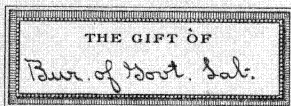
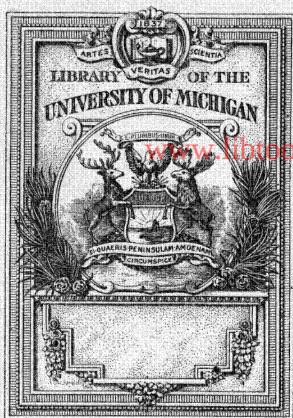


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DEPARTMENT OF THE INTERIOR
BUREAU OF GOVERNMENT LABORATORIES

I. BIRDS FROM THE ISLANDS OF ROMBLON,
SIBUYAN, AND CRESTA DE GALLO

II. FURTHER NOTES ON BIRDS FROM TICAQ,
CUYO, CULION, CALAYAN, LUBANG,
AND LUZON

BY

RICHARD C. MCGREGOR

Contributor in Philippine Fly Science

MANILA
BUREAU OF PUBLIC PRINTING
1905

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(Continued on third page of cover.)

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF GOVERNMENT LABORATORIES,
OFFICE OF THE SUPERINTENDENT OF LABORATORIES,
Manila, P. I., November 26, 1904.

SIR: I have the honor to transmit herewith and recommend for publication articles entitled "I. Birds from the Islands of Romblon, Sibuyan, and Cresta de Gallo," and "II. Further Notes on Birds from Ticao, Cuyo, Culion, Calayan, Lubang, and Luzon," by Richard C. McGregor, collector of natural-history specimens.

Very respectfully,

RICHARD P. STRONG,
*Director Biological Laboratory,
Acting Superintendent Government Laboratories.*

HON. DEAN C. WORCESTER,
Secretary of the Interior, Manila, P. I.

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I. BIRDS FROM THE ISLANDS OF ROMBLON, SIBUYAN, AND CRESTA DE GALLO.¹

By RICHARD C. MCGREGOR.

PREFATORY NOTE.

DEPARTMENT OF THE INTERIOR,
Manila, November 18, 1904.

In order to facilitate administration, Mr. Richard C. McGregor, collector of natural-history specimens, and his two Filipino assistants have been transferred from the Ethnological Survey to the Bureau of Government Laboratories. The results of the work of Mr. McGregor and his assistants have heretofore been published by the Ethnological Survey under the title "Bulletins of the Philippine Museum." They will hereafter be issued as publications of the Bureau of Government Laboratories.

DEAN C. WORCESTER,
Secretary of the Interior.

On May 25, 1904, the writer with two Filipino assistants left Manila for the purpose of collecting on the more important islands of the Romblon group. Romblon Island was first visited. The ten days spent there enabled us to secure specimens of its peculiar birds and to add several interesting species to Worcester's list. From Romblon we moved to the town of San Fernando in the Island of Sibuyan, where we remained, with the exception of a one-

¹ The first four bulletins in the ornithological series were published by the Ethnological Survey under the title "Bulletins of the Philippine Museum." Future ornithological publications of the Government will appear as publications of the Bureau of Government Laboratories.

day trip to Cresta de Gallo, until our departure for Manila on the 21st of July.

Thus far our only knowledge of the birds of Romblon Province has been based upon the work of Prof. Dean C. Worcester, who, with his collector, Mateo Francisco, visited and collected on the three largest islands of the group, viz, Romblon, Tablas, and Sibuyan. The results, as published in Worcester and Bourns' "Distribution List," show 71 species for Tablas, 65 for Sibuyan, and 47 for Romblon.¹ Altogether 88 species were recorded from the three islands visited, 7 of which were described as new, viz, *Iyngipicus menagei*, *Chibia menagei*, *Dicaeum intermedium*, *Dicaeum sibuyanum*, *Iole cinereiceps*, *Rhipidura sauli*, *Hyloterpe major*. The last species, *Hyloterpe major*, is omitted from the "Distribution List," as it is considered to be the same as *H. winchelli*. To this list we have added 25 species found by us either in Romblon or Sibuyan or in both islands, and 3 more from Cresta de Gallo, making the total number of species known from the province 116. In addition to the interesting new species discovered by Worcester, 2 in our collection seem to be peculiar to Romblon Province and are here described as new. One of these, the *Loriculus*, has long been under suspicion, and the other, a screech owl, is of a genus now first recorded from this province.

The physical features of the islands require few remarks here, having been described by Worcester,² who also points out the peculiar character of their avian fauna. Romblon is a small, nearly circular island whose shores rise abruptly from the water and whose whole surface is broken, making travel difficult. A large part of the old forest, even to the highest points, has been cleared off to make way for cocoanut groves. The few small patches of woods remaining cling to steep hillsides and afford little or no

¹ In the "Preliminary Notes" the authors give only 66 species for Tablas and 44 for Romblon. This difference is probably due to a more complete identification of their material when their "Distribution List" was prepared.

² The Philippine Islands and Their People, 1901, pp. 465, 466; also Proc. U. S. N. M., XX, p. 584. I suspect that the tree in Sibuyan, supposed to be a conifer, is *Casuarina equisetifolia*, a peculiar species somewhat resembling, in the distance, a pine. It is quite abundant along the Rio Grande in Sibuyan, and a considerable number of trees of the same kind were found in Calayan, Babuyan group, specimens of which were identified for me by Miss Alice Eastwood, of the California Academy of Sciences.

protection to forest-loving birds. It is not strange, therefore, that but few species are known from this island.

The area of Sibuyan is four to five times that of Romblon. The island measures roughly 20 miles in length by 10 in greatest breadth. A large part of the island is well wooded, and the central part reaches a considerable elevation. The highest mountain, Giting Giting, is said to have an altitude of 6,500 feet. Considerable areas have been cleared for cocoanuts, but the forests of the interior have not been disturbed. The weather during our stay in Sibuyan was such as to make it useless to attempt a trip into the interior, although my men spent three days on the mountain and secured beautiful specimens of *Zonophaps* and *Ptilopus*. On account of poor health, my own work was limited for the most part to the house and I was obliged finally to return to Manila long before the work was completed. In spite of the many interesting species collected, this expedition was a disappointment to me, as I had hoped to work high up on Giting Giting, the mountain in Sibuyan, and to visit the small islands to the north of Romblon, which will, without doubt, prove to be good ground. Our work has been directed, as heretofore, by the Hon. Dean C. Worcester, Secretary of the Interior.

NOTES ON THE SPECIES OBSERVED.

MEGAPODIUS CUMINGI Dillwyn.

The "tabón" has been recorded from the three largest islands of Romblon Province, Romblon, Tablas, and Sibuyan, and appears to be rare. We observed it on Cresta de Gallo only, off the coast of Sibuyan, where it is said to be abundant. Plate I is reproduced from a photograph taken by Secretary Worcester on Tanobon Island, Calamianes group, and shows an unusually high mound of the "tabón." In their efforts to gather the eggs the natives usually reduce the mounds to a level as fast as the birds build them up. Plate I *bis* is another view of the same mound and shows the entrance to a burrow.

The mound figured herewith was measured by Secretary Worcester; its base was 21 by 23 feet in diameter, and its greatest height was 6 feet. Mr. H. D. McCaskey, Chief of the Philippine Mining Bureau, supplies the following note on Tanobon Island: "Tanobon [is], according to my notes and map, a worn-down

remnant of a hilly island, now surrounded by coral reefs, about 4 miles NE. of Point Caláuit on Busuanga Island."

EXCALFACTORIA LINEATA (Scop.).

Three adults and two very small young were taken on Sibuyan early in July. The species is not previously recorded from Romblon Province. The young may be described as follows: Upper parts, including wings and coverts, blackish brown; top of head marked by three buffy lines, extending from forehead to nape, and separated by wide blackish brown bands; wing coverts and feathers of back with edges and shafts buff; chin and throat pale buffy yellow; sides and flanks black with wide shaft markings of white; upper breast blackish, fading into dirty buff on belly. Bill dirty white; legs and nails dusky brown. Museum numbers 4545 and 4546; Sibuyan, July 2, 1904.

GALLUS GALLUS (Linn.).

Observed by us in Sibuyan only, where a fine male was killed.

OSMOTRERON AXILLARIS (G. R. Gray).

Two males in full plumage from Romblon.

PHABOTRERON NIGRORUM Sharpe.

Specimens were secured in Sibuyan where the species seems to be rare.

LEUCOTRERON OCCIPITALIS Bp.

Six adults and two birds of the year from Sibuyan constitute the first record of this species for Romblon Province. Salvadori says: "Garrod mentions 16 tail feathers in the present species, while I have found only 14."¹ None of our specimens has more than 14 tail feathers.

LEUCOTRERON LECLANCHERI (Bp.).

Bourns and Worcester² record this species from Tablas and we now have specimens from Romblon and Sibuyan.

CARPOPHAGA AENEAE (Linn.).

One specimen killed in Sibuyan, where the species is uncommon.

