

# Report of a Mission to Guam.

BY ALVIN SEALE.

## PART I.—AVIFAUNA.

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THE Marianas or Ladrone Islands consist of twenty-one small volcanic islands which extend on a north and south line for a space of about 400 miles. They were discovered by Magalhães, March 6, 1521. For the most part they present a bold rocky coast line with high hills or low mountains rising in the interior. They are densely wooded, except on top of the mountains, where it is usually barren, or covered with tall grass.

My actual field work was confined to the island of Guam, which is the largest and southernmost of the group, being thirty-two miles long by twelve broad. This island is densely wooded, except in the northwest, where there is a small range of low mountains reaching to an elevation of 1800 feet. The general height of the island is from fifty to seventy-five feet, with a few small fresh water ponds and marshes, and perhaps eight or ten small streams.

In this paper I have followed as near as possible the A. O. U. code of nomenclature. The key, inserted for the convenience of fellow-workers in Polynesian ornithology, is chiefly compiled from various works of worth bearing on the subject. The measurements are all in inches, and like the color notes were taken from specimens in the flesh, *i. e.*, in all the Guam specimens. Unless a specimen is marked "*Immature*" an adult bird is to be understood. The local names given in Vol. V., Nov. Zool., all have a curious Japanese twist to them, and with one exception are all incorrectly spelled. The native names as herein given were all revised by Lieutenant-Governor Safford of Guam, who is the best living authority on the Chamorro language.

## KEY TO ORDERS.

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**a**<sup>1</sup>. Toes four, all fully connected by web. Order **Steganopodes**.

**a**<sup>2</sup>. Toes four, hind toe not connected with front ones; bill with cutting edge fringed or dentate.....Order **Anseres**.

**a**<sup>3</sup>. Toes four, all on the same level; bill short, strongly hooked, and with a cere at the base of the upper mandible.

Order **Raptores**.

**a**<sup>4</sup>. Toes three, or if four the hind one not connected by web with the inner toe.

**b**<sup>1</sup>. Nostrils tube-shaped, feet webbed.....Order **Tubinares**.

**b**<sup>2</sup>. Nostrils not tubular, anterior toes webbed, tarsus shorter than the tail.....Order **Longipennes**.

**b**<sup>3</sup>. Nostrils not tubular, anterior toes not broadly united by web, the lower portion of the thighs naked, or else the bill is lengthened and grooved along each side, outer and middle toes separate.

**c**<sup>1</sup>. Hind toe long and on the same level as the front toes, loreal or orbital regions naked.

Order **Herodiones**.

**c**<sup>2</sup>. Hind toe short and on same level as front toes, or but slightly elevated; if long as lower mandible there is a frontal shield present.....Order **Paludicolæ**.

**c**<sup>3</sup>. Hind toe short and below the level of the front toes.

Order **Limicolæ**.

**b**<sup>4</sup>. Nostrils not tubular, the lower portion of the thighs feathered, or else the middle and outer toes are united for at least half their length.

**c**<sup>4</sup>. Hind toe small and elevated, or else bill is without a soft cere, bill not hooked, short and stout.

Order **Gallinæ**.

**c**<sup>5</sup>. Hind toe well developed and on a level with the anterior toes, bill with a soft swollen cere at the base of the upper mandible.....Order **Columbæ**.

**c**<sup>6</sup>. Bill without soft swollen cere.

- d**<sup>1</sup>. Wing very long, about equal to the total length of the bird, which does not exceed 4.50, primaries ten, secondaries six.

Order **Macrochires**.

- d**<sup>2</sup>. Wing shorter, equal to about one-half the total length of the bird, bill large, primaries nine.

Order **Coccyges**.

- d**<sup>3</sup>. Wings not very long, toes three in front and one behind, the middle and outer toes not united for half their length, lower part of thighs feathered, the tarsus equal to or longer than the lateral toes.....Order **Passeres**.

## Order LONGIPENNES.—Long-winged Swimmers.

**a**<sup>1</sup>. Bill without cere, lower mandible not longer than upper, tail feathers twelve, claws feeble or moderate. Family *Laridae*, Gulls and Terns.

**b**<sup>1</sup>. Tail even, hind toe perfectly developed but small, culmen more than two-thirds as long as tarsus. Genus *Larus*.

**b**<sup>2</sup>. Tail graduated.

**c**<sup>1</sup>. Outer tail feathers broad and rounded at tip.

**d**<sup>1</sup>. Wing less than 9.5, general color black, wings lighter. Genus *Hydrochelidon*.

**d**<sup>2</sup>. Wings more than 9.5, general color, including wings, a sooty black. Genus *Anous*.

**c**<sup>2</sup>. Outer tail feathers sharp, pointed, the next to the outer pair the longest, general color pure white. Genus *Gygis*, Wagler.

### GENUS *LARUS* LINNÆUS.

#### 1. *Larus vegae* (Palmen). Pallas' Gull.

Mantle light gray or pearl gray; no black spot on the bill of the adult. Length 26, wing 15.15–18.30, culmen 1.90–2.20, tarsus 2.15–2.20. *Hab.* Pacific Ocean, probably accidental on the Marianas, only one specimen having been taken there, which is now in the Paris Museum.

### GENUS *HYDROCHELIDON* BOIE.

#### 2. *Hydrochelidon leucoptera* (Temm.). White-winged Black Tern.

General color black, silvery and white on wings; young and winter specimens with tail and under parts white. Length 9.3, culmen 1.1, wing 8.2, tail 3.1, tarsus .75, mid-toe and claw 1. *Hab.* (Doubtful) Parts of the Australian and American coasts.

### GENUS *ANOUS* LEACH.

**a**<sup>1</sup>. Forehead alone is distinctly whitish. *Anous stolidus*, Linn.

**a**<sup>2</sup>. Entire top of head whitish, the white changing gradually into ashy on the hind neck. *Anous leucocapillus*, Gould.

#### 3. *Anous leucocapillus* Gould. Black-cheeked Noddy.

Lores jet black, cheeks dusky, upper and under parts nearly black, tarsus and toes dark brown. Length 13, culmen 2, wing 9, tail 5, tarsus .9, mid-toe and claw 1.4. *Hab.* Inter-tropical Atlantic,

Australia, and Pacific islands. Probably resident on the island of Saipan, Marianas.

#### 4. *Anous stolidus* (Linn.). **Fahan. Noddy.**

The Noddy, Catesby, Nat. Hist. Carolina, 1737, I., p. 88.

*Sterna stolidus*, Linn., Syst. Nat., 1758, ed. XI., p. 173; Kittl. Kupfertaf, III., p. 27.

*Anous stolidus*, Gray, Gen. B., p. 100; Saunders, Cat. Brit. Mus. B., XXV., p. 136; Wiglesw. Av. Poly. Ber. abh. u. Mus. Dresden, 1890-91, p. 76; Rothschild, Av. Laysan, 1893, I., p. 41; Hartert, Nov. Zool., 1898, V., p. 68.

*Anous stolidus pileatus* (Scop.), Hartert, Nov. Zool., VI., p. 9.

