspended for the purpose of enabling the Clerks of Common and Select Councils to present this resolution to the Mayor for his approval or disapproval.					
March 1, 1897.					
11. For fuel.....	$2,500 00				
Transferred to, ordinance approved Oct. 26, 1897.....	500 00				
Transferred to, ordinance approved Dec. 27, 1897.....	300 00	3,300 00	3,299 65	$0 35	

Appropriations and Expenditures—Continued.

General Appropriation.		Amount appropria'd.	Amount counters'gd.	Balance merging.	Balance not merging
Items.					
12. For the purchase of horses, vehicles, and harness, and keep of and repairs to same...	$1,500 00				
Additional appropriation, ordinance approved June 9, 1897...	1,700 00	$3,200 00	$3,199 54	$0 46	
13. For insurance and general improvements and repairs to buildings, grounds, and appurtenances.....	$2,000 00				
Additional appropr'n, Ord. approved June 9, 1897.....	2,300 00				
	$4,300 00				
Transferred to, ordinance approved Oct. 26, 1897.....	500 00				
	$4,800 00				
Transferred to, ordinance approved Dec. 27, 1897.....	500 00	5,300 00	5,261 30	38 70	
14. For purchase of chemicals, apparatus, and incidentals for laboratory.....		750 00	750 00		
Provided, That warrants shall be drawn against this item without advertisement, whenever the bill is approved by the proper committee of the Board of Health and by the Director of Public Safety.					
15. For salaries:					
Chief bacteriologist.....	$4,000 00				
Assist. bacteriologist...	2,000 00				
Second assistant	1,200 00				
Clerk	1,000 00				
Two helpers, $600 each,	1,200 00				
Cleaner.....	240 00				
Provided, That salaries in this division shall be fixed from time to time by the Board of Health and the Mayor.					
For the purchase of materials, apparatus, and incidentals for biological laboratory,	610 00				
	$10,250 00				
Transferred to, ordinance approved October 26, 1897.....	200 00				

Appropriations and Expenditures—Continued.

General Appropriation.		Amount appropria'd.	Amount counters'g'd	Balance merging.	Balance not merging
Item 15—Continued.					
Transferred to, ordin'ce approved December 27, 1897	100 00				
	$10,550 00				
Transferred from, ordinance approved June 9, 1897	390 72				
	$10,159 28				
Transferred from, ordinance approved Dec. 27, 1897	411 10				
		$9,748 18	$9,748 18		
ORDINANCE.					
(To Item 15, approved Feb. 24, 1897) To authorize the Director of the Department of Public Safety to appoint additional assistant bacteriologists and helpers in the Bureau of Health. SECTION 1. *The Select and Common Councils of the City of Philadelphia do ordain*, That the Director of the Department of Public Safety be and he is hereby authorized to appoint additional assistant bacteriologists and helpers in the Bureau of Health, salaries to be chargeable to Item 15 of the annual appropriation to the Department of Public Safety (Bureau of Health) for the year 1897.					
16. For special sanitary inspections and general expenses necessary for the protection of the public health	$5,000 00				
Transferred from, ordinance approved December 27, 1897	1,230 77				
		3,769 23	3,769 23		
17. For costs and expenses in executing warrants for violation of the Act of June 26, 1895, by consignors and shippers of adulterated milk in counties other than Philadelphia		100 00	99 43	$0 57	
Totals		$240,089 32	$239,975 32	$114 00	

RECAPITULATION,

General appropriation, December 31, 1895	$198,270 00
Additional appropriation, June 9, 1897	18,000 00
	$216,270 00
Transferred from other Bureaus, October 26, 1897	15,900 00
Transferred from other Bureaus, December 27, 1897	10,607 00
	$242,777 00
Transferred to other Bureaus, October 26, 1897	900 00
	$241,877 00
Transferred to other Bureaus, December 27, 1897	1,787 68
Total appropriation	$240,089 32
Amount expended	239,975 32
Balance merging	$114 00