ZONOPHAPS POLIOCEPHALA (Hartl.).

Three specimens of this fine pigeon were killed in thick woods in the interior of Sibuyan, and another was taken in small growth

¹ Cat. Bds., XXI, p. 72.

² Minn. Acad. Nat. Sci., Oc. Papers, I, No. 1, p. 29.

near the beach. The species is described as having "upper parts, with wings, neck, and breast golden green."¹ In our specimens this is true only when the bird is held toward the light. If the bird is held away from the light, the upper parts are beautiful deep vinous and the wings and breast metallic copper color. The length is given as about 13.5 inches; our specimens measured in the flesh from 16 to 17 inches.

A nearly adult female differs from the adult male in having the copper color of the back extending onto the middle tail-feathers. Color of soft parts in this specimen were: Irides light clay brown; bill very dark brown with a small white mark on tip; bare skin around eye, dark flesh; legs pale crimson; nails blackish brown. The species is now recorded from Romblon Province for the first time.

PTILOCOLPA CAROLA Bp.

It appears to me that Grant and Whitehead were correct in considering *P. griseipectus* the male and *P. carola* the female of the same species.² The two forms are found in company, as stated by Mr. Whitehead, and I think there can be little doubt that they are male and female of one species. It has not been previously recorded from Romblon Province. We have males and females from Benguet, Luzon, and from Sibuyan. The species occurs in the vicinity of Manila also and is occasionally brought into the market here alive.

MYRISTICIVORA BICOLOR (Scop.).

One specimen of the "camasu" was taken on Cresta de Gallo. The natives say that it occurs in Sibuyan, which is quite probable, but we did not see it there nor is there any previous record of the species for Romblon Province.

COLUMBA GRISEIGULARIS (Wald. and Lay.).

This beautiful pigeon, which is widely distributed in the Philippines, is now recorded for the first time from Romblon and Sibuyan, where we took several perfect specimens.

MACROPYGIA TENUIROSTRIS Bp.

Not uncommon in Romblon and specimens taken in Sibuyan; new to Romblon Province.

¹ Cat. Bds., XXI, p. 209.

² Cf. Grant, Id., Jan., 1895, p. 117; also Whitehead, Id., Oct., 1899, p. 489.

STREPTOPELIA DUSSUMIERI (Temm.).

Taken in Romblon and Sibuyan.

CHALCOPHAPS INDICA (Linn.).

Romblon and Sibuyan.

HYPOTAENIDIA TORQUATA (Linn.).

Bourns and Worcester record this common rail from Romblon, where we also took a specimen. We observed the species in Sibuyan.

POLIOPTILUS CINERIUS (Vieill.).

One specimen from Sibuyan, where previously it was not known.

GALLICREX CINEREA (Lath.).

A female from Sibuyan, where the species is not uncommon, constitutes a new record for the province.

STERNA BERGII Licht.

Recorded by Bourns and Worcester from Romblon. I saw large terns in the harbor which were probably of this species.

STERNA MELANAUCHEN Temm.

One specimen of this beautiful rose-breasted tern, taken by us on Cresta de Gallo, appears to be the first capture of the species in the Philippines as restricted,¹ although it is known from Paragua.

ÆGIALITIS DUBIA (Scop.).

One specimen from Sibuyan where the species was not previously known.

ÆGIALITIS PERONI (Bp.).

Three specimens from Romblon and one from Sibuyan. The species was scarce on both islands and previously had not been known from the province.

ROSTRATULA CAPENSIS (Linn.).

The taking of one specimen of the painted snipe in Sibuyan constitutes a new record for Romblon Province.

GARZETTA GARZETTA (Linn.).

One specimen from Romblon is the first recorded for the province.

DEMIGRETTA SACRA (Gm.).

One specimen of the reef heron from Romblon. It was also observed along the beach in Sibuyan.

¹ Cf. Worcester, Proc. U. S. N. M., XX, p. 598.

BUTORIDES JAVANICA (Horsf.).

This common species was noted in Sibuyan and a specimen was killed in Romblon. www.libtool.com.cn

PYRRHERODIAS MANILLENSIS (Meyen).

One specimen from Romblon.

ARDETTA CINNAMOMEA (Gm.).

One specimen taken in Sibuyan.

DENDROCYGNA ARCUATA (Horsf.).

A few tree ducks were to be found along the river in Sibuyan, where three specimens were killed. This is the only duck so far known from Romblon Province; another species of duck, probably *Anas luzonica*, was said to visit Sibuyan, but it was not observed by us.

SPILORNIS PANAYENSIS Steere.

The serpent eagle was taken in both Romblon and Sibuyan. These specimens and two from Masbate are easily distinguished from a specimen of *S. holospilus* from Tarlac Province, Luzon, which is larger, darker below, and has fewer white spots on the breast. The throat of the Luzon bird is brown, while in *S. panayensis* this region is gray.

HALIAETUS LEUCOGASTER (Gm.).

Romblon and Sibuyan.

HALIASTUR INTERMEDIUS Gurney.

Observed in Sibuyan.

PERNIS PTILORHYNCHUS (Temm.).

One specimen from Sibuyan.

ELANUS HYPOLEUCUS Gould.

A live kite, brought to our house in Sibuyan, is the only specimen of this species known from Romblon Province.

FALCO PEREGRINUS Tunst.

One specimen of the duck hawk from Sibuyan.

NINOX SPILONOTUS Bourns and Worcester.

In color pattern this is remarkably similar to *N. mindorensis* but is considerably darker and more rusty on the lower parts. In our specimen, a male from Sibuyan, the white patches on scapulars, conspicuous in other species of *Ninox*, are reduced to bars of pale

fulvous. In the original description, however, it is stated that some of the scapulars are "with large, nearly white spots on outer webs."¹ As pointed out by Grant² the species is at once distinguished from *mindorensis* by its much greater size. In our specimen, a male, the wing measures 8.25 inches and the tail 4.40, while in *mindorensis* of the same sex these parts are 6.30 and 3.50 inches, respectively, as already recorded in my last paper.

If we compare the two species mentioned above with a typical hawk owl, *Ninox japonica*, we are struck by the great difference in color and color pattern. In the former nearly the whole plumage is finely barred, the only longitudinal markings being those on chin and throat. In *japonica* the entire under parts are marked with broad stripes and the upper parts are nearly uniform except for the large white patches on scapulars and inner tertiaries. The banding on the tail is also strikingly different in the two groups.

OTUS ROMBLONIS, new species.

Specific characters.—Similar to *Otus cuyensis* McGregor but smaller; wings and tail much shorter.

Type.—Adult female, No. 4386, Philippine Museum; Romblon Island, Philippines; June 2, 1904; McGregor et alia.

Description.—Feathers of upper parts rufous with median black stripes on head, neck, and back, heaviest on head; "horns" colored like neck and inconspicuous; white spots on scapulars washed with pale fulvous; lower parts and wings patterned as in *O. cuyensis* but more rufescent; black band on side of head narrower and less marked than in *cuyensis*. Total length in flesh, 8.75 inches; wing, 6.23; tail, 3; tarsus, 1.15; middle toe with claw, 1.10.

Like others of its genus the Romblon owl may be heard often enough but is difficult to locate in the dense foliage it frequents. The type, the only specimen seen by us, was killed in a cocoanut grove near the town of Romblon.

So far as I am aware no species of *Otus* has been reported from the central Philippines (Negros, Guimaras, Masbate, Panay, Ticao), where one might reasonably expect to find the nearest relative of the Romblon screech owl. In Mindoro *Otus mindorensis* (Whitehead) occurs, but this is another style of owl, related to *O. longi-*

¹Minn. Acad. Nat. Sci., Oc. Papers, I, No. 1, p. 8.

²Ibis, Oct., 1896, p. 227.

cornis of Luzon, and according to Grant has a wing measurement of 5.3 inches. There is no known resemblance between the faunæ of Romblon Province and Mindoro that would lead one to expect the same species of *Otus* in the two districts. In my last paper an unfortunate error occurs in the tail measurement of the female type of *O. cuyensis* which should be 3.47, not 3.27, inches.

EURYSTOMUS ORIENTALIS (Linn.).

Sibuyan.

PELARGOPSIS GIGANTEA Walden.

In an immature bird of June 27 from Sibuyan the ochraceous parts are noticeably deeper in color than in the adult, and each feather of the lower throat and upper breast is narrowly margined with black, forming numerous crescentic marks on these parts; dusky edges are present on feathers of hind neck also. The bill in this specimen measures from base only 2.70 inches, while in an adult female, taken at about the same time, the bill is 3.30 inches. In color the bill is duller than in the adult and is washed with dark brown. The legs are pale salmon mottled with brown.

CEYX CYANOPECTUS (Lafres.).

A single specimen from Sibuyan.

CEYX BOURNSI Steere.

One specimen from Sibuyan.

HALCYON WINCHELLI Sharpe.

Two specimens from Sibuyan.

HALCYON CHLORIS (Bodd.).

Romblon and Sibuyan.

MEROPS BICOLOR Bodd.