The natives tell me this bird is very abundant on the island of Saipan. In Guam it is not very common; a few were seen on the cliffs near the entrance of the harbor of San Luis de Apra. The five specimens secured were shot on the northeast end of the island, where a small number were seen flying along the beach. These specimens are much darker in color than those from Laysan and Oahu, H. I. The measurements were as follows:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9589	June 14	11.15	6.50	2.75	1.06	1.18	1.62	im. ♂
9590	June 15	17.00	11.25	6.62	.95	1.53	1.55	♂
9591	June 16	17.05	10.87	7.00	.90	1.59	1.64	♂
9592	June 23	17.05	11.16	6.00	1.00	1.59	1.63	♂
9593	June 23	17.00	11.00	6.45	1.00	1.63	1.55	♂

One specimen, No. 9589, was a young male, the color of which was not so dark as in the adults; the gray coloring is restricted to the forehead; there is a white superciliary band extending from posterior of the eye to the upper mandible. The chin has not yet acquired the brown feathers of the adult, but is still covered with a gray down. There is a dark wing bar on top of wings. *Hab.* Tropical and juxta-tropical seas.

#### GENUS **GYGIS** WAGLER.

#### 5. *Gygis alba kittlitzii* Hartert. **Chung. White Tern.**

*Gygis alba kittlitzii*, Hart., Vogels. Mus. Senckenb., p. 237; *Id.* Nov. Zool., V., p. 67.

*Sterna nivea*, F. Bennett, Whaling Voy., 1840, I., p. 37.

*Gygis candida*, Wagl., Isis, 1832, p. 1223; Finsch, Ibis, 1880, pp. 330, 434; Tristr. Ibis, 1881, p. 251; Saunders, Cat. B. Brit. Mus., XXV., p. 149.

*Gygis alba*, Licht., Nomencl. Av., 1854, p. 97; Finsch, Journ. Mus. Godef., 1875, VIII., p. 43; Roth. Avif. Laysan, I., p. 35 (pl. and eggs).

Chung, the White Tern, is an abundant bird on Guam and undoubtedly nests on the island, although I did not succeed in finding the eggs. They congregate in the breadfruit trees in the midst of the jungle, and the beauty of their pure white plumage among the green leaves is very striking:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9578	June 10	12.75	9.50	4.68	.56	1.60	1.15	♂
9580	June 16	12.50	9.50	4.68	.53	1.54	1.12	♂
9581	June 16	12.25	9.50	4.50	.53	1.50	1.12	♂
9583	June 16	12.75	9.50	4.50	.56	1.50	1.16	♂
9584	July 11	13.00	9.75	4.80	.50	1.60	1.15	♂
9579	June 15	13.00	9.75	4.75	.56	1.63	1.16	♂

The spread of the wings is about 26, and the depth of the bill at the nostrils is .31-.33. The entire plumage of the adult is ivory

white with the exception of a very narrow dusky ring around the eye. The shafts of the primaries are gray; the feet and tarsus are blue with white webs, which are deeply incised; the bill is blue, darker at tip; eyes brown. In the dry skins the color of the bill becomes much darker, and the webs fade into a pale yellowish, but the toes retain their blue color and are never dark brown as given by Saunders (Brit. Mus. Cat. B., XXV., p. 150), or black as given by Rothschild (Avif. Laysan, I., p. 36). In this last citation the length of the bill is given as 0.4-0.5!—doubtless a printer's error. Two specimens of this tern, taken by H. C. Palmer on Laysan Island June, 1891, give the following measurements: Length (skins) 12.75, wing 9.75 and 9.60, tail 4.62 and 4.35, tarsus .50 and .52, mid-toe and claw 1.15 and 1.11, culmen 1.40 and 1.55, its depth at nostrils .30 and .31. *Hab.* Polynesia.

## Order TUBINARES.—Tube-nosed Swimmers.

**a<sup>1</sup>.** Wings large, over 19, upper mandible hooked, nostrils of two distinct tubes. Family *Diomedeidæ*.

**a<sup>2</sup>.** Wings smaller, less than 19, nostrils united in one tube with two barrels. Family *Procellariidæ*.

### FAMILY DIOMEDEIDÆ.—ALBATROSSES.

#### GENUS DIOMEDEA LINNÆUS.

#### 6. *Diomedea nigripes*, Aud. Black-footed Albatross.

General color uniformly dusky; tail coverts, base of tail, and forehead white; bill dark brown; feet black. Length 28-36, wing 18.50-20, culmen 4-4.50, tarsus 3.50-3.70, mid-toe and claw 4.05-4.40. *Hab.* Pacific Ocean generally, south to the Line; accidental in the Marianas. "One specimen in the Paris Museum."

### FAMILY PROCELLARIIDÆ.—PETRELS.

#### GENUS PUFFINUS BRISSON.

**a<sup>1</sup>.** Tarsus less than 1.65.

**b<sup>1</sup>.** Sides of neck and breast slaty, bill .90-1. *Puffinus tenebrosus*.

**b<sup>2</sup>.** Sides of neck mottled, breast and under neck white, bill 1.50. *Puffinus obscurus*.

**7. *Puffinus tenebrosus* Pelz. Pelzeln's Shearwater.**

Upper color sooty black, sides of neck and breast slaty with whitish margins to the feathers. Length 12, wing 7.20-7.80, tail 2.95-3.25, culmen 1-1.05, tarsus 1.40-1.45, mid-toe and claw 1.50-1.60. *Hab.* Coast of Australia.

**8. *Puffinus obscurus* Gm. Dusky Petrel.**

Probably same as above. Length 12, wing 7.8, tail 3.2, bill 1.5, tarsus 1.5, mid-toe and claw 1.6 (Samoan Islands). *Hab.* Tropical and sub-tropical seas.

Order STEGANOPODES.—Totipalmated Swimmers.

**a<sup>1</sup>.** Nostrils distinct, bill sharp-pointed without hook, chin feathered, tail short, graduated, in the adults the two middle feathers are greatly elongated. Family *Phaëthontidæ*.

**a<sup>2</sup>.** Nostrils not distinct, head partly naked, bill stout but not hooked, tail about half as long as wing. Family *Sulidæ*.

**a<sup>3</sup>.** Nostrils distinct, bill hooked at tip, lores feathered, upper plumage black, tail forked, wing long. Family *Fregatidæ*.

FAMILY **PHAETHONTIDÆ**.—TROPIC BIRDS.

GENUS **PHAETHON** LINNÆUS.

**9. *Phaëthon candidus* Temm. Boatswain Bird. Tropic Bird.**

General color pure white; a black band bordering both sides of the head, passes through the eye, and terminates in a crescent-shaped mark at gap; a black band on the wings. Length 30, culmen 1.8-2, wing 10-10.6, tail 17.3-21, tarsus .8-.9. The young are barred with black. *Hab.* Inter-tropical seas, except coast of North America. "Resident on Agrigan, of the Marianas."

FAMILY **SULIDÆ**.—GANNETS.

GENUS **SULA** BRISSON.

