

THE BIRDS OF THE TAMBELAN ISLANDS, SOUTH CHINA SEA.

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The Tambelan Islands are in the southern part of the South China Sea, about 100 miles west of the westernmost point of Borneo and about 150 miles southeast of the Anamba Islands. They consist really of two groups, lying not far apart, and each extending some 13 or 14 miles southeastward and northwestward. With the Tambelan Islands proper we here include the Rocky Islets, or Pulo Mandariki, about 12 miles west-northwest of the northwestern end of the Tambelan group; and Pulo Kayu Ara, or Saddle Island, some 10 or 12 miles farther to the northwest. Both Saddle Island and Pulo Mandariki are faunally part of the Tambelan group.

The islands of the Tambelan group are numerous, but all relatively small. Many of them rise precipitously from the water, or have interior hills of considerable height. The larger islands are heavily forested, but some of the others are mere rocky heaps. Many have coral reefs about their bases.

Only one, Great Tambelan, is inhabited, and its population consists of 500 or 600 Malays. Wild mammals are not numerous on the islands, and consist chiefly of squirrels, rats, bats, and monkeys.

Great Tambelan Island, the largest and highest of all, is in the northeastern group, and is triangular, about $4\frac{1}{2}$ miles on each side. It has several high hills, the highest reaching an altitude of 1,300 feet. A creek, which enters in a northeasterly direction from the western side, nearly divides it into two parts, and forms an advantageous location for the Malay settlement. Many coconut trees grow on the island, and there are also plantations of sago and fruit trees.

Pulo Bunoa, the largest of the southwestern group, is about 4 miles in length from southeast to northwest, and about $2\frac{1}{2}$ miles wide. The highest of its several hills reaches a height of 915 feet. Like Great Tambelan Island, it is thickly forested and has only a few clearings, these along the shore. Pulo Wai is another of the larger islands and occupies the northwesternmost position in the Tambelan Islands proper. It is about 2 miles long and has several peaked hills, the highest of which rises 1,057 feet above the sea.

The Rocky Islets, or Pulo Mandariki, 12 miles west-northwest of Pulo Wai, comprise two small barren rocky islets, the larger of these rising to a height of 134 feet. Scarcely any vegetation finds a foothold on their inhospitable slopes, and few birds, excepting two species of terns, make their home there.

Saddle Island, well so-called from its sky line, formed by two hills connected by a lower ridge, is about half a mile long and a quarter of a mile in width. Its highest point is 387 feet above the sea. Like the larger Tambelan Islands, it is covered with forest, and is a much more inviting place for mammal and bird life than is Pulo Mandariki.

Dr. W. L. Abbott was apparently the first ornithologist to explore these islands. With Mr. C. Boden Kloss he spent some two weeks here, from August 3 to August 15, 1899. His itinerary is as follows:

Pulo Selindang.—August 3, 1899.

Pulo Gilla.—August 4, 1899.

Pulo Bunoa.—August 5-7, 1899.

Great Tambelan Island.—August 8-12, 1899.

Pulo Wai.—August 12-14, 1899.

Pulo Mandariki.—August 14, 1899.

Saddle Island.—August 15, 1899.

As one result he collected 53 birds, representing 12 species, which, as usual, he presented to the United States National Museum. These, together with Doctor Abbott's field notes on other birds not collected, and the data published by Mr. Kloss,¹ bring the number of avian species now known from these islands collectively up to 22. Following are separate lists of those found on the Tambelan Islands proper, Pulo Mandariki (the Rocky Islets), and Saddle Island.

TAMBELAN ISLANDS.

1. *Demigretta sacra sacra* (Gmelin).
2. *Pluvialis dominica fulva* (Gmelin).
3. *Totanus totanus eurhinus* Oberholser.
4. *Actitis hypoleuca* (Linnaeus).
5. *Orthorhamphus magnirostris scommophorus* Oberholser.²
6. *Caloenas nicobarica* (Linnaeus).
7. *Chalcophaps indica indica* (Linnaeus).
8. *Spilopelia tigrina* (Temminck).
9. *Myristicivora bicolor* (Scopoli).
10. *Muscadivores aeneus polius* Oberholser.
11. *Dendrophassa vernans adina* Oberholser.
12. *Anthracoceros convexus* (Temminck).
13. *Sauropatis chloris cyanescens* Oberholser.

¹ Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, pp. 60-68.

² New subspecies; see p. 133.