Four specimens from Sibuyan, where this species was not before known; the species was seen on Cresta de Gallo.

MEROPS PHILIPPINUS Linn.

Two specimens from Sibuyan. Not previously recorded from Romblon Province.

CAPRIMULGUS MANILLENSIS Walden.

Fairly common along the beach on Romblon, where three specimens were taken by us.

CAPRIMULGUS GRISEATUS Walden.

Abundant along the beach on Sibuyan, where specimens were frequently killed in broad daylight, being flushed from the shelter of low vegetation. The nesting period appeared to have been finished, as we took several full-grown birds in young plumage. The adults were in many cases unfit for skins, having lost either several primaries or the entire tail.

A pair of full-grown young birds differ from the adult in the following particulars: Underparts about the same shade of gray as in the adult but more finely mottled and with no spots of fulvous on the breast. The white spots on throat are just indicated, by white in the male and pale fulvous in the female. Upper parts blackish brown, very finely vermiculated with white, and lacking the conspicuous black blotches and fulvous edges of scapulars which are present in the adult plumage. The wings and tail are as in the adult. The young female differs from the young male in having the entire plumage washed with pale fulvous.

Types.—No. 4487, male, June 15, 1904, and No. 4521, female, June 28, 1904, Sibuyan.

Caprimulgus macrurus is credited to Sibuyan,² which if correct is no more curious than some other facts in the distribution of birds in Romblon Province. Mr. Worcester tells me that he remembers nothing about this record.

SALANGANA MARGINATA (Salvad.).

We have already recorded this little-known swift from the Islands of Luzon, Mindoro, and Calayan, and in the last-named island we collected immature birds. We are now prepared to present a few notes on its nesting habits as observed in Sibuyan. I was unable to visit the colony myself and so record the observations of my assistant, Mr. Andres Celestino, who collected the nests, eggs, and birds on June 11, 1904. He described the nests as being 6 feet from the ground and cemented to the face of a large rock which with two other bowlders formed an inclosure. There were forty

¹ All the specimens of *C. manillensis* which we have taken were killed at dusk, just before it became too dark to see, at which time they were hawking for insects. I never but once saw a specimen in the daytime, and that was flushed from thick brush in Ticao Island.

Since writing the above note I have flushed at midday a specimen of *manillensis* from a patch of thick brush near Manila.

² Bourns and Worcester, Preliminary Notes, p. 34.

to fifty nests in the colony, although many were unoccupied. The nests are composed of a blackish brown hair-like moss¹ cemented with the characteristic glutinous saliva. The saliva serves also to hold the nests to the rock. The nests of *Salangana whiteheadi* examined by us were supported by little ledges, not fastened to the rock nor to each other. Plate II shows how closely associated were the nests of *S. marginata*, one wall serving for two adjoining nests, so that in most cases it would be impossible to separate two nests without destroying one of them. The eggs resemble those of other species of the genus. Those figured on Plate III measure, respectively, 0.72 by 0.43 and 0.67 by 0.46 inch. Three odd eggs, too far advanced in incubation to be blown, had the following dimensions: 0.67 by 0.43, 0.70 by 0.45, 0.69 by 0.44 inch. Many of the nests held young of various sizes.

SALANGANA TROGLODYTES (Gray).

A few observed and one taken in Romblon. Another specimen was taken in Sibuyan, where the species is not common.

SALANGANA WHITEHEADI (Grant).

Very abundant in Sibuyan, where several specimens were taken.

EUDYNAMIS MINDANENSIS (Linn.).

Romblon and Sibuyan.

CENTROPUS VIRIDIS (Scop.).

An egg of this species was taken from the oviduct of a female killed in Sibuyan, June 10, 1904. It measures 1.20 by 0.86 inches, and has a smooth, dull white surface which may be easily scraped off. This chalky outer layer is not so thick, however, as it is on eggs of the American *Crotophaga*. *Centropus viridis* was seen in Romblon also.

PRIONITURUS DISCURUS (Vieill.).

A few specimens of this racket-tailed parrot taken in Sibuyan had the tail broken or but incompletely grown.

TANYGNATHUS LUZONENSIS (Linn.).

Specimens of the Luzon parrot from Romblon and Sibuyan are in worn plumage.

¹ Mr. Elmer D. Merrill tells me this is a scale moss of the family *Jungermanniaceæ*. In two nests only was any other material used, where leaves of *Casuarina* were mixed with the scale moss.

LORICULUS BOURNSI, new species.

Loriculus regulus BOURNS and WORCESTER, Oc. Papers, Minn. Acad. Nat. Sci., I, No. 1, p. 36. Worcester and Bourns, Distribution List, Proc. U. S. N. M., XX, p. 557 (part); Worcester, id., p. 583.

Type.—No. 4462, male, Philippine Museum; Sibuyan Island, Philippines, June 13, 1904; McGregor et alia. Wing, 3.82 inches; tail, 1.80; culmen, from front margin of cere, 0.54.

Specific characters.—Related to *L. regulus* but male distinguished by the smaller orange crown patch and weaker nuchal band. I am inclined to think that the red breast patch averages smaller in *bournsi*, but I do not care to offer this as a reliable character. The female is indistinguishable from the female of *regulus*.

No. 4358, male, from Romblon, has a peculiar feather in one wing which is worth noting. The outer web of fifth primary is lemon yellow for a distance of an inch and a quarter while the inner web is white for about the same distance.

In the last paper cited above Worcester says: "And I ought to state here that in the large series of *Loriculus regulus* obtained in Tablas, Romblon, and Sibuyan not a single male was found with as much orange on the head as is shown by Panay specimens in good plumage." This observation is confirmed by a comparison of seven males in the present collection from Romblon and Sibuyan with specimens of *Loriculus* from Ticao and Masbate. Unfortunately we have no birds from Panay, but Masbate birds were identified as *regulus* by Bourns and Worcester and are no doubt typical.

The species is named for Dr. Frank S. Bourns in recognition of his work on Philippine ornithology during two trips to these islands as a member of the Steere Expedition and of the Menage Expedition.

XANTHOLÆMA ROSEUM Dumont.

A single specimen from Romblon is the first recorded from that island.

IYNGIPICUS MENAGEI Bourns and Worcester.

Several specimens taken in Sibuyan.

CORONE PHILIPPINA Bp.

Romblon and Sibuyan.

SARCOPS CALVUS (Linn.).

Romblon and Sibuyan. A bird killed June 17 had a hard-shelled egg in the oviduct.

CALORNIS PANAYENSIS (Scop.).

Taken in Sibuyan.

ORIOLOUS CHINENSIS Linn.

Romblon and Sibuyan. A nest with one egg was found July 14, 1904.

MUNIA JAGORI Martens.

Abundant in Sibuyan and Romblon; several occupied nests were found in pandanus bushes on the latter island.

UROLONCHA EVERETTI (Tweed.).

Abundant in Sibuyan.

ALAUDA GULGULA Franklin.

The Chinese skylark is very abundant in the vicinity of Manila, where the natives net large numbers for the market, but it appears to be rare outside of Luzon, having been recorded from Bohol and Ticao only. In Sibuyan we took a single specimen. The species is probably more abundant than these records seem to indicate, as it is a bird generally overlooked, its habits being very similar to those of *Anthus rufulus*, for which it is easily mistaken.

ANTHUS RUFULUS Vieill.

Romblon and Sibuyan.

ÆTHOPYGA MAGNIFICA Sharpe.

Abundant in Sibuyan, where both adult and immature birds were taken. The immature male resembles the adult female but has the breast, throat, and chin mottled with red.

CINNYRIS SPERATA (Linn.).

Specimens from Romblon and Sibuyan are in the collection.

CINNYRIS JUGULARIS (Linn.).

Abundant on Romblon and Sibuyan. June 22, 1904, a nest with three eggs was taken in Sibuyan, where the species is known to the natives as "tiamis."

ANTHREPTES CHLORIGASTER Sharpe.

Abundant in Sibuyan, where both adults and birds of the year were taken during June and July. Adult males agree with Lubang skins in coloration but have decidedly longer bills. It is rather curious that this sunbird occurs in Romblon Province and Lubang

while no species of the genus has been found in Mindoro, which is situated directly between these two groups. Another curious fact is that *chorigaster* appears to be absent from Luzon, where it is replaced by *griseigularis*, a very distinct species.

DICÆUM SIBUYANICUM Bourns and Worcester.

The Sibuyan flower pecker is easily distinguished from the Romblon bird by the clear ashy gray of chin, throat, and upper breast, which in the latter species are washed with pale greenish yellow. It is stated that "fully adult birds always have the base of the lower mandible whitish, as do the young of most other species of the genus."¹ In the face of this statement it is rather surprising to find that not one of our nine adult males has any whitish color on the lower mandible, the whole bill being black. Several young males, birds of the year, were collected, and as this plumage is undescribed the following notes are offered:

Type of juvenile.—No. 4426, male, bird of the year, Sibuyan, June 10, 1904. Upper parts washed with olive green; wings and tail black; primaries (except the first), secondaries, and primary coverts narrowly edged with blue; tertiaries and median and lesser coverts edged with green; lower parts light olive green; chin, middle of breast, and abdomen light greenish yellow. Bill bright yellow except a light-brown tip; legs pale slate blue; nails blackish.