**a<sup>1</sup>.** Feet greenish or yellowish; head, breast, neck and upper parts brown. *Sula sula*.

**a<sup>2</sup>.** Feet always reddish, head and neck white, tinged with buff; general color white. *Sula piscator*.

**10. *Sula sula* Linn. Luau. Booby. Gannet.**

*Pelecanus sula*, Linn., S. N., 1766, I., p. 218.

*Sula fusca*, Vieill., Gal. Ois., 1825, II., p. 194, pl. 277; Swinh. Ibis, 1869, p. 347 (Formosa); Tristram, Ibis, 1882, p. 144, Solomon Islands.

*Sula fiber*, Cassin (aft. L.) U. S. Ex. Exp. 1858, p. 363.

*Sula leucogastra*, Sclat. & Salv. P. Z. S., 1873, p. 651; Seebohm, B. of Jap., p. 12.

*Sula Sula*, Verr. & Des Murs. Rev. Mag. Zool., 1860, p. 442; Ridg. Man. N. A. B., p. 75; Roth. Avif. Laysan, I., p. 29; Hartert, Nov. Zool., V., p. 69; Oust. II., p. 63; Cat. B. Brit. Mus., XXVI., p. 436.

Only one specimen of the Booby was secured, although they were not at all rare. This bird was taken July 23 and proved to be an adult male. They were usually to be seen flying about the cliffs near the entrance to the harbor of San Luis de Apra. Length 30, spread of wing 4 ft. 10 in., wing 16, tail 7.75, tarsus 1.62, culmen 3.56, its depth at nostrils 1.36, mid-toe and claw 3.59. The general upper coloring, including head, neck, and fore breast is a fine uniform seal brown; hind breast, belly, under tail coverts, sides, flanks, thighs, axillaries, and under wing coverts of the secondaries, pure white; shafts of the primaries black on the upper surface, gray below; bill flesh color, with grayish tint, bluish at tip; feet and tarsus a livid light-green; iris a silvery grayish. This specimen is much darker than the summer specimens from Laysan Island. The posterior half of the primaries are especially dark brown as compared with the Laysan birds, as is also the head, neck and breast. *Hab.* Tropical and sub-tropical seas throughout the world, except the Pacific coast of America.

**11. *Sula piscator* Linn. Red-footed Booby.**

The general plumage of this species is white; feet always red; gular sac blackish; bare skin in front of eye red; tail white. Total length 27-30, wing 15-16, culmen 3.50. *Hab.* Inter-tropical seas, north to Florida and Lower California.

**FAMILY FREGATIDÆ.—MAN-OF-WAR BIRDS.****GENUS FREGATA CUVIER.**

**a<sup>1</sup>.** Wing more than 21.5, culmen not less than 4.15. *Fregata aquila*, Vieill.

**a<sup>2</sup>.** Wing less than 21, culmen less than 4.15. *Fregata ariel*, Gould.

**12. *Fregata aquila* (Vieill.). Frigate Bird.**

Man-of-war Bird, Edwards, Glean., 1860, II., p. 209.

*Pelecanus aquilus*, Linn., S. N., 1766, I., p. 216.

*Tachypeles aquila*, Vieill., N. Dict. d'Hist. Nat., 1817, XII., p. 146.

*Fregata aquila*, d'Orb., Sagras Hist. Cuba, 1839, p. 309; Rothschild, Avif. Laysan, 1893, I., p. 21; Cat. Brit. Mus. B., XXVI., p. 443.

An adult male specimen of this bird was shot by a native November, 1899, and brought in to Lieutenant-Governor Safford, by whom it was identified. The skin was not saved, but the skeleton was presented to the Bishop Museum by Lieutenant Safford

(No. 9608). This is the first record of this species from Guam.  
*Hab.* Tropical and sub-tropical seas.

### 13. *Fregata ariel* Gould. Australian Tropic Bird.

General color greenish black, a white patch on each flank. Wing 19.2-21, tail 15-17, culmen 2.8-3.3. The female is a little larger, with breast and sides white, and a white collar at the rear of the neck. The young have the head and neck white; a general coloring of brown; the middle of the abdomen and the flanks white. *Hab.* Tropical Pacific and Indian Ocean.

## Order ANSERES.—Lamellirostral Swimmers.

a<sup>1</sup>. Hind toe without membranous lobe or flap. Sub-family *Anatinæ*.

a<sup>2</sup>. Hind toe with a broad membranous flap or lobe. Sub-family *Fuligulinæ*.

### SUB-FAMILY ANATINÆ.—FRESH WATER DUCKS.

#### GENUS ANAS LINNÆUS.

### 14. *Anas oustaleti* Salvad. Ngang. Ladrone Duck.

*Anas oustaleti*, Salvad., Bul. Brit. Orn. Club, XX., p. 1; *Id.*, Cat. B. Brit. Mus., XXVII., p. 189; Hartert, Nov. Zool., V., p. 66; Oust., II., p. 49.

This duck nests among the reedy swamps and streams of the island, and is not uncommon all the year round. The specimens secured were taken during the month of June. The general color of the upper surface is dark brown, the feathers margined with buff; top of head dark brown with a slight greenish tint; in some specimens the crown is slightly sprinkled with a few small buffy feathers; a pale buffy stripe extending from base of upper mandible over the eye to back of head; below this there is a dark stripe extending from the base of the upper mandible through the eye to the back of the head; sides of the head, and neck, buffy with streakings of brown; the throat buff, not streaked; under parts not so dark as the upper, the buffy tips of the feathers being longer and wider, but not so bright; wings a soft dark brown, the secondaries more or less edged with buff; speculum bluish-purple, green in some lights; it is bordered by black, followed front and back by an indistinct white or buffy line, as in *A. wyvilliana* of Hawaii; the white markings, however, are not so prominent as in the latter; bill dusky above, with small black splotches; the lower mandible lighter (No. 9534 has bill entirely black); feet and tarsus flesh color with a tint of pink; eye light hazel. Length 19.50-20,

spread of wings 32, wing 10-10.50, tail 2.25-2.50, tarsus 1.63-1.85, culmen 1.75-1.80, its depth at nostrils .68, mid-toe and claw 2.45-2.50. *Hab.* Guam and Saipan, also probably others of the Marianas. Two of the downy young were secured, the general upper coloring of which is brown; there is a buffy spot on each side of the rump; the throat, neck and general under coloring is buffy; a wide and distinct superciliary line of buff; a black line from the upper mandible through the eye; there is a splotch of brown at the nape and another on the sides of the head below the ear; upper mandible black, lower yellowish; feet brownish.

## SUB-FAMILY **FULIGULINÆ**.—SEA DUCKS.

### GENUS **FULIGULA** STEPHENS.

#### 15. *Fuligula fuligula* Linn. **Tufted Duck.**

General color black, abdomen white; tail feathers normal, not particularly stiff; head with crest; speculum white. Wing 8, tail 2.5, culmen 1.75, tarsus 1.12. General color of young and females brown. *Hab.* Palæarctic regions from the Atlantic to the Pacific; winters in China, Japan and India; accidental in Polynesia.