14. *Tachornis infumata* (Sclater).
15. *Hypurolepis javanica abbotti* Oberholser.
16. *Hypothymis azurea opisthocyanea* Oberholser.
17. *Gracula javana prasiocara* Oberholser.
18. *Lamprocorax panayensis heterochlorus* Oberholser.
19. *Motacilla boarula melanope* Pallas.

PULO MANDARIKI.

1. *Cuncuma leucogastris* (Gmelin).
2. *Sterna anaetheta anaetheta* Scopoli.
3. *Anous stolidus pileatus* (Scopoli).

SADDLE ISLAND.

1. *Cuncuma leucogastris* (Gmelin).
2. *Myristicivora bicolor* (Scopoli).
3. *Sauropatis chloris cyanescens* Oberholser.
4. *Lamprocorax panayensis heterochlorus* Oberholser.

Although the above lists do not, of course, comprise the whole avifauna of these islands, they nevertheless give some idea of its complexion. According to Doctor Abbott's observations, birds are relatively scarce and few in species. Those that he succeeded in finding here are, however, of interest, particularly from a distributional standpoint. Judging from the few species that afford any definite clue, the faunal relationships of the Tambelan Islands are with the Anamba Islands rather than with Borneo, although the latter is geographically somewhat nearer.

Only two papers contain any reference to the birds of the Tambelan Islands. These are:

KLOSS, C. BODEN.—Notes on a Cruise in the Southern China Sea. Journal of the Straits Branch of the Royal Asiatic Society, No. 41, January, 1904, pages 53–80.

OBERHOLSER, HARRY C.—A Monograph of the Flycatcher Genera *Hypothymis* and *Cyanonympha*. Proceedings of the United States National Museum, vol. 39, February 25, 1911, pages 585–615.

In the following list the birds prefixed with an asterisk are unrepresented by specimens in Doctor Abbott's collection.

Family ARDEIDAE.

DEMIGRETTA SACRA SACRA (Gmelin).¹

[*Ardea*] *sacra* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 640 (Tahiti Island, Society Islands).

Three specimens:

Adult male, No. 170877, U.S.N.M.; Pulo Wai, August 13, 1899. Length in flesh, 603 mm.

¹ *Demigretta* is the original spelling of the generic name.

Juvenal female, No. 170876, U.S.N.M.; Pulo Wai, August 12, 1899. Length in flesh, 584 mm. "Iris yellow; feet pale green. Stomach contained small fish."

Juvenal female, No. 170878, U.S.N.M.; Pulo Wai, August 13, 1899. Length in flesh, 578 mm. "Iris yellow; bill dark horny brown, paler beneath at base."

Whether or not these specimens belong really to the typical form of the species must be determined by a thorough study of all the races, for which we have not opportunity at the present time. There are apparently more subspecies than current authors recognize.

Doctor Abbott reports that it was common along the reefs in the Tambelan Islands at the time of his visit, particularly on Pulo Wai, where he saw several pairs; and on Great Tambelan Island, August 8-12, 1899.

Family BUTEONIDAE.

* CUNCUMA LEUCOGASTRIS (Gmelin).¹

[*Faico*] *Iucogaster* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 257 (no locality: type locality given by Mathews as New South Wales, Australia).

One seen by Doctor Abbott on Saddle Island, August 15, 1899; and a pair about Pulo Mandariki, on August 14, 1899. None of these was collected.

Family CHARADRIIDAE.

PLUVIALIS DOMINICA FULVA (Gmelin).

[*Charadrius*] *fulvus* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 687 (Tahiti Island, Society Islands).

One adult female in winter plumage, taken on Pulo Wai, August 13, 1899. Length in flesh, 254 mm. "Iris dark brown; feet slaty blue; bill black, becoming brownish at base. Shot out of a bunch of three on the reef. Only ones seen."

Family SCOLOPACIDAE.

* TOTANUS TOTANUS EURHINUS Oberholser.

Totanus totanus eurhinus OBERHOLSER, Proc. U. S. Nat. Mus., vol. 22, 1900, p. 207 (Lake Tsomoriri, Ladak, central Asia).

Reported from the Tambelan Islands by Mr. C. B. Kloss,² as observed between August 3 and 14, 1899, but without mention of any particular island.

ACTITIS HYPOLEUCA (Linnaeus).

[*Tringa*] *hypoleucos* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 149 (Sweden).

Two specimens are in the collection:

Adult female, No. 170882, U.S.N.M.; Pulo Wai, August 12, 1899. Length in flesh, 210 mm.