DICÆUM INTERMEDIUM Bourns and Worcester.

Two males were taken in Romblon.

DICÆUM PYGMÆUM Kittlitz.

Taken in Romblon, where it was not previously known to occur.

PIPRISOMA ÆRUGINOSUM (Bourns and Worcester).

One specimen from Romblon. Three birds of the year, taken July 7, 1904, in Sibuyan, are somewhat similar to the adult, but the upper parts are darker and lack the greenish-olive wash of the adult. The stripes on lower parts are more indefinite, almost obsolete. The whole plumage is gray, rather than brown as in the adult. Colors of soft parts: Upper mandible, dark brown; lower mandible, dirty white; corners of mouth, light yellow; irides, light tan; legs and nails, dirty steel blue, almost black. No. 4568, male, is selected as the type of the juvenile plumage.

¹ Bourns and Worcester, Minn. Acad. Nat. Sci., Oc. Papers, I, No. 1, p. 18.

ZOSTEROPS NIGRORUM Tweed.

The discovery of the Negros silver eye on the little Island of Cresta de Gallo was the most surprising find of our trip. The species is found in Masbate to the eastward and in Negros to the southward of Cresta de Gallo, but has not been taken in Sibuyan and almost certainly does not exist there, although the two last-named islands have but 8 miles of water between them. Our specimens differ from the Masbate and Ticao bird in having slightly longer bills; no other difference is observable.

HYLOTERPE WINCHELLI Bourns and Worcester, Proc. U. S. N. M., XX, p. 56.

Hyloterpe major BOURNS and WORCESTER, Minn. Acad. Nat. Sc., Oc. Papers, I, No. 1, p. 22 (Cebu, Tablas, Sibuyan).

In their "Preliminary Notes" Bourns and Worcester described the thickhead of Cebu, Tablas, and Sibuyan and named it *H. major*. Later, in their "Distribution List," the same authors have birds from the above islands listed under *H. winchelli*, which, judging from Masbate and Sibuyan birds, seems to be correct. We secured seven specimens in Sibuyan, where the species is somewhat scarce.

ARTAMUS LEUCOGASTER (Wagler).

Abundant in Romblon and Sibuyan.

LOCUSTELLA OCHOTENSIS (Middend.).

One specimen of the Middendorf grasshopper warbler, secured in Romblon, is a new record for the province.

MEGALURUS RUFICEPS Tweed.

Specimens from Romblon and Sibuyan; abundant in the latter island.

CISTICOLA EXILIS (Vig. and Horsf.).

One specimen taken in Romblon, where it appears to be somewhat rare and confined to the highest hills. A nest of this species containing three incubated eggs was found in Sibuyan July 5; as shown in Plate IV it is supported by a number of grass stems which stand 12 or 14 inches above the domed roof and at the same time serve to conceal the nest. The nest is composed of dry grass blades not very closely interwoven and is lined with spider silk, except at the bottom, which is provided with a thick mat of fine

white vegetable down. The outside measurements are $4\frac{1}{2}$ by $2\frac{1}{2}$ inches. The upright position and the domed entrance are well shown in the plate. The three eggs measure in inches: 0.55 by 0.42; 0.56 by 0.42; 0.57 by 0.44. In color they are light blue, marked with spots and dots of reddish brown, most of which are about the larger end. This nest was collected by Celestino, and I think there can be no reasonable doubt as to its being that of *Cisticola*. Another nest holding three young birds and found on July 2 was in every way similar to the one described. The young which were almost ready to leave the nest are very similar to the adult. The feathers of upper parts are umber brown broadly edged with dark ocreous brown, forming stripes on top of head; lower parts white washed with pale yellow on chin, throat, breast, and cheeks; flanks washed with light brown.

COPSYCHUS MINDANENSIS (Gm.).

Romblon and Sibuyan.

IOLE CINEREICEPS Bourns and Worcester.

Several specimens of this large and very distinct fruit thrush are in the collection from Romblon, where it was found only in the woods. A young bird which was evidently out of the nest but a short time has interesting undescribed plumage.

Juvenile.—Female, Romblon Island, May 29, 1904. Upper parts dark gray washed with dark rusty brown; wings blackish brown edged with rusty brown; the tail, which is dark brown, does not reach to tip of primaries; lower parts white; sides of head, a band across breast, and sides of body gray. Bill pale brown; legs and nails light steel blue.

The Romblon *Iole* is of a size with *Hypsipetes fugensis*. In the former species, however, the bill is considerably longer and the tail is much shorter. The tarsal envelopes are variable in our specimens of *Iole cinereiceps*, some being entire and others showing indications of scutes, but in none is the tarsus so strongly scutellated as in *Hypsipetes fugensis*. In the matter of rectal bristles I wish to recant my previous statement in which I was misled by a comparison of large species of *Hypsipetes* with small species of *Iole*.¹

PYCNONOTUS GOIAVIER (Scop.).

June 1 a pair of this species was taken on Romblon, where it was not previously known. A large egg was found in the female.

¹ Cf. Bull. Phil. Mus., No. 4, p. 32.

LALAGE NIGER (Forster).

Fairly abundant in Romblon and in Sibuyan. Dr. Richmond writes that *Turdus wterat* Boddaert, 1783, is the same species as *Turdus niger* Forster, 1781, and that Müller's name, *Turdus dominicus*, is also preoccupied. Therefore our species commonly known as *Lalage terat* will have to stand as above.

HYPOTHYMIS OCCIPITALIS Vig.

Romblon and Sibuyan. A specimen from the latter locality has a wide white bar across the primaries and secondaries of each wing.

RHIPIDURA NIGRITORQUIS Vig.

Romblon and Sibuyan.

ZEOCEPHUS RUFUS (G. R. Gray).

Romblon and Sibuyan.

CYORNIS PHILIPPINENSIS Sharpe.

Romblon and Sibuyan.

HIRUNDO JAVANICA Sparrm.

This species is now recorded for the first time from Romblon and Sibuyan. Specimens were taken on each island and a nest with young was seen in the church at San Fernando, Sibuyan, July 20.

PITTA ERYTHROGASTER Temm.

Romblon and Sibuyan.

PITTA ATRICAPILLA Less.

Specimens taken in Romblon and in Sibuyan; both localities are new for the species.

**LIST OF SPECIES FROM ROMBLON PROVINCE MENTIONED
IN THE PRECEDING LIST, BY LOCALITIES.**

ROMBLON.

Osmotreron axillaris.
Leucotreron leclancheri.
Columba griseigularis.
Macropygia tenuirostris.
Streptopelia dussumieri.
Chalcophaps indica.
Hypotaenidia torquata.
Sterna bergii.
Ægialitis peroni.
Garzetta garzetta.

Demiegretta sacra.
Butorides javanica.
Spilornis panayensis.
Haliaëtus leucogaster.
Otus romblonis.
Halcyon chloris.
Caprimulgus manillensis.
Salangana troglodytes.
Eudynamis mindanensis.
Centropus viridis.

List of species from Romblon Province, etc.—Continued.

ROMBLON—continued.

<i>Tanygnathus luzonensis.</i>	<i>Locustella ochotensis.</i>
<i>Loriculus bournsi.</i>	<i>Megalurus ruficeps.</i>
<i>Xantholæma roseum.</i>	<i>Cisticola exilis.</i>
<i>Corone philippina.</i>	<i>Copsychus mindanensis.</i>
<i>Sarcops calvus.</i>	<i>Iole cinereiceps.</i>
<i>Oriolus chinensis.</i>	<i>Pycnonotus goiavier.</i>
<i>Munia jagori.</i>	<i>Lalage niger.</i>
<i>Anthus rufulus.</i>	<i>Hypothymis occipitalis.</i>
<i>Cinnyris sperata.</i>	<i>Rhipidura nigritorquis.</i>
<i>Cinnyris jugularis.</i>	<i>Zeocephus rufus.</i>
<i>Dicæum intermedium.</i>	<i>Cyornis philippinensis.</i>
<i>Dicæum pygmæum.</i>	<i>Hirundo javanica.</i>
<i>Piprisoma æruginosum.</i>	<i>Pitta erythrogaster.</i>
<i>Artamus leucogaster.</i>	<i>Pitta atricapilla.</i>

SIBUYAN.