## Order HERODIONES.—Hérons, Storks, Bitterns, Etc.

**a**<sup>1</sup>. Bill sharp-pointed and nearly straight, inner side of middle toe-nail pectinate, loreal space bare, powder-down tracts present. Family *Ardeidæ*, Herons.

**b**<sup>1</sup>. Tail feathers 10, bill with serrations, slightly notched.

**c**<sup>1</sup>. Length about 21, yellowish band down sides of neck, culmen longer than tarsus. Genus *Dupetor*.

**c**<sup>2</sup>. Length about 14, tibio-tarsus feathered to heel. Genus *Ardetta*.

**b**<sup>2</sup>. Tail feathers 12 or more, bill without serrations, and usually with a distinct notch, culmen longer than tarsus, length about 22. Genus *Demiegretta*.

### GENUS **DUPETOR** HEINE & REICHENBACH.

#### 16. *Dupetor flavicollis* Lath. **Yellow-necked Bittern.**

*Ardea flavicollis*, Lath., Ind. Orn., 1790, II., p. 701.

*Ardea picata*, Raffl., Trans. Linn. Soc., XIII., p. 326.

*Ardea bilineata*, Cuv., Mus. Paris.

*Ardeiralla flavicollis*, Salva., Ucc. Born., 1874, p. 353; Oates, Journ. Straits Branch As. Soc. B. 1990, III., p. 251.

*Dupetor flavicollis*, Hein. & Reichen., Nomencl. Mus. Hein., 1890 (Sumatra), p. 308; Sharp, B. B. O., Club, XXXI., p. 31; *Id.*, Cat. B. Brit. Mus., XXVI., p. 247.

Only one specimen of this large bittern was seen. This was shot near the Agaña river June 11, 1900, and proved to be a full

grown female (Bishop Museum No. 8986). Length 22.25, spread of wings 28, wing 8.15, tail 2.92, tarsus 2.43, culmen 3.00, its depth at nostrils .57, mid-toe and claw 2.86. General color of the upper surface olive brown with a slight rufous tint, the under coloring of feathers slate; wings and tail slate; sides of face and cheeks black, mottled with rufous; sides of neck with bands of bright golden straw color; chin and under throat yellowish, with a line of dusky brown feathers extending down the center and broadening out to form the prettily variegated coloring of the under neck and fore breast, which have a general coloring of rufous brown with feathers edged with whitish black and buffy, giving the fore breast a streaked appearance; feathers of belly with under coloring of slate, but the outer half is brownish broadly edged with yellowish, which gives to the under surface a dirty yellowish and brownish appearance; sides and rump slaty; thighs and tibio-tarsus rufous; bill dusky above, lighter below; feet a dirty brownish; eyes yellowish. *Hab.* Philippine Islands, China, Burmah, Java, Borneo, Celebes, Sumatra, Malay peninsula, India and Ceylon. This is the first record of this species from Guam.

#### GENUS **ARDETTA** GRAY.

#### 17. *Ardetta bryani*,\* spec. nov. **Kakak. Bittern.**

This little bittern is found in abundance along the streams and in the reedy marshes; taro patches and rice paddies are also its favorite feeding grounds. The native name of Kakak is a very good imitation of the cry it makes as it flies up when disturbed. The coloring of this bird blends so well with its surroundings that it takes very careful observation to see them, of which fact the birds seem well aware and remain perfectly still until they are almost stepped upon, when they fly up, calling out a loud "kaka-kakak". Their food is chiefly insects and their larvæ. Some of the specimens examined had their stomachs filled with black crickets. Eight specimens were secured, two adult males, two adult females, and four immature:—

<i>Museum</i> <i>No.</i>	<i>Date.</i>	<i>Length.</i>	<i>Wing.</i>	<i>Tail.</i>	<i>Tarsus.</i>	<i>Culmen.</i>	<i>Mid-toe</i> <i>and c.</i>	<i>Sex.</i>
9600	June 5	13.50	5.25	1.68	1.86	2.00	2.12	♀
9601	June 7	14.25	5.46	1.56	1.86	2.00	1.92	juv. ♂
9602	June 12	14.75	5.00	1.65	1.86	2.00	2.60	juv. ♂
9603	June 12	14.00	5.50	2.00	1.92	2.00	2.17	♂
9604	June 11	14.00	5.50	2.00	1.92	2.00	2.17	juv. ♀
9605	June 11	14.00	5.12	1.80	1.88	2.00	2.25	♂
9606	June 13	14.50	5.25	1.75	1.75	2.12	1.96	juv. ♀
9607	July 3	14.25	5.60	1.60	1.89	2.10	2.17	♂

The spread of the wings from tip to tip is about 19; the depth of the bill at nostril is .40. No. 9603 is type of species. The adult

\* This is probably the *Petit Heron*, Quoy & Gaim., *Voy. Uranie*, 1824, p. 35 (Guam). Also the bird called *Ardetta sinensis*, Oust., *Lé. Nat.*, 1889, p. 261 (Iles Mariannes); Hartert, *Nov. Zööl.*, V., p. 63; Sharp, *Cat. B. Brit. Mus.*, XXVI., p. 227.

males have the mantle, scapulars, lesser wing coverts and tertials a uniform reddish brown; anterior of mantle slightly darker, with a few feathers having dusky centers and rufous margins; forehead dusky with a slight mingling of rufous; crown and occiput black, the feathers forming a crest about three-quarters of an inch long; sides of head and neck rufous, the long frill-like feathers on the sides of the lower neck with a slight vinous tint; greater and middle wing coverts a light buff; primaries and secondaries slaty black, their under surface grayish, lighter at tips, the outer web of outer primary margined with buff; axillaries and under wing coverts pure white; bastard primary black with buffy outer web; primary coverts black; edge of wing white; tail feathers black, the upper coverts grayish with a slight rufous tint, under tail coverts buffy white; throat, under part of neck, and pendant feathers on under part of lower neck white with slight intermingling of buff; a buffy streak extending mesially down the chin and throat; sides of fore-breast with long dusky feathers having reddish buff margins; sides and belly white with a very slight tint of buff; thighs a buffy white; eyes golden yellow; feet and tarsus a yellowish green; bill dusky above, light below.

The adult female has more red mixed with the black of the crown and occiput, the lower feathers of the crest being entirely rufous with vinous tint; the feathers of the back with lighter margins; general upper surface a dark cinnamon color; the wing coverts are slightly darker than in the adult male, the median streak on the chin is more pronounced, and there seems to be more buffy coloring on the throat and under side of neck, the thighs show more buffy. Otherwise the sexes are identical.

The immature birds are characterized by the streaked appearance of the crown, caused by the black feathers being margined with red. The feathers of the mantle and rump are also a darker reddish brown than in the adult bird; the feathers of the wing coverts are brownish margined with buff, the inner webs being more or less gray, the outer web of the tertials showing a coloring of vinous red; the sides are a darker buff than in the adult and the feathers of the under surface are colored in the centre with reddish brown which gives the under neck, breast and belly a more streaked appearance; eye yellow; bill dusky above, and light below.