¹ Species prefixed with an asterisk are not represented by specimens.

² Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 66.

Adult female, No. 170883, U.S.N.M.; Pulo Wai, August 13, 1899.
Length in flesh, 203 mm.

Both of these examples are in worn summer plumage, and have apparently not yet begun to molt. Doctor Abbott mentions seeing several along the seashore of Pulo Wai.

Family OEDICNEMIDAE.

ORTHORHAMPHUS MAGNIROSTRIS SCOMMOPHORUS, new subspecies.

Orthorhamphus magnirostris magnirostris MATHEWS, Novit. Zool., vol. 18, January 31, 1912, p. 226 (not Vieillot).

Subspecific characters.—Similar to *Orthorhamphus magnirostris magnirostris* (Vieillot), from Australia, but upper and lower parts paler.

Description.—Type, adult male, No. 170879, U.S.N.M.; Pulo Wai, Tambelan Islands, South China Sea, August 13, 1899; Dr. W. L. Abbott. Upper parts drab, slightly verging toward hair brown, more grayish on rump and superior tail-coverts, the shafts of the feathers fuscous (these markings most conspicuous on pileum and cervix), the upper tail-coverts much mottled and irregularly barred with smoke gray and light smoke gray; middle rectrices like the rump, barred and mottled terminally with dull light smoke gray; remaining tail-feathers basally drab, succeeded distally by a very narrow bar of fuscous, then by a wide white subterminal band, and finally by a broad terminal band of fuscous, varying to fuscous black; five outer primaries largely fuscous, but first (outermost) quill with a broad white subterminal band, connected by the broad white inner margin with the white base of inner web; second quill with a similar white bar, though only on inner web, and connected with the white base of inner vane; third the same, but with the white areas somewhat brownish; fourth and fifth quills with only base of inner vane and outer two-thirds of middle portion of same vane white; remaining primaries white, with subterminal mottling of fuscous, chiefly on outer webs; outer secondaries basally white, terminally fuscous, but exterior margins of outer vanes pale brownish smoke gray; inner secondaries drab, their outer margins broadly pale smoke gray; tertials drab; innermost rows of lesser wing-coverts drab like the back, with darker shafts; several succeeding rows of coverts fuscous, forming a conspicuous dark wing-bar, followed by a narrower white bar; remaining lesser coverts, with median and greater coverts, pale smoke gray, the shafts slightly darker; superciliary stripe and subocular stripe, connected posteriorly with broad auricular stripe, white; lores, large malar spot, broad stripe on side of crown above the white superciliary, and broad stripe on cheeks, meeting the last behind the white auricular stripe, brownish black; lower cheeks, chin, and upper throat white;

jugulum very pale smoke gray, with shaft streaks of fuscous and dark drab, these deepest and most conspicuous anteriorly; rest of lower parts dull white, the sides, flanks, and particularly lower tail-coverts, slightly washed with cinnamomeous; lining of wing pure white; "iris yellow; feet dirty yellow, claws dark horn brown; bill black, dull yellow at base."

The typical form of this species was first described by Vieillot¹ without indication of locality; but Mr. G. M. Mathews has recently designated its type-locality as Binongka, Celebes. Unfortunately, however, the latter author overlooked Count von Berlepsch's prior designation² of Australia as the type region, and also Vieillot's own subsequent statement³ that Australasia was the patria of the specimen on which he had based the name *Oedienemus magnirostris*. Furthermore, Dr. A. Menegaux, who, as is well known, has charge of the ornithological collection in the Muséum National d'Histoire Naturelle in Paris, informs me in a letter just received, that the type of *Oedienemus magnirostris* Vieillot is still preserved in that institution, and that it is a specimen obtained by Péron in Australia! It seems necessary, therefore, now to consider the Australian bird the typical form, of which *Orthorhamphus magnirostris neglectus* Mathews⁴ consequently becomes a synonym. In view of this change, the bird from the East Indies, which Mr. Mathews considered typical *Orthorhamphus magnirostris*, is in need of a new designation, which we accordingly provide here.

Besides the type, described above, Doctor Abbott obtained two specimens in the Tambelan Islands. One of these is an adult female (No. 170880, U.S.N.M.), collected, August 13, 1899, on the reef of Pulo Wai, in company with its mate, the type of *Orthorhamphus magnirostris scommophorus*; which two were all that Doctor Abbott saw on this island. Both are in worn summer plumage, and are just beginning to show evidences of molt among the contour feathers.