<i>Excalfactoria lineata.</i>	<i>Ninox spilonota.</i>
<i>Gallus gallus.</i>	<i>Eurystomus orientalis.</i>
<i>Phabotreron nigrorum.</i>	<i>Pelargopsis gigantea.</i>
<i>Leucotreron leclancheri.</i>	<i>Ceyx cyanopectus.</i>
<i>Leucotreron occipitalis.</i>	<i>Ceyx bournsi.</i>
<i>Carpophaga ænea.</i>	<i>Halcyon winchelli.</i>
<i>Ptilocolpa carola.</i>	<i>Halcyon chloris.</i>
<i>Zonophaps poliocephala.</i>	<i>Merops bicolor.</i>
<i>Columba griseigularis.</i>	<i>Merops philippinus.</i>
<i>Macropygia tenuirostris.</i>	<i>Caprimulgus griseatus.</i>
<i>Streptopelia dussumieri.</i>	<i>Salangana whiteheadi.</i>
<i>Chalcophaps indica.</i>	<i>Salangana marginata.</i>
<i>Poliolimnas cinerius.</i>	<i>Salangana troglodytes.</i>
<i>Hypotaenidia torquata.</i>	<i>Eudynamis mindanensis.</i>
<i>Gallicrex cinerea.</i>	<i>Centropus viridis.</i>
<i>Ægialitis peroni.</i>	<i>Prioniturus discurus.</i>
<i>Ægialitis dubia.</i>	<i>Tanygnathus luzonensis.</i>
<i>Rostratula capensis.</i>	<i>Loriculus bournsi.</i>
<i>Demiegretta sacra.</i>	<i>Iyngipicus menagei.</i>
<i>Butorides javanica.</i>	<i>Corone philippina.</i>
<i>Pyrrherodias manillensis.</i>	<i>Sarcops calvus.</i>
<i>Ardetta cinnamomea.</i>	<i>Calornis panayensis.</i>
<i>Dendrocygna arcuata.</i>	<i>Oriolus chinensis.</i>
<i>Spilornis panayensis.</i>	<i>Munia jagori.</i>
<i>Haliaëtus leucogaster.</i>	<i>Uroloncha everetti.</i>
<i>Haliastur intermedius.</i>	<i>Alauda gulgula.</i>
<i>Pernis ptilorhynchus.</i>	<i>Anthus rufulus.</i>
<i>Falco peregrinus.</i>	<i>Æthopyga magnifica.</i>

List of species from Romblon Province, etc.—Continued.

SIBUYAN—continued.

<i>Cinnyris sperata</i> .	<i>Lalage niger</i> .
<i>Cinnyris jugularis</i> .	<i>Hypothymis occipitalis</i> .
<i>Anthreptes chlorigaster</i> .	<i>Rhipidura nigritorquis</i> .
<i>Dicaeum sibuyanicum</i> .	<i>Zeocephus rufus</i> .
<i>Hyloterpe winchelli</i> .	<i>Cyornis philippinensis</i> .
<i>Artamus leucogaster</i> .	<i>Hirundo javanica</i> .
<i>Megalurus ruficeps</i> .	<i>Pitta erythrogaster</i> .
<i>Cisticola exilis</i> .	<i>Pitta atricapilla</i> .
<i>Copsychus mindanensis</i> .	

CRESTA DE GALLO.

<i>Megapodius cumingi</i> .	<i>Halcyon chloris</i> .
<i>Myristicivora bicolor</i> .	<i>Corone philippina</i> .
<i>Sterna melanauchen</i> .	<i>Oriolus chinensis</i> .
<i>Demiegretta sacra</i> .	<i>Zosterops nigrorum</i> .
<i>Haliaëtus leucogaster</i> .	<i>Lalage niger</i> .
<i>Merops bicolor</i> .	

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II. FURTHER NOTES ON BIRDS FROM TICAQ, CUYO, CULION, CALAYAN, LUBANG, AND LUZON.

By RICHARD C. MCGREGOR.

In this paper I propose to offer notes on a few specimens whose proper identification has been delayed through lack either of necessary literature or of typical specimens, and to describe such of the rarer nests and eggs as are now in our collections.

PORZANA PLUMBEA Gray.

Porzana tabuensis SHARPE, Cat. Bds., XXIII, p. 111 (pt.).

Porzana plumbea SHARPE, Hand-List, I, p. 102.

The only Philippine record of this rail rests upon a juvenile bird taken in Luzon by Maitland-Heriot and contained in the Tweeddale collection, whence it passed to the British Museum. It gives me pleasure to record the species as of not uncommon occurrence in the vicinity of Manila. Our specimens were purchased in Quinta Market, Manila, where they were brought by natives from towns along the bay shore. The natives of Parañaque are especially active in snaring small birds, for which they find a ready sale in Manila. Our specimens of the plumbeous rail were purchased in August and September, 1902, and in September, 1904.

LIMICOLA PLATYRHYNCHA (Temm.).

A male and female of this species, identified by Dr Richmond, were collected in Cuyo in January, 1903. The other Philippine records are Palawan, Bohol, and Negros.

PENELOPIDES PANINI (Bodd.).

The Panay hornbill is abundant on Ticao Island, where we secured a good series of skins and discovered the eggs. As the nesting habits of this genus are but imperfectly known, the following notes may be of interest:

Nest No. 1: Our first nest was located May 3, 1902, in a tree near a small stream. At 10 feet from the ground the tree

measured $7\frac{3}{4}$ feet in circumference. The entrance to the nest, $39\frac{1}{2}$ feet from the ground, was an opening $4\frac{1}{4}$ inches high by $3\frac{3}{4}$ inches wide, but when discovered the width was reduced to a narrow slit by two cakes which prevented the female from absenting herself from duty. Small bits of wood are the principal constituent of these cakes, but mixed with the wood are legs and elytra of beetles, occasional feathers, and numerous small seeds. What the cementing substance is I can not say, but it certainly renders the materials fairly cohesive, as the cakes may be removed entire and subjected to rough handling without being broken. Plate VIII shows a portion of the tree (nest No. 2) with the cakes in place. As will be seen the cakes meet neither at top nor bottom and serve only to narrow the natural opening without reducing its height.¹ The distance from center of opening of this first nest to the bottom of the cavity was 18 inches. Two small young and an addled egg rested on a mass of fine chips mixed with a few seeds and small soft fruits; material that would ordinarily accumulate.

Nest No. 2: In the case of our second nest, examined May 9, we were more fortunate, as it contained three perfect eggs, varying somewhat as to incubation, but easily blown. This nest was situated considerably higher than the first, the entrance being 53 feet from the ground, where the tree was $4\frac{1}{2}$ feet in circumference. The opening measured 4 inches by 6, and as in the first nest was reduced to a slit by being plastered up on each side. The three eggs from this nest measure in inches: 1.91 by 1.28; 1.84 by 1.33; 1.80 by 1.30. In color they are dull white with no markings except a few nest stains; their surface is chalky with occasional minute lumps. They are figured on Plate IX.

Nest No. 3: On May 25 the cavity described as nest No. 1 was again occupied, the female being already plastered in. While we were waiting for our climber the male bird visited the tree and clung woodpecker-like at the lower side of the hole. In this position the slightly spread tail was apparently used as a prop and the

¹ Newton (Dic. of Bds., p. 437) says: "When the hen begins to sit the cock plasters up the entrance with mud or clay, leaving only a small window through which she receives the food he brings her during her voluntary imprisonment." On page 436 of the Dictionary is figured a nest of the Indian species *Dicroceros bicornis* in which the tip of the female's bill protrudes from a round opening. In these two points, the shape of the opening and the material used in the cakes, the nest of the Panay hornbill differs from that of the Indian species described by Newton.

head was moved about as if its owner had swallowed a fish bone. Several times this uneasy bird thrust his bill into the nest opening and I suspect that the female was being fed by regurgitation. The same performance, observed by my assistant on the day preceding, was accompanied by a low call. This time we opened the nest too soon, as no eggs had been deposited. During the nesting period the hornbill undergoes a more or less complete molt and females taken from the nesting cavities were in a sorry condition as to wings and tails. Probably they are at times unable to fly. I do not think that these birds drill out their nesting holes, although they may do something at enlarging a natural cavity. No doubt a choice cavity is used year after year, for it must be rather difficult for so large a bird to find a hole large enough for its use. In the same tree with the hornbill's nest shown on the plate were eggs of *Prioniturus*; these were in a cavity above the hornbill's hole.

CHÆTURA GIGANTEA (Temm.).

The giant swift is to be added to the list of Culion birds, the record being based on two female specimens collected in September, 1904, by Secretary Worcester and Major Carter.

TACHORNIS PALLIDIOR, new species.

Tachornis infumata MCGREGOR, Bull. Phil. Mus., No. 1, p. 6 (Ticao); id. No. 4, p. 21 (Luzon).

Specific characters.—Similar to *Tachornis infumata* (Sclater) but lighter in color on the underparts, especially on the throat; tail shorter.

Type.—No. 4140, adult male, Philippine Museum; Anao, Tarlac Province, Luzon; March 16, 1904; McGregor et alia.

Description of type.—Upper parts dark brown; nearly black on head, neck, and back, which have a faint green gloss; rump and upper tail-coverts lighter brown, the latter with dark shafts; wing feathers blackish brown, glossy on outer webs, dull brown on inner webs; short primaries narrowly edged with white on inner webs; tail of the same color as wings; sides of head brown; chin and throat light gray, merging gradually into the smoky brown of the lower breast and abdomen, where the feathers are narrowly edged with gray; stiff feathers in front of eye white with brown tips. Total length in flesh, 4.5 inches; wing (pressed flat on rule), 4.70; lateral rectrices, 1.97; central rectrices, 1.22.