This species is closely allied to *Ardetta sinensis* (Gmel.), but is easily distinguished by the uniform reddish brown coloring of the upper surface, the yellowish green of the tarsus, the rufous tint of the upper tail coverts, and the smaller size, the shorter tarsus, and slightly longer culmen, as shown in the table given above. *Hab.* Marianas. Named in honor of my esteemed co-worker in the ornithology of Polynesia, W. A. Bryan, of the Bishop Museum.

GENUS **DEMIEGRETTA** BLYTH.**18. Demiegretta sacra (Gm.). Chuchuku. Reef Heron.**

*Ardea sacra*, Gm., Syst. Nat., I., p. 640; Finsch., Jour. Mus. Godef., VIII., p. 32; Sel., Challenger Exp., II., B., p. 31; Tristr., Ibis, 1882, p. 144 (Solomon Ids.).  
*Ardea jugularis*, Forst., Icon. ined. tab. 114; Hartl., J. f. O., 1853, p. 167 (Mariannæ Ids.); Sharp, P. Z. S., 1887, p. 516 (Christmas Id.).  
*Herodias grayi*, Gray, List. Grall. Brit. Mus., p. 80 (Aust.).  
*Demiegretta grayi*, Gould, Hand. B. B. Aust., II., p. 309.  
*Demiegretta sacra*, Wald., Ibis, 1873, p. 318; Grant, P. Z. S., 1888, p. 333; Sharp, Ibis, 1894, p. 245; Hart., Nov. Zool., V., p. 64; Cat. B. Brit. Mus., XXVI., p. 137.

The Reef Herons are not very abundant on the island, and they are extremely wild and difficult to approach. Three specimens were secured, one adult male and two adult females:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9585	June 10	25.00	11.50	4.00	3.25	3.37	2.90	♂
9587	June 11	24.00	11.00	3.35	3.50	3.12	2.60	♀
9588	July 14	24.00	11.00	3.68	3.00	3.30	2.86	♀

The spread of the wings is about 37.50, and the depth of the bill at the nostrils is .56. Sexes colored similarly. The general color of the adult is blackish slate; feathers of the crest and short back plumes tinged with gray in the fully adults; a white streak down the centre of throat, this streak in some specimens beginning between the gonys and extending three inches or more down the neck; in others the white streak begins on a line with the anterior of eye and is only about one inch in length. Specimens almost adult have scattered feathers of a dirty buffy white among the slaty plumage of the mantle, neck, and wing coverts; bill dark above and at the tip, under mandible dusky yellowish; feet and tarsus dusky yellowish green with dark splotches on the front of the tarsus; eye golden yellow. *Hab.* Australia, Pacific islands, Burmah, Malay peninsula, Korea, Bay of Bengal, Japan and China.

Order **PALUDICOLÆ**.—Rails, Coots, Etc.

Hind toe above the level of the others, toes long and slender, wings less than 10. Family *Rallidæ*, Rails.

**a<sup>1</sup>.** Without frontal shield.

**b<sup>1</sup>.** Length about 11, barred with black and white on the under surface, wing more than 3.9. Genus *Hypotaenidia*.

**b<sup>2</sup>.** Length about 7, under surface gray, not barred, wing 3.39 or less. Genus *Poliolimnas*.

**a<sup>2</sup>.** With a frontal shield.

**b<sup>1</sup>.** Middle toe longer than the tarsus, no webs or lobes on the toes, wing 6.92 or less. Genus *Gallinula*.

**b<sup>2</sup>.** Toes with lobes on the sides, wing 7.70–8.30. Genus *Fulica*.

GENUS **HYPOTÆNIDÆ** REICHENBACH.**19. Hypotænidia oustini** Oustalet. **Koko. Oustalet's Rail.***Hypotænidia marchei*, E. Oustalet, Arch. Mus. Paris (3), 1896, VIII., pp. 32-34.

General color above olivaceous brown; no white spots on mantle or back. In No. 9540 the ends of the feathers on the back of the neck are so worn that they give the appearance of yellowish markings to this region; rump brown; greater wing coverts uniform with the coloring of the mantle; lesser and median wing coverts barred with black and white; primaries, secondaries and tail feathers barred with black and white. This marking on the tail feathers, however, varies considerably. In No. 9536 the tail feathers are almost uniform ochraceous brown with but a few white dots on the webs; top and sides of head uniform with coloring of the mantle; but in No. 9531, however, they are a shade darker than the mantle. A sharply defined superciliary stripe of ashy gray extending from near the base of bill to the sides of nape, the anterior part of this stripe narrow and white. With the exception of this stripe the coloring of the sides of head and neck are uniform with mantle. Beginning sharply on a line with the gape and extending to the shoulders is the plumbous gray of the under neck and breast, merging into white on the chin. Two of the specimens, Nos. 9537 and 9540, show a slight trace of rufous in this plumbous gray of the fore breast. Beginning at the fore breast and extending over the entire under surface of the body, including flanks and under tail coverts, the bird is barred with black and white, these bars especially large and distinct on the flanks, while on the belly they are narrow and not so marked; bill dusky; feet grayish with brownish cast; iris an Indian red. I find no difference in the coloring of the sexes. No. 9538, a fledgling three inches in length, is covered with a uniform sooty black down; bill and feet dusky; eyes dark brown. This bird is closely allied, if not identical with *R. philippinas*. It seems, however, to be a little larger, and without the rufous coloring on the flanks. *Hab.* Marianas.

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Cuimen.	Mid-toe and c.	Sex.
9536	June 24	11.50	4.48	2.06	2.84	1.37	1.84	♀
9537	June 23	13.00	5.18	2.19	2.86	1.62	2.12	♂
9539	July 9	11.00	....	1.68	1.95	1.50	1.55	♀
9540	July 15	11.50	4.50	2.00	2.00	1.50	2.10	♀

GENUS **POLIOLIMMAS** SHARP.**20. Poliolimmas cinereus** Veill. **Gray Rail.***Porphyrio cinereus*, Veill., Nouv. Dict., 1819, XXVIII., p. 29.*Poliolimmas cinerea*, Sharp, Bul. Brit. Orn. Club, 1893, V., p. 28.

The natives call this bird the Koko, the same name they give to the big Oustins Rail, and they regard it as the young of the

latter, which is not at all the case, as the specimen I secured of *P. cinereus* was a fully adult female, with eggs almost ready for laying. These birds are quite rare, and the only specimen I secured was a female which had been snared by some native boys in a sweet potato patch near the Agaña river. General color above olive brown; on top of head the middle of feathers black, with the edges olive brown; a slight intermingling of ash gray showing on the sides of the crown; back of neck olivaceous green; feathers of back with broad black centres and edges of light buffy brown; lores and a small spot at base of gonys black; cheeks, sides of neck, and under neck ash gray merging into white on the chin; a narrow white superciliary stripe which broadens to the base of the upper mandible; a white stripe on the upper edge of cheek extending from chin to ear coverts; cheeks, ear coverts, sides of throat, fore neck, breast, and sides of body ash gray; flanks a buffy brown; belly white; under tail coverts buff; upper tail coverts dusky; under wing coverts and under side of quills ash; axillaries dusky; bastard wing, primary coverts, and quills a light brown; ash below; first primary with outer web whitish; feet yellowish with tint of greenish; eye carmine; bill dusky above, lighter below, with a tint of greenish yellow on the tip of both mandibles. Length 6.50, wing 3.60, extent of wing 11, tarsus 1.30, culmen .75, its depth at nostrils .25, mid-toe and claw 1.83. *Hab.* Guam.