The third example is a female in juvenal plumage (No. 171128, U.S.N.M.), taken, August 4, 1899, on Pulo Gilla, by Mr. C. Boden Kloss. This bird also is just beginning to molt its contour feathers. It differs from the adult in having the feathers of the upper parts, including scapulars and tertials, conspicuously edged, tipped or distally mottled with light grayish buff; the terminal portion of middle rectrices more broadly barred with dark brown and whitish; the lesser wing-coverts broadly margined with dull buffy; the dark bar on the inner lesser coverts lighter and much obscured by similar light

¹ *Oedienemus magnirostris* Vieillot, *Nouv. Dict. d'Hist. Nat.*, vol. 23, 1816, p. 231.

² *Abhandl. Senkenb. Naturf. Gesell.*, vol. 34, 1911, p. 87.

³ *Encycl. Méth.*, vol. 1, 1820, p. 339.

⁴ *Novit. Zool.*, vol. 18, Jan. 31, 1912, p. 226 (Lewis Island, northwestern Australia).

feather edgings; the white bar on lesser coverts more or less broken by dusky markings; the median and greater coverts darker, duller, more brownish, and less uniform, being in places irregularly barred or mottled with dusky, and the tips of the greater coverts broadly white, forming a conspicuous wing-bar, this set off proximally from the remaining portion of the coverts by a narrow dusky bar.

Measurements of the two adults from the Tambelan Islands are as follows:

Measurements of specimens of Orthorhamphus magnirostris scommophorus.

U.S.N.M. No.	Sex.	Locallty.	Date.	Collector.	Total length, ¹	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe without claw.
170879....	Male....	Pulo Wai, Tambelan Islands. ²	1899. Aug. 13	Dr. W. L. Abbott.	mm.	mm. 272	mm. 114	mm. 74	mm. 92.5	mm. 47
170880....	Female .	.....do.....	.....do.....	.....do.....	533	266	113	75	84	43.5

¹ Measured in the flesh by the collector.

² Type.

Family LARIDAE.

STERNA ANAETHETA ANAETHETA Scopoll.

Sterna Anaethetus SCOPOLI, Del. Flor. et Faun. Insubr., pt. 2, 1786, p. 92 (Panay Island, Philippine Islands).

Five specimens:

Adult male, No. 170892, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 406 mm. "Bill and feet black; inside of mouth white."

Adult male, No. 170896, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 407 mm. "Feet black; iris dark brown; bill black, extreme tip white."

Adult male, No. 170895, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 394 mm.

Adult female, No. 170894, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 394 mm.

Adult female, No. 170893, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 406 mm.

All are in good plumage; and they belong apparently to the typical race of *Sterna anaetheta*. Doctor Abbott says that this species was present in great numbers on the two Rocky Islets. It evidently breeds there abundantly, although the breeding season was past at this time (August 14).

ANOUS STOLIDUS PILEATUS (Scopoli).

Sterna pileata SCOPOLI, Del. Flor. et Faun. Insubr., pt. 2, 1786, p. 92 (Philippine Islands).

Three specimens:

Adult male, No. 170890, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 426 mm.

Adult female, No. 170889, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 406 mm.

Adult female, No. 170891, U.S.N.M.; Pulo Mandariki, August 14, 1899. Length in flesh, 426 mm. "Bill and feet black, iris blackish."

These are all in perfect plumage, and belong apparently to the Philippine race. Doctor Abbott says that the species, at the time of his visit, was in considerable numbers on Pulo Mandariki, in company with much greater numbers of *Sterna anaetheta*. These two were about the only avian inhabitants of consequence. Although both had practically finished breeding, Doctor Abbott found some young birds and addled eggs of *Anous stolidus pileatus* in the crevices of the rocks.

Family CLARAVIIDAE.

*CALOENAS NICOBARICA (Linnaeus).

[*Columba*] *nicobarica* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 164 (Nicobar Islands, Bay of Bengal).

Seen by Doctor Abbott on Pulo Bunoa, August 5-7, 1899.

*CHALCOPHAPS INDICA INDICA (Linnaeus).

[*Columba*] *indica* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 164 (eastern-India).

Recorded from the Tambelan Islands, August 3-14, 1899, by Mr. C. B. Kloss.¹

*SPIOPELIA TIGRINA (Temminck).

Columba tigrina TEMMINCK, Hist. Nat. gén. Pigeons, vol. 1, 1808-1811, pl. 43 [p. 158] (Batavia, Java).