Known habitat.—Ticao and Luzon, Philippines.

Dr. Richmond has examined three specimens of the new palm swift and I am glad to have his opinion before giving it a name. He says: "I have compared the specimens with two skins of *T. infumata* from Trong, Lower Siam, and find that they have shorter tails, and are generally lighter in color on the underparts, especially on the throat. This difference is not great, but it is very evident, and sufficient, I think, to warrant the separation of the Philippine bird."

Tachornis is easily recognized, when in the hand, by the deeply forked tail and the peculiar arrangement of the toes, which are in pairs, two on each side of the median tarsal line, while in *Salangana* the toes are disposed normally, three in front and one behind. Although these two genera are very distinct it is well-nigh impossible to distinguish their members on the wing, for their coloration and size are very similar. This does not refer to the smaller *Salangana*, the Philippine species of which possess distinctive white markings. It is no great wonder then that the presence of *Tachornis* in these Islands has been overlooked for a long time.

The species was not uncommon in the two localities recorded, but on account of its high flight specimens were taken with difficulty. When it was first seen in Tarlac Province I felt sure of its identity, but I can not say how it may be recognized on the wing. The flight is perhaps more deliberate than in the larger species of *Salangana* and a glimpse of the deeply forked tail is enough to settle the question.

Should the Philippine bird turn out to be the same as the Bornean form, it would have to be called *infumata*, since *Cypselus infumatus* of Selater comes from Borneo, and the Siamese bird would require another name.

SALANGANA LINCHI (Horsf. and Moore).

Linch's swifts were frequently seen feeding near Irisan, Benguet, but never in company with other species. Whitehead's swifts hawked in the open and frequently passed over our camp in small companies, while the Linch's swifts were almost invariably found darting in and out among the branches of pines. On one occasion I saw a bird collecting nesting material from a pine limb. For a long time we were puzzled as to where the smaller species nested, and when an Igorrote lad told us that it nested on the ground I

gave up hope of getting help from him. The same boy, however, led us to two nests which undoubtedly belonged to birds of this species. The first nest was well hidden among ferns on a gently sloping hillside and was on the ground. It is composed for the most part of dry moss; the uphill side is thin and has a few lichens mixed with moss; a few dry grass stems also enter into its composition, but the glutinous substance is almost entirely wanting. Depth, inside, 1 inch; outside, 2 inches; diameter, inside, $1\frac{3}{4}$ by 2; outside, 2 by 3. The two white eggs were slightly incubated and measure 0.88 by 0.55 and 0.85 by 0.55, respectively.

The second nest, situated about 200 yards from the first, was similarly placed beneath weeds and ferns. This nest is composed of the lichen *Usnea*. The outer rim is well-rounded and along the uphill side is a considerable patch of the characteristic glutinous material. The outside diameter is 3 inches; inside, $2\frac{1}{8}$; outside depth, 1.00; inside depth but little less, as the bottom is very thin. This nest held two well-fledged young. Both nests were collected May 19, 1903.

SALANGANA WHITEHEADI (Grant).

Whitehead's swift was fairly abundant in the vicinity of our Irian, Benguet camp, where a nesting colony of forty to fifty pairs was discovered in a waterworn cave. On May 21 a few fresh to heavily incubated eggs were found, but most of the nests held young, some of which were able to fly. The nest figured on Plate X contained two fresh eggs and is typical; its base is composed of dirty dead moss; the rim and inside are of moss, which was bright green when the nest was collected; the whole nest is compact and well glued together, but there are no masses of the glutinous material that are of commercial value. This nest is $2\frac{3}{4}$ inches in outside diameter and the inside depth is half an inch; the walls and bottom are about half an inch in thickness, so that the nest has somewhat the shape of a very thick individual butter dish. The pure white eggs were fresh and measure, respectively, 0.88 by 0.55 and 0.93 by 0.56. They are figured on Plate III.

STURNIA SINENSIS (Gm.); McGregor, Bull. Phil. Mus., No. 4, p. 24.

Our Calayan specimen of this species has been examined by Dr. Richmond, who sends me the following: "Oates says (Fauna Brit. India, Bds., I, p. 526, 1889), 'some time after the molt the

beautiful rose color fades to white, or is present in only a very slight degree.' One of our birds from Canton (May) is similar to yours; the rest have the rose color or rusty shade pronounced." This explains the difference between our Luzon bird taken March 13 and the Calayan bird taken September 15. Colors of soft parts in flesh: Irides white; bill pale stone gray; legs and nails bright brown. In *Sturnia violacea* the difference between spring and fall birds is similar to that noted in *S. sinensis*. Dr. Richmond writes me that the proper name for our common species is *Sturnia philippensis* (Forster), *Motacilla violacea* of Boddaert, 1783, being the same as *Motacilla philippensis* of Forster, 1781.

SPODIOPSAR SERICEUS (Gm.); McGregor, Bull. Phil. Mus., No. 4, p. 24.

My identification of our Calayan specimen has been confirmed by Dr. Richmond. Colors of soft parts in the flesh were: Irides dirty white; basal half of bill reddish yellow, tip dusky; legs bright yellow; nails yellowish brown. I notice a misprint under this species in Bulletin of the Philippine Museum No. 4, where the specific name used by Cassin is given *servicea* for *sericea*.

ÆTHOPYGA RUBRINOTA, new species.

Æthopyga flavipectus MCGREGOR, Bull. Phil. Mus., No. 3, p. 10.

Specific characters.—Closely allied to the Luzon species, *Æthopyga flavipectus* Grant, from which it is distinguished by the much paler breast.

Type.—No. 1598, adult male, Philippine Museum; Port Tilig, Lubang Island, Philippines; October 30, 1902; R. C. McGregor and A. Celestino.

Description of type.—Crown and edges of wing feathers including coverts green; mantle, sides of neck and face, dark red; chin, throat, breast, and rump lemon yellow; between moustachial line and throat a narrow line of dark red; abdomen and flanks white. Metallic colors, when held toward the light, position C:¹ Forehead, upper tail coverts, long middle tail feathers, and posterior half of moustachial line light green; anterior half of moustachial line, ear patch, and outer webs of short tail feathers light rich purple. In position B: Forehead and edges of short tail feathers dark purple; posterior half of moustachial line, tail coverts, and long

¹ Cf. Dictionary of Birds, p. 98.

tail feathers dark green; ear patch and anterior half of moustachial line deep blue. Measurements in inches: Length, $3\frac{7}{8}$; wing, 1.68; tail, 1.16; exposed culmen, 0.56.

Female.—No. 1552, Philippine Museum; Port Tilig, Lubang, Philippines; October 25, 1902; R. C. McGregor and A. Celestino.

The female may be described briefly as follows: Dull olive green above, grayish green on breast, throat, and sides of neck; abdomen and flanks white with a wash of pale yellow on middle of belly; rump pale lemon yellow. Measurements of the type in inches: Total length, $3\frac{1}{4}$; wing, 1.56; tail, 0.90; exposed culmen, 0.51.

In this species the yellow throat and breast are of the same shade as that found in *Eudrepanis jefferyi*, while in *Æthopyga flavipectus*, its nearest relative, the color is much deeper, as in *Æ. bonita*. Near the center of breast patch there are traces of the red lines such as are developed in other Philippine species of this genus—e. g., *shellei* and *bonita*. This varies in different individuals of *rubrinota* from a narrow line on a single barb to small patches extending over several barbs, but in no case are the red marking evident except upon close examination. This variation occurs in nine of the fifteen skins before me and is found in immature males as well as in those fully adult.

LOCUSTELLA LANCEOLATA (Temm.).

Our first specimens of this small grass warbler were taken in Benguet, Luzon, where one was killed well up in a small pine April 18 and another May 14, 1903. In October and November of the same year we found the species not uncommon in Calayan, where its habits were very different from those observed in Benguet. Near the town of Calayan were large meadowlike fields covered with short grass, clumps of low weeds, and stunted guava bushes. It was in the shelter of these weeds and bushes that *lanceolata* hid and skulked, taking to its weak wings only when hard pressed, and then ducking beneath the first cover. I never saw one of these birds take flight voluntarily and even when flushed they seldom flew more than 20 or 30 feet, just clearing the tops of intervening weeds. Dr. Richmond has identified our specimens.

LOCUSTELLA FASCIOLATA (Gray); McGregor, Bull. Phil. Mus., No. 4, p. 29.

Our Calayan specimen referred to this species has been examined by Dr. Richmond and he considers my determination correct.

HORORNIS MINUTA (Swinh.); McGregor, Bull. Phil. Mus., No. 4, p. 30.

Dr. Richmond has examined two of our Calayan specimens and confirms my identifications.

IOLE GUIMARASENSIS Steere.