#### GENUS *GALLINULA* BRISSON.

##### 21. *Gallinula chloropus* Lath. *Pulatel.* *Gallinule.*

The Water Hen or Moor Hen, Albin, Nat. Hist. B., 1738, II., p. 66, pl. 72.

*Fulica chloropus*, Linn., Syst. Nar., 1766, I., p. 258.

*Gallinula chloropus*, Lath., Ind. Orn., II., p. 773; Steere, List of Mamm. and B. Philip., 1896, p. 258; Hartert, Nov. Zool., V., p. 62.

This bird is abundant in the marshy grounds and taro patches all over the island; it is highly prized by the natives for food. General color a bluish slate, with mantle, rump, wing coverts and upper tail coverts a beautiful olive brown; scapulars like the mantle; primary and secondary quills blackish brown; outer primary and bastard wing feathers externally edged with white; tail feathers blackish; crown and face blackish with a slight blueish tint, which fades into a lighter slaty blue on the neck and fore breast, and extends over the entire under surface of the body; posterior part of belly with a still lighter grayish tint, while in some specimens this part is almost pure white (immaturity). A few white feathers on the sides and flanks; under tail coverts white, with the feathers of the vent and the long median tail coverts black; frontal shield and two-thirds of the bill a deep lake red, anterior third a bright greenish yellow; tarsus lemon yellow; garter of rich lake red followed by a band of lemon yellow just above the knee; joint of the tarsus greenish; toes dusky with a slight tint of yellowish; iris reddish. No. 9595, an immature male, has the feathers

of the back of a decided brownish cast; wings and tail dusky; top of head and back of neck brown, more or less mixed with gray on sides of head, face, and neck; chin, throat, lower third of cheeks, and the belly white; the remaining under parts a mingling of white and pale slaty blue; shield much restricted and dusky in color; upper mandible dusky; lower mandible, and tip of upper, with a slight shade of yellowish; legs and feet without the red coloring, but the front scales colored a bright lemon yellow. Quite a lot of grass and remains of insects and larvæ were found in the stomachs of these specimens. *Hab.* Europe, Africa, Asia, and many Pacific islands. Guam.

<i>Museum No.</i>	<i>Date.</i>	<i>Length.</i>	<i>Wing.</i>	<i>Tail.</i>	<i>Tarsus.</i>	<i>Culmen.</i>	<i>Mid-toe and c.</i>	<i>Sex.</i>
9595	June 7	11.31	5.55	2.12	1.86	1.18	2.75	juv. ♂ + + + +
9594	June 5	12.25	6.31	2.50	2.00	1.62	2.50	
9596	June 9	11.75	6.50	2.77	1.80	1.50	2.68	
9597	June 11	12.50	6.37	2.26	2.00	1.68	2.75	
9598	June 13	12.50	6.92	3.00	1.86	1.68	3.00	
9599	June 13	12.50	6.92	3.00	1.86	1.68	3.00	♂

The spread of the wings from tip to tip is about 18.50, and the depth of the bill at the base is about .37.

#### GENUS **FULICA** LINNÆUS.

#### 22. **Fulica atra** Linn. **European Coot.**

General color slaty, bill and frontal shield whitish, edge of wing and edge of first quill whitish. Length 16, wing 7.70-8.80, culmen 1.70-2, tarsus 2.25-2.35, mid-toe and claw 2.85-3.15. *Hab.* Europe and Asia, ranging south to the Philippines and Pacific islands; accidental on Guam.

### Order LIMICOLÆ.—Shore Birds.

**a<sup>1</sup>.** Tarsus transversely scutellate, culmen longer than middle toe without claw. Family *Scolopacidæ*, Snipes, Sandpipers.

**a<sup>2</sup>.** Tarsus with small hexagonal or irregular scales in front, bill shorter than tarsus, nasal openings reaching beyond the basal fourth of the bill. Family *Charadriidæ*, Plovers.

**a<sup>3</sup>.** Tarsus slightly longer than culmen, lower back and rump white with a black band. Family *Aphrizidæ*, Surf Birds and Turnstones.

#### FAMILY **SCOLOPACIDÆ**.—SNIPES

**a<sup>1</sup>.** No hind toe. Genus *Calidris*.

**a<sup>2</sup>.** Hind toe present.

**b<sup>1</sup>.** Culmen thickened at tip, thighs naked, tarsus not so long as mid-toe and claw. Genus *Gallinago*.

**b<sup>2</sup>.** Culmen longer than mid-toe and claw, tip of bill not decurved, under primary coverts white, toes cleft to the base. Genus *Tringa*.

**b<sup>3</sup>.** Culmen longer than tarsus, lower parts white, chest streaked or spotted with dusky, tail barred with grayish or dusky. Genus *Totanus*.

**b<sup>4</sup>.** Wing 6.5 or more.

**c<sup>1</sup>.** Wing about 8, bill decidedly arched or decurved. Genus *Numenius*.

**c<sup>2</sup>.** Wing about 6, tarsus equal to the hind toe and claw, axillars grayish, no web between inner and middle toes at base, bill grooved for at least half its length. Genus *Heteractitis*.

**c<sup>3</sup>.** Wing 7 or more, terminal part of bill smooth and hard, culmen 3 or more, no white on wings. Genus *Limosa*.

#### GENUS **GALLINAGO** LEACH.

##### **23. Gallinago megala** Swinh. **Snipe.**

General color above blackish striped with sandy isabelline, breast and abdomen white, a red subterminal band on the tail, tail feathers 20. Length 9.5, culmen 2.3, wing 5.4, tail 2.15, tarsus 1.35. *Hab.* Eastern Siberia, wintering in the Philippines, Borneo and the Moluccas; in the Marianas during migrations.

#### GENUS **TRINGA** LINNÆUS.

##### **24. Tringa acuminata** (Horsf.). **Sharp-tailed Sandpiper.**

Legs and feet pale, wings from the carpal joint more than 4.76, the shafts of the quills for a portion of their length are white; top of head is rusty, with streakings and fleckings of dusky; fore neck and chest buff broadly streaked and splotched with dusky; rest of the lower parts white. Length 7.50-8. wing 4.90-5.50, culmen .95-1.05, tarsus 1.10-1.25. *Hab.* West coast of America, islands of the Pacific from Australia to Alaska; Guam during migrations.

#### GENUS **CALIDRIS** CUVIER.

##### **25. Calidris arenaria** Linn. **Sanderling.**

General under color white, above light rusty (to ash gray in winter), greater wing coverts broadly tipped with white. Length 7-8.50, wing 4.70-5, culmen .95-1, tarsus .95-1.05, mid-toe and claw .55-.60. *Hab.* Circumpolar; breeds on all coasts of the Arctic ocean, south in winter to Malay archipelago, and Pacific islands; Guam during migrations.