Doctor Abbott saw some, but collected none, on Pulo Gilla, August 4, 1899. Not noted elsewhere in the Tambelan Islands.

Family TRERONIDAE.

MYRISTICIVORA BICOLOR (Scopoli).

Columba bicolor SCOPOLI, Del. Flor. et Faun. Insubr., pt. 2, 1786, p. 94 (New Guinea).

Five specimens:

Adult male, No. 170884, U.S.N.M.; Pulo Wai, August 12, 1899. Length in flesh, 387 mm. "Feet blue; claws black."

¹ Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 66.

Adult male, No. 170898, U.S.N.M.; Saddle Island, August 15, 1899. Length in flesh, 407 mm.

Adult male, No. 170897, U.S.N.M.; Saddle Island, August 15, 1899. Length in flesh, 413 mm. "Bill light blue, tip black. Crop filled with wild nutmegs."

Adult female, No. 170899, U.S.N.M.; Saddle Island, August 15, 1899. Length in flesh, 381 mm. "Upper mandible green at base, black at tip; lower mandible greenish leaden, black at tip."

Adult female, No. 170885, U.S.N.M.; Pulo Wai, August 13, 1899. Length in flesh, 394 mm.

These are apparently indistinguishable from specimens taken in the Philippine Islands and on Celebes. Two—No. 170898, U.S.N.M., male, taken, August 15, and No. 170885, U.S.N.M., female, taken, August 13, are molting their contour feathers, mostly on throat, breast, and hind neck. The three other examples are in excellent plumage, though in places somewhat soiled, apparently from vegetable juices. Doctor Abbott reported this species common on Saddle Island, August 15, 1899; and fairly so on Pulo Wai, August 12-14, 1899. He saw it also on Pulo Bunoa, August 5-7, 1899.

Measurements of these Tambelan Islands birds are given below.

Measurements of specimens of Myristicivora bicolor.

U.S.N. M. No.	Sex.	Locality.	Date.	Collector.	Total length, ¹	Wing.	Tail.	Exposed culmen.	Height of bill at base.	Tarsus.	Middle toe without claw.
170884	Male...	Pulo Wai, Tambelan Islands.	1899. Aug.12	Dr. W. L. Abbott.	387	223	122.5	20.5	7.5	28.5	35
170897	...do...	Saddle Island, Tambelan Islands.	Aug.15	.....do.....	413	227	126.5	23.5	9	31.5	40
170898	...do...	.....do.....	.....do.....	.....do.....	407	231	124	25	9	30.5	39
170899	Female.	.....do.....	.....do.....	.....do.....	381	219	119	23.5	.....	28	31.5
170885	...do...	Pulo Wai, Tambelan Islands.	Aug.13	.....do.....	394	214	120	24	.....	27	35

¹ Measured in the flesh by the collector.

***MUSCADIVORES AENEUS POLIUS Oberholser.**

Muscadivores aeneus polius OBERHOLSER, Bull. U. S. Nat. Mus., No. 98, June 30, 1917, p. 18 (Pulo Siantan, Anamba Islands).

This species was reported from the Tambelan Islands, as observed between August 3 and 14, 1899, by Mr. C. B. Kloss.² Although Doctor Abbott preserved no specimens, the subspecies occurring here seems to be without much doubt that of the Anamba Islands.

² Journ. Straits Branch Roy. Asiatic Soc., No. 41, January, 1904, p. 66.

**DENDROPHASSA VERNANS ADINA* Oberholser.

Dendrophassa vernans adina OBERHOLSER, Bull. U. S. Nat. Mus., No. 98, June 30, 1917, p. 20 (Pulo Mata, Anamba Islands).

Doctor Abbott saw this species on Great Tambelan Island, August 8-12, 1899; and on Pulo Bunoa, August 5-7, 1899. He obtained no specimens, but the bird from the Tambelan Islands is probably referable to the Anamba Islands race.

Family BUCEROTIDAE.

**ANTHRACOCEROS CONVEXUS* (Temminck).

Buceros convexus TEMMINCK, Nouv. Rec. Planch. Col. d'Ois., vol. 2, livr. 89, February, 1832, pl. 530 and text (Java, Borneo, and Sumatra).

Ten specimens:

Adult male, No. 170868, U.S.N.M.; Great Tambelan Island, August 9, 1899. "Iris brownish red; gular skin dark blue; orbital skin bluish white."

Adult male, No. 170869, U.S.N.M.; Great Tambelan Island, August 10, 1899. "Bill and casque yellowish white, black at base [and on] a narrow line along commissure; feet dull leaden, soles yellowish."