Iole guimarasensis STEERE, List Bds. and Mamm. Steere Exp., p. 19 (Negros, Panay, Guimaras); Grant, Ibis. Oct., 1896, p. 546 (Negros).

Iole philippinensis BOURNS and WORCESTER, Minn Acad. Nat. Sci., Oc. Papers, I, No. 1, p. 60; McGregor, Bull. Phil. Mus., No. 1, p. 11 (Masbate and Ticao); id. No. 3, p. 12 (Verde).

Hypsipetes philippensis CLARKE, Ibis, Oct. 1895, p. 120 (Negros).

Some doubt has been raised as to the validity of Dr. Steere's *Iole guimarasensis*, and after puzzling over a series from several islands I am not surprised that opinions differ on this point. Steere described the species from Negros, Guimaras, and Panay and it is quite probable that the Masbate *Iole* is of the same variety, although no comparison of skins has been possible. Bourns and Worcester consider *guimarasensis* not entitled to separation, while Grant agrees with Steere and says: "The much larger bill of this bird and the paler color of the throat are differences easily appreciated."

To settle the first point I have prepared a table of measurements of specimens from several islands and give the results in condensed form showing under each head extremes and averages. It will be seen that while the extreme dimensions overlap, the averages for Masbate-Ticao specimens are nearly all greater and never less than the averages for birds from Mariveles, Luzon. The only color difference seems to be that of the throat, which in *philippensis* is bright tawny rufous, while in *guimarasensis* the color is pale rufous, becoming quite dingy in worn specimens. April specimens from Benguet, Luzon, and from Ticao are used in the color comparison. The color difference is quite constant and taken with the larger size of *guimarasensis* seems to entitle that species to recognition.

With the Verde Island birds I have been bothered not a little. They are in fresh plumage, having been taken in December and are therefore not strictly comparable with our specimens from Masbate and Ticao, which were taken in April, May, and June. The six specimens from Verde Island are certainly not *philippensis* but appear to be very closely related to the Masbate species, if not identical with it. The measurements of so few specimens are of

little value for comparison, but the pale coloration of the throat makes it necessary, for the present at least, to refer these Verde birds to *guimarasensis*. The Lubang bulbul has the throat very slightly darker than the Luzon bird.

Steere states that the Mindoro bulbul¹ has a longer bill than *Iole philippensis*, and Grant claims² that the reverse is true. Our series show but little difference in the length of bill of the two species. The longer tail of *mindorensis* is a point not mentioned by either of the above authors. It is unnecessary, however, to study measurements in this case as *mindorensis* can be recognized at a glance by its gray throat and breast.

Measurements of Philippine species of Iole.

Locality.	Sex.	Number of skins.	Wing.	Tail.	Exposed culmen.
Masbate and Ticao	Males	10	4.04-4.36 (4.20)	3.40-3.72 (3.55)	0.86-0.99 (0.92)
Do	Females	9	3.87-4.17 (3.91)	3.42-3.60 (3.48)	.81-.98 (.84)
Mariveles	Males	10	3.78-4.10 (3.94)	3.47-3.54 (3.55)	.80-.88 (.81)
Do	Females	10	3.60-3.89 (3.69)	3.19-3.51 (3.36)	.74-.88 (.77)
Lubang	Males	7	3.96-4.08 (4.01)	3.59-3.70 (3.63)	.80-.92 (.83)
Verde	do	4	3.94-4.03 (3.99)	3.60-3.80 (3.57)	.86-.90 (.89)
Do	Females	2	3.74-3.92 (3.88)	3.46-3.74 (3.60)	.81-.81 (.88)
Mindoro	Males	10	4.00-4.23 (4.13)	3.56-3.91 (3.76)	.83-.95 (.90)
Do	Females	4	3.87-3.91 (3.89)	3.58-3.75 (3.61)	.84-.86 (.85)

Locality.	Sex.	Number of skins.	Bill from nostril.	Tarsus.
Masbate and Ticao	Males	10	0.61-0.70 (0.67)	0.77-0.89 (0.82)
Do	Females	9	.58-.68 (.62)	.70-.86 (.79)
Mariveles	Males	10	.58-.62 (.61)	.73-.84 (.78)
Do	Females	10	.58-.65 (.58)	.76-.86 (.79)
Lubang	Males	7	.56-.64 (.59)	.71-.80 (.76)
Verde	do	4	.64-.68 (.67)	.70-.78 (.74)
Do	Females	2	.61-.65 (.63)	.66-.72 (.69)
Mindoro	Males	10	.61-.72 (.67)	.72-.82 (.78)
Do	Females	4	.61-.65 (.63)	.76-.80 (.78)

HIRUNDO STRIOLATA (Boie); McGregor, Bull. Phil. Mus., No. 4, p. 33 (Calayan).

Some of our Calayan specimens have been examined by Dr. Richmond and he agrees with me that they are not typical of *striolata*. He says: "I think it more likely that your birds are migrants from the north, rather than from the direction of Java, and thus nearer to *japonica* than *striolata*." Calayan was certainly favored with a number of migrants from the north; e. g.—*Polionetta*, *Spodiopsar*, *Chrysomitris*, *Saxicola*, and *Fringilla*, and

¹ List Bds. and Mamm. Steere Exp., p. 19.

² Ibis, Oct., 1896, p. 466.

the mosque swallows also may well have come from that direction. I have retained the name *striolata* for our Calayan birds as that name has been used for the Philippine mosque swallow and as our birds appear to be typical of neither *striolata* nor *japonica*. In dealing with this group of swallows it is well to note the remarks of Dr. R. B. Sharpe on "*Hirundo daurica* and its allies."¹ In part he says: "The breadth of the rump band or the amount of striation on the rump, seems to me to be equally as variable as the length of the wing and the coarseness or fineness of the shaft stripes on the under surface. Some stress has also been laid by Mr. Hume on the dusky ear coverts; and at one time I thought myself that this would prove a reliable point of difference between the races; but I find that in a large series the darker and coarser the breast stripes the darker the ear coverts, and just as every gradation in length of wing can be found, so every intermediate form between the narrowly striped examples, with finely streaked ear coverts, and the coarsely streaked specimens, with nearly uniform blackish ear coverts, can be met with in a series * * *. It also appears to me impossible to settle the question of some of these races until a larger series is at our disposal from various parts of China, and especially from the headquarters of these swallows in winter."

¹ Cat. Bds., X, pp. 158-159.

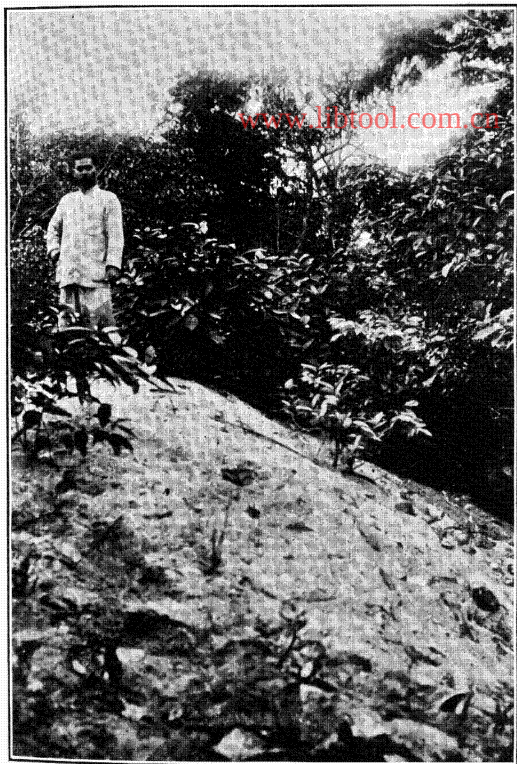


PLATE I. MOUND OF MEGAPODIUS CUMINGI.

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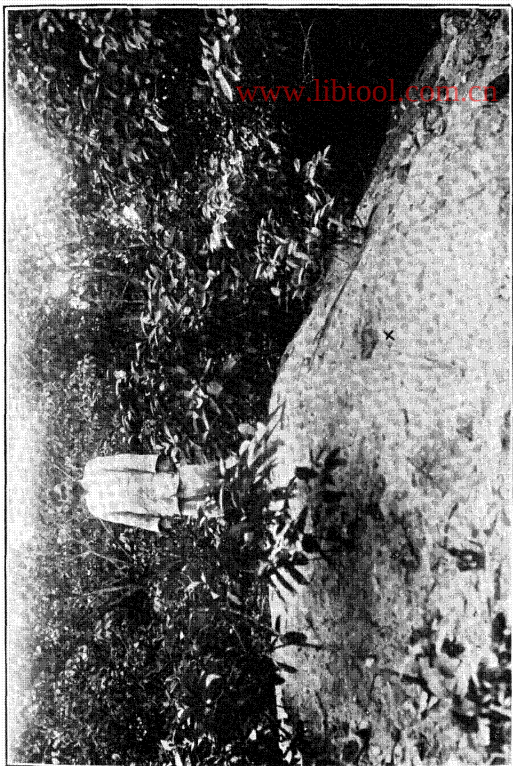


PLATE I BIS. NESTING MOUND OF MEGAPODIUS CUMINGI. THE CROSS (X) MARKS THE OPENING OF A BURROW.