GENUS **LIMOSA** BRISSON.**26. Limosa lapponica baueri** (Naum.). **Pacific Godwit.**

General color of the hind neck and the lower parts plain cinnamon, back and scapulars varied with blackish, whitish and rusty; in winter head, neck and lower parts whitish; the head and neck streaked, the breast and sides slightly barred with grayish brown. Length 14.60-16, wing 8.25-9.15, culmen 3.15-4.70, tarsus 2-2.45, mid-toe and claw 1.10-1.33. *Hab.* Coasts of western Asia and Alaska, south in winter to Australia; Guam during migrations.

GENUS **TOTANUS** BECHSTEIN.

**a<sup>1</sup>.** Wing under 6, central upper tail coverts white. *Totanus glareola*.

**a<sup>2</sup>.** Wing under 6, no white on rump or upper tail coverts. *Totanus hypoleucus*.

**27. Totanus hypoleucus** Linn. **Common Sandpiper.**

General color a bronzy brown, the feathers with arrow-shaped markings of black; under parts white, with dusky streaks on the throat. Length 8, culmen 1.1, wing 4.1, tail 2, tarsus .89-.96. Female smaller and not quite so well marked. *Hab.* Europe and Asia; Guam during migrations.

**28. Totanus glareola** Temm. **Wood Sandpiper.**

General color above bronze brown, with light ash bronze margins to the feathers; belly white. Length 8.5, culmen 1.15, wing 4.6, tail 1.85, tarsus 1. *Hab.* Europe, Africa, China, Burmah, Malay archipelago; Guam in migrations.

GENUS **NUMENIUS** BRISSON.

**a<sup>1</sup>.** Length about 15, bill less than 4, lower back and rump mottled with bars and spots of brown. *Numenius phaeopus variegatus*.

**a<sup>2</sup>.** Length about 22, bill more than 4, tarsus more than 3. *Numenius cyanopus*.

**29. Numenius phaeopus variegatus** Scop. **Oriental Whimbrel.**

Adult bird has a pure white lower back, but the immature birds are streaked with dusky; the crown is a plain brown with a pale mesial streak; lower back much paler than the mantle. Length 15, culmen 3, wing 8, tarsus 2.15. *Hab.* Asia. In migrations it is common in China, Japan, Burmah, Ceylon and Pacific islands; Guam during migrations.

**30. Numenius cyanopus Vieill. Australian Curlew.**

General color brown, much streaked and blotched; coloring of the rump uniform with the back. Length 21-24, bill 6.8-7.2, wing 11.9-12.5, tail 4-4.6, tarsus 3.2-3.5. *Hab.* Breeds in Siberia; winters in Australia, Borneo, Tasmania, and Malay peninsula.

GENUS **HETERACTITIS** STEJNEGER.**31. Heteractitis brevipes Vieill. Asiatic Wandering Tattler.**

*Heteractitis brevipes*, Vieill., N. Dict. d'Hist. Nat., 1816, VI., p. 410.

*Totanus polynesia*, Peale, Zool. U. S. Exp. Exped., 1838, B. p. 237.

*Totanus incanus brevipes*, Seeb. Geog. Dist. of Charad., p. 361.

*Totanus incanus*, Wilson, Aves Hawaiienses, p. 151; Hartert, Nov. Zool., V., p. 65; Oust., II., p. 41.

*Heteractitis brevipes*, Grant, Cat. B. Brit. Mus., XXIV., p. 449.

Specimens of the Wandering Tattler were shot during the months of June and July. They were very scarce and wild, and consequently hard to take. Their notes and habits seemed identical with the American form. The upper coloring of the male is a uniform ashy gray; the rump and tail coverts a shade lighter gray, the latter with indications of cross markings near the tips; primary quills dusky, secondaries gray; tail feathers uniform gray; crown brown, with whitish superciliary stripe which extends to and around the base of the upper mandible; lores dusky; cheeks grayish; throat white. In specimen No. 9524 the sides, under neck and breast are grayish, without cross markings of any kind; the belly, under tail coverts, and flanks are pure white; sides grayish. In No. 9525 the under neck, breast, sides, flanks and lower belly is profusely spotted and barred with dusky gray. Length 10-10.50, wing 6-6.20, tail 2.73-2.75, tarsus 1.16-1.17, culmen 1.43-1.45, mid-toe and claw 1.16. *Hab.* From eastern Siberia and Kamchatka, through Japan and China to Malayan archipelago, Papuan Islands, Marianas and Australia.

FAMILY **CHARADRIIDÆ**.—PLOVERS.

**a**<sup>1</sup>. Wings less than 8, plumage without metallic tint, head without crest. Genus *Charadrius*.

**b**<sup>1</sup>. Axillars black. — *Charadrius squatarola*.

**b**<sup>2</sup>. Axillars smoky gray, or ash gray. *Charadrius fulvus*.

**b**<sup>3</sup>. Axillars white, length 7. *Charadrius mongolicus*.

GENUS **CHARADRIUS** LINN.**32. Charadrius squatarola (Linn.). Black-bellied Plover.**

General color black, upper parts irregularly spotted with dusky and whitish, except on the forehead and a line which is pure white to the sides of the breast; in winter the lower parts are white.

Length 10.50-12, bill 1.10, wing 7.50, tarsus 1.95, mid-toe and claw 1.15. *Hab.* Northern parts of the northern hemisphere, south in winter to the Pacific islands.

### 33. *Charadrius fulvus* Gm. **Dululi. Asiatic Golden Plover.**

*Charadrius fulvus*, Gmelin, Syst. Nat., 1788, I., p. 687; Seebohm, Geog. Dist. of Charad., p. 99; Rothschild, Avifauna Laysan, I., p. 11; Hartert, Nov. Zool., V., 66; Oust. II., p. 46.  
*Charadrius dominicus fulvus*, Raffl., Trans. Linn. Soc., XIII., p. 328; Ridge. Pro. U. S. Nat. Mus., 1880, p. 198.  
*Charadrius dominicus*, Sharp, Cat. B. Brit. Mus., XXIV., p. 191.

The Asiatic Golden Plover was common, both in the inland valleys and along the sea shore, all during the summer months. Many of the specimens were fine adults, with organs in erotic state; the greater number, however, were immature birds. I was informed by a resident sportsman that these birds arrived in great flocks during the fall and spring months. A fine series was secured. Seven specimens with plumage graduating from adult to immature, but apparently full grown birds, give the following measurements:

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Cuimen.	Mid-toe and c.	Sex.
9517	June 9	9.50	6.25	2.42	1.75	.90	1.26	♂
9518	July 2	9.50	6.60	2.35	1.60	1.00	1.25	♂
9519	July 2	9.50	6.31	2.37	1.57	.98	1.21	♂
9520	July 2	9.50	6.11	2.31	1.59	.95	1.27	♂
9521	July 2	9.40	6.35	2.31	1.70	.95	1.27	♂
9522	July 2	9.50	6.27	2.35	1.63	.95	1.25	♂
9523	July 15	10.25	6.35	2.56	1.75	.92	1.26	♂

General color above (adult males) mottled with black, golden buff and whitish; primaries and secondaries dusky, the shafts of the primaries brown followed by white near the end and tipped with dusky; a frontal band and a distinct eyebrow of white, this white line extending down the sides of the neck to the white on the sides of the body; general under color black, with a few feathers showing buffy or white; axillaries smoky brown; bill and feet dark; tarsus a dusky gray; eye dark brown. *Hab.* (Seebohm) "Breeds on the tundras of eastern Siberia, from the valley of the Yenisei to the Pacific. It passes through Japan, South Siberia, and Mongolia on migrations, and winters in India, Burmah, China, islands of the Malay archipelago, Australia, and the islands of the Pacific, east to New Zealand, west to Heligoland."