Adult male, No. 170853, U.S.N.M.; Pulo Bunoa, August 5, 1899.

Adult male, No. 170856, U.S.N.M.; Pulo Bunoa, August 6, 1899. Weight in flesh, 2¼ pounds. "Iris dark red; bill and casque yellowish white, black at base below; feet dark leaden, soles dull yellow."

Adult male [marked female], No. 170852, U.S.N.M., Pulo Bunoa, August 5, 1899.

Adult female, No. 170870, U.S.N.M.; Great Tambelan Island, August 10, 1899.

Adult female, No. 171129, U.S.N.M.; Pulo Gilla, August 4, 1899. "Stomach contained fruit and lizards."

Adult female, No. 170885, U. S.N.M.; Pulo Bunoa, August 6, 1899.

Adult female, No. 170854, U.S.N.M.; Pulo Bunoa, August 5, 1899

Adult female, No. 170857, U.S.N.M.; Pulo Bunoa, August 6, 1899.

This fine series indicates that the bird of the Tambelan Islands is identical with that of Borneo, Sumatra, and the Malay Peninsula.

All the specimens are in process of molting both quills and contour feathers, but this is not sufficient to interfere with measurements, which are detailed below.

Doctor Abbott reported this hornbill common on Pulo Wai, August 12-14, 1899; on Pulo Bunoa, August 5-7, 1899; and on Great Tambelan Island, August 8-12, 1899.

Measurements of specimens of *Anthracoceros convexus*.

U. S. N. M. No.	Sex.	Locality.	Date.	Collector.	Total length. ¹	Wing.	Tail.	Culmen from posterior end of nostril.	Height of bill at nostril.	Length of casque.	Height of casque at nostril.	Tarsus.	Middle toe without claw.
170853	Male....	Pulo Bunoa, Tambelan Islands.	1899, Aug. 5	Dr. W. L. Abbott.	800	289	264	155.5	42.5	136	34	57.5	42
170856	...do....	.....do.....	Aug. 6	...do..	838	295	282	161	44	136	44	62	41
170868	...do....	Great Tambelan Island, Tambelan Islands.	Aug. 9	...do..	838	288	291	149.5	43.5	141	40.5	57.2	42
170869	...do....	.....do.....	Aug. 10	...do..	800	288	265	149	43	132	31.5	56.5	43.5
170852	[Male]..	Pulo Bunoa, Tambelan Islands.	Aug. 5	...do..	800	293	286	139	41	119	35	56	43.5
171129	Female .	Pulo Gilla, Tambelan Islands.	Aug. 4	...do..	699	260	249	118	36.5	87	18.5	50.5	39
170854	...do....	Pulo Bunoa, Tambelan Islands.	Aug. 5	...do..	749	266	246	123	38	88	18.5	51	41
170857	...do....	.....do.....	Aug. 6	...do..	.....	263	252	123	37.5	98	18	51	39
170855	...do....	.....do.....	...do..	...do..	749	265	257	123	38	94	19	49.5	39
170870	...do....	Great Tambelan Island, Tambelan Islands.	Aug. 10	...do..	749	270	253	118	37	90	17.5	51.5	41

¹ Measured in the flesh by the collector.

Family ALCEDINIDAE.

SAUROPATIS CHLORIS CYANESCENS Oberholser.

Sauropatis chloris cyanescens OBERHOLSER, Proc. U. S. Nat. Mus., vol. 52, February 8, 1917, p. 189 (Pulo Taya, southeastern Sumatra).

The single specimen in the collection is an immature male, No. 170886, U.S.N.M., from Pulo Wai, taken, August 13, 1899. This is apparently almost adult; the upper parts are, however, duller and more greenish than in the fully adult condition; there are still some buffy edgings on the frontal feathers; the customary dusky margins on the breast, together with some slight wash of buff, are also present, but both are practically lacking on the white cervical collar; the black nuchal band is broad and conspicuous, and the auriculars almost solidly black. This example measures: Length in flesh,² 254 mm.; wing, 110.5; tail, 70; exposed culmen, 43; tarsus, 17.5. It apparently is subspecifically identical with birds from Pulo Taya, southeastern Sumatra, the type locality of this race.

Doctor Abbott observed this species also on Great Tambelan Island, August 8-12, 1899; and on Saddle Island, August 15, 1899.

² Measured by the collector.

Family MICROPODIDAE.

*TACHORNIS INFUMATA (Sclater).