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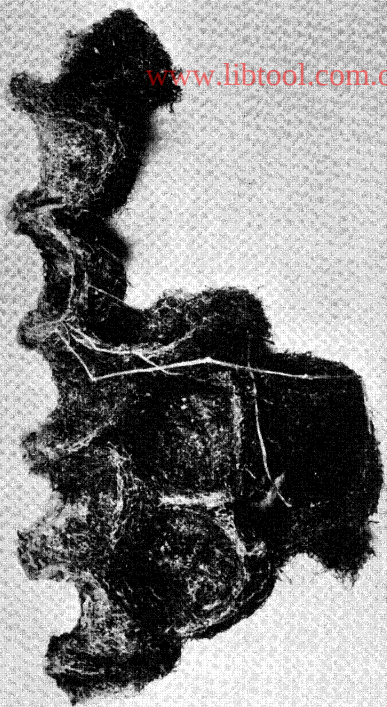


PLATE II. NESTS OF SALANGANA MARGINATA.

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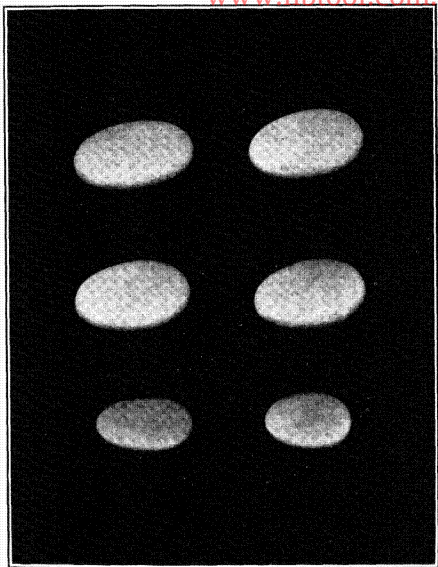


PLATE III. EGGS OF PHILIPPINE SWIFTS. TOP PAIR, SALANGANA WHITEHEADI; MIDDLE PAIR, S. LINCHI; BOTTOM PAIR, S. MARGINATA.

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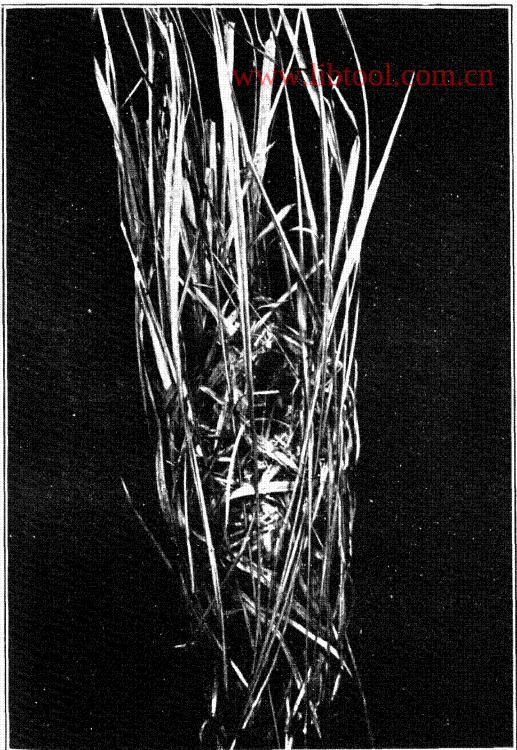


PLATE IV. NEST OF *CISTICOLA EXILIS*.

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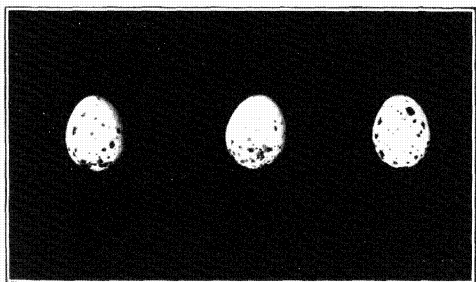
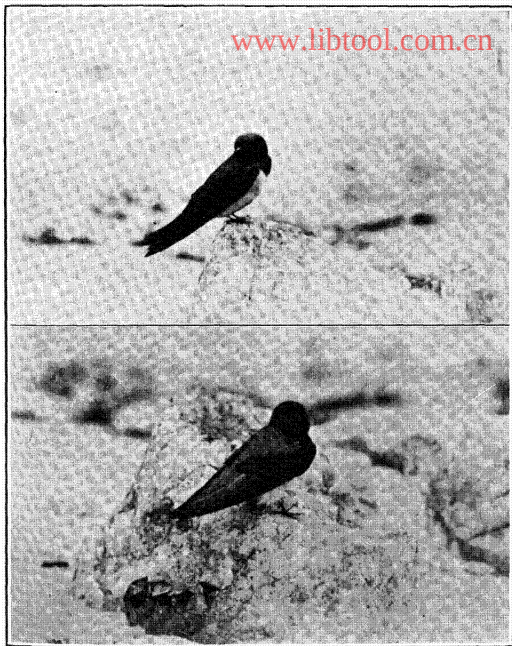


PLATE V. EGGS OF *CISTICOLA EXILIS*.

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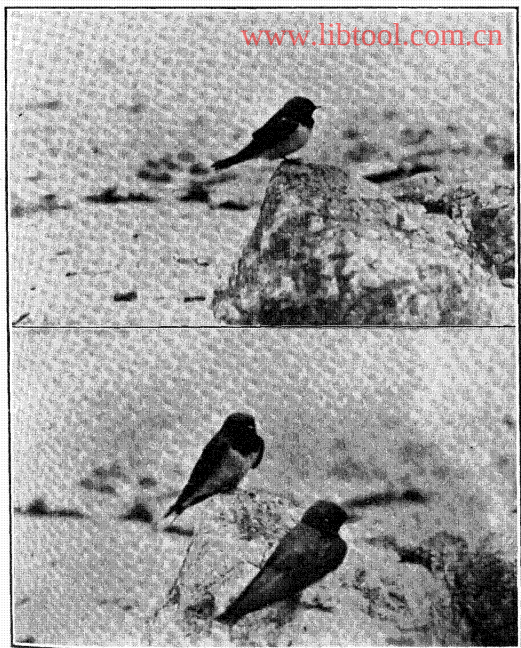


Photographed by Secretary Worcester.

PLATE VI. SWALLOWS.

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PLATE VII. SWALLOWS.

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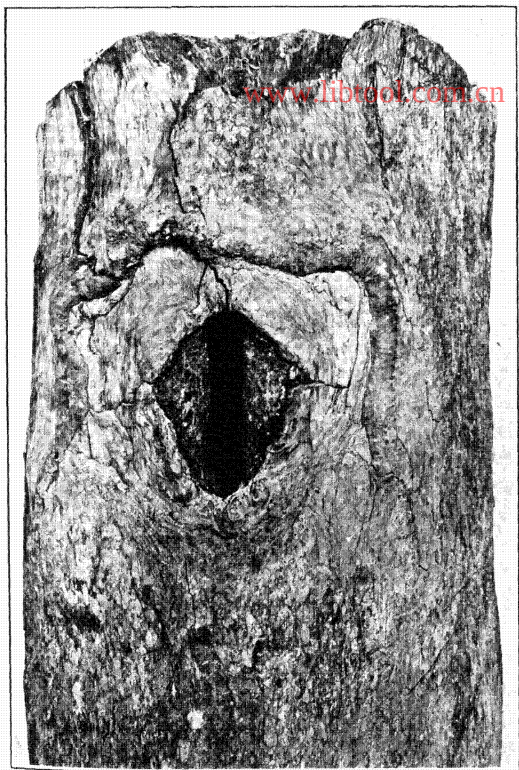


PLATE VIII. NEST OF PENELOPIDES PANINI.

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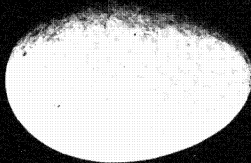
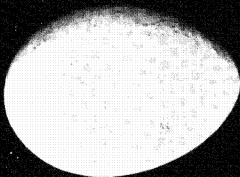


PLATE IX. EGGS OF *PENELOPIDES PANINI*.

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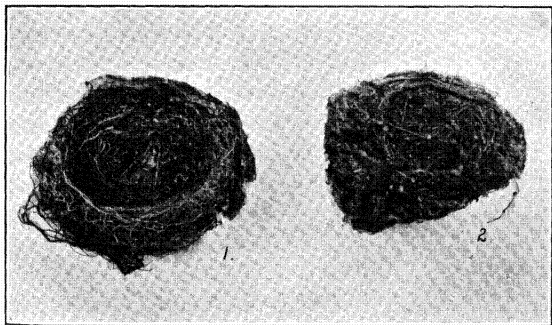


PLATE X. 1. NEST OF SALANGANA LINCHI. 2. NEST OF SALANGANA WHITEHEADI.

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