Cypselus infumatus SCLATER, Proc. Zool. Soc. London, 1865 (meeting of June 27), p. 602 (Banjermassin, Borneo).

Seen by Doctor Abbott on Great Tambelan Island, August 8-12, 1899.

Family HIRUNDINIDAE.

*HYPUROLEPIS JAVANICA ABBOTTI Oberholser.

Hypurolepis javanica abbotti OBERHOLSER, Bull. U. S. Nat. Mus., No. 98, June 30, 1917, p. 32 (Pulo Manguan, Anamba Islands).

Birds of this species were seen by Doctor Abbott on Great Tambelan Island, August 8-12, 1899. It is probable that they belonged to the recently described race from the Anamba Islands.

Family MUSCICAPIDAE.

HYPOTHYMIS AZUREA OPISTHO CYANEA Oberholser.

Hypothymis azurea opisthocyanea OBERHOLSER, Proc. U. S. Nat. Mus., vol. 39, February 25, 1911, p. 602 (Pulo Piling, Anamba Islands, South China Sea).

Seven specimens:

Adult male, [marked female!], No. 170866, U.S.N.M.; Pulo Bunoa, August 6, 1899.

Adult male, No. 170865, U.S.N.M.; Pulo Bunoa, August 5, 1899. Length in flesh, 184 mm.

Adult male, No. 171132, U.S.N.M.; Pulo Selindang, August 3, 1899. Length in flesh, 191 mm.

Adult male, No. 170887, U.S.N.M.; Pulo Wai, August 13, 1899. Length in flesh, 184 mm.

Adult male, No. 170875, U.S.N.M.; Great Tambelan Island, August 10, 1899. Length in flesh, 175 mm. "Bill blue, tip black; feet blue, claws black; iris dark brown.

Adult female, No. 170867, U.S.N.M.; Pulo Bunoa, August 7, 1899. Length in flesh, 175 mm.

Juvenal female, No. 170864, U.S.N.M.; Pulo Bunoa, August 5, 1899. Length in flesh, 178 mm.

All these are more or less in molt. An immature female (No. 170864, U.S.N.M.) is just like the adult of the same sex except for a slightly paler bill. In both size and color the birds of this species from the Tambelan Islands are identical with those from the Anamba Islands. For detailed measurements of both, consult the writer's paper on the genus *Hypothymis*.¹ Doctor Abbott says that this

¹ Proc. U. S. Nat. Mus., vol. 39, Feb. 25, 1911, p. 603.

pretty blue flycatcher was the only small bird that he found on Pulo Bunoa, but that it was fairly numerous and very tame there. It was also common on Great Tambelan Island, August 8–12, 1899, and on Pulo Wai, August 12–14, 1899.

Family GRACULIDAE.

GRACULA JAVANA PRASIOCARA Oberholser.

Gracula javana prasiocara OBERHOLSER, Bull. U. S. Nat. Mus., No. 98, June 30, 1917, p. 55 (Pulo Piling, Anamba Islands).

Nine specimens:

Adult male, No. 170873, U.S.N.M.; Great Tambelan Island, August 10, 1899. Length in flesh, 330 mm.

Adult male, No. 170859, N.S.N.M.; Pulo Bunoa, August 6, 1899.

Adult male, No. 170858, U.S.N.M.; Pulo Bunoa, August 5, 1899. Length in flesh, 337 mm.

Adult female, No. 170871, U.S.N.M.; Great Tambelan Island, August 9, 1899. Length in flesh, 324 mm.

Adult female, No. 170872, U.S.N.M.; Great Tambelan Island, August 10, 1899. Length in flesh, 324 mm.

Adult female, No. 170860, U.S.N.M.; Pulo Bunoa, August 6, 1899. Length in flesh, 324 mm.

Adult female, No. 170861, U.S.N.M.; Pulo Bunoa, August 6, 1899. Length in flesh, 343 mm. "Iris dark gray; bill red, tip yellow; feet yellow."

Adult female, No. 170863, U.S.N.M.; Pulo Bunoa, August 7, 1899. Length in flesh, 343 mm. "Feet yellow, claws pale brownish horny; wattles yellow."

Adult female, No. 170862, U.S.N.M.; Pulo Bunoa, August 7, 1899. Length in flesh, 330 mm.

Most of these birds show indications of molt in either the quills or contour feathers, some in both. Several have noticeable whitish tips on the feathers of the abdomen, which on one specimen (No. 170860, U.S.N.M.) are very conspicuous.

This series from the Tambelan Islands is interesting, since it considerably extends the range of this subspecies, hitherto reported from only the Anamba Islands. As will be seen from the appended measurements, these birds agree in size with Anamba specimens; nor is there any difference in color.

Doctor Abbott reported the species fairly common on Great Tambelan Island; also the commonest bird on Pulo Bunoa, where he found it feeding on the wild nutmegs.

Measurements of all the specimens collected are as follows:

Measurements of specimens of Gracula javana prasiocara.

U. S. N. M. No.	Sex.	Locality.	Date.	Collector.	Total length. ¹	Wing.	Tail.	Exposed culmen.	Height of bill at base.	Greatest length of lappets.	Greatest width of lappets.	Tarsus.	Middle toe without claw.
170858	Male....	Pulo Bunoa, Tambelan Islands.	1899, Aug. 5	Dr. W. L. Abbott.	337	177	84.5	26.5	15.5	20	.....	40	32
170859	...do....	.....do.....	Aug. 6	...do..	191	86	29.5	16	24	22		39	35
170873	...do....	Great Tambelan Island, Tambelan Islands.	Aug. 10	...do..	330	191.5	89.5	26.5	14	18	17	38	34
170860	Female.	Pulo Bunoa, Tambelan Islands.	Aug. 6	...do..	324	175	81	28	15.5	16	16	39	33
170861	...do....	.....do.....	.....do.....	.....do.....	343	178.5	85.5	28	15	23.5	15.5	38	31.5
170862	...do....	.....do.....	Aug. 7	.....do.....	330	187	88.5	27	15	21	13	39	31.5
170863	...do....	.....do.....	.....do.....	.....do.....	343	183	85.5	29.5	16.5	24.5	16	39	31.5
170871	...do....	Great Tambelan Island, Tambelan Islands.	Aug. 9	.....do.....	324	170	83	28.5	16	14	15	37	32.5
170872	...do....	.....do.....	Aug. 10	.....do.....	324	178	78.5	27	15	15	13.5	36	32

¹ Measured in the flesh by the collector.

LAMPROCORAX PANAYENSIS HETEROCHLORUS Oberholser.

Lamprocorax panayensis heterochlorus OBERHOLSER, Bull. U. S. Nat. Mus., No. 98, June 30, 1917, p. 57 (Pulo Mobur, Anamba Islands).

Four specimens:

Adult female, No. 170888; U.S.N.M.; Pulo Wai, August 12, 1899.

Juvenal female, No. 171130, U.S.N.M.; Pulo Selindang, August 3, 1899. Length in flesh, 210 mm.

Juvenal (nearly adult) male, No. 170874, U.S.N.M.; Great Tambelan Island, August 9, 1899.

Juvenal male, No. 171131, U.S.N.M.; Pulo Selindang, August 3, 1899. Length in flesh, 216 mm.

The adult female is in worn summer plumage and has apparently not yet begun to molt. The three juvenal birds, however, are in the midst of the change, this involving both quills and contour feathers; and one of the juvenal males (No. 170874, U.S.N.M.) has acquired nearly all its adult plumage. These birds seem to be quite identical with examples of *Lamprocorax panayensis heterochlorus* from the Anamba Islands.

Doctor Abbott reported this starling common on Pulo Wai, August 12-14, 1899; on Pulo Bunoa, August 5-7, 1899; also on Great Tambelan Island, August 8-12, 1899; and he observed it on Saddle Island, August 15, 1899.

Measurements of specimens of Lamprocorax panayensis heterochlorus.

U.S.N.M. No.	Sex.	Locality.	Date.	Collector.	Total length. ¹	Wing.	Tail.	Exposed culmen.	Height of bill at base.	Tarsus.	Middle toe without claw.
170874	Male, juvenal.	Great Tambelan Island, Tambelan Islands.	1899, Aug.9	Dr. W. L. Abbott.	216	100.5	64	17	8	21	19.5
170888	Female	Pulo Wai, Tambelan Islands.	Aug.12	do.	216	103.5	63.5	17	7	23	19.5

¹ Measured in the flesh by the collector.

Family MOTACILLIDAE.

*MOTACILLA BOARULA MELANOPE (Pallas).

Motacilla melanope PALLAS, Reise Versch. Prov. Russ. Reichs, vol. 3, 1776, p. 696 (Dauria, Siberia).

Two or three individuals were seen by Doctor Abbott on Pulo Wai, August 12-14, 1899.