### 34. *Charadrius mongolicus* Pall. **Mongolian Sand Dotterel.**

*Charadrius mongolicus*, Pallas, Zoogr. Rosso-Asiat., 1826, II., p. 136; Seebohm, Geog. Dist. of Charad., p. 147; Hartert, Nov. Zool., V., p. 66; Oust., II., p. 48.  
*Egialitis mongolicus* (Pall.), Swinhoe, Ibis, 1870, p. 360.  
*Ochthodromus mongolus*, Sharp, Cat. B. Brit. Mus., XXIV., p. 223; Hall, Key to B. Aust., 1899, p. 82.

This bird was very scarce on Guam during the months of my stay (May and August). Only one specimen was seen, which proved to be an adult female, No. 9526. The general color above

is a worn light brown with a slight trace of olive green; there is but a slight trace of the rufous color on the fore breast; under parts white; lores dusky; tarsus dark grayish; bill dark; eye dark hazel. Length 7, spread of wings 15, wing 5.06, tail 2.00, tarsus 1.25, mid-toe and claw .95, culmen .63, the terminal vault .33. *Hab.* (Seeb.) "The Mongolian Sand Plover breeds in Asia from eastern Turkestan to the valley of the Amoor, and winters on the coasts from the mouth of the Red Sea to the islands of the Malay archipelago and Australia. Guam.

FAMILY **APHRIZIDÆ**.—SURF BIRDS AND TURN-  
STONES.

GENUS **ARENARIA** BRISSON.

**35. Arenaria interpres** (Linn.). **Black Turnstone.**

General color dusky, upper parts varied with rufous or white, throat white, head chiefly white, chest black. Length 9–9.90, wing 6, culmen .80–.90. *Hab.* Cosmopolitan, Pacific islands in winter; accidental on Guam.

Order **GALLINÆ**.—Gallinaceous Birds.

**a<sup>1</sup>.** Hind toe elevated, nostrils never hidden by feathers, tarsi partially or entirely naked. Family *Phasianidæ*.

**b<sup>1</sup>.** Tail feathers 8, tarsi without spurs. Genus *Excalfactoria*.

**b<sup>2</sup>.** Tail feathers 14–16, a comb and spurs present. Genus *Gallus*.

**a<sup>2</sup>.** Hind toe on a level with the others, oil glands nude, upper tail coverts not reaching to the end of the tail feathers. Family *Megapodiidæ*.

**c<sup>1</sup>.** No white on the basal part of the primaries, head French gray. Genus *Megapodius*.

GENUS **EXCALFACTORIA** BONAPARTE.

**36. Excalfactoria sinensis** (Gm.). **Bing-bing. Pigmy Quail.**

These little birds were introduced from Manila in 1894 by Captain Pedro Duarty, of the Spanish Army, and are now very

generally distributed over the island. Their favorite feeding grounds seem to be the dry rice paddies and the grassy places on the hill sides. Two specimens, a male and a female, and one set of seven eggs were secured. The size of this little quail is as follows: Total length 5, wing 2.75, tail 1.00, tarsus .80, culmen .43, mid-toe and claw .78. The eggs (Fig. 1, *a.*) are of an enormous size for so small a bird, measuring  $1 \times .80$ ; they are shaped like the

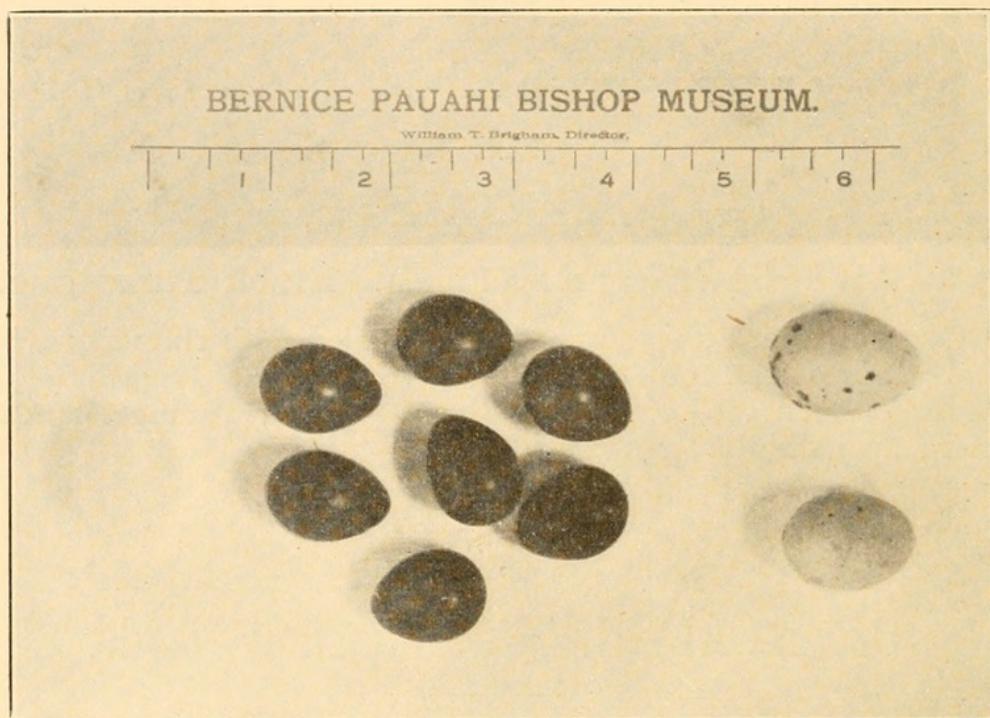


FIG. 1.

*a.* *Excalfactoria sinensis* (Gm.).*b.* *Aplonis kittlitzii*, F. P. H.

eggs of the common quail of the eastern United States, and are of a brownish color deeply sprinkled over the entire surface by fine deeper brown dots. *Hab.* Philippines, Palawan, Borneo, Java, Sumatra, Australia and Guam.

#### GENUS **GALLUS** LINN.

#### 37. **Gallus bankiva** (Temm.). **Jungle Fowl.**

General under color black glossed with green; mantle orange; scapulars, median wing coverts and lower back a dark maroon red; comb emarginate; a wattle on each side of the throat. Length 29, wing 9.5, tail 14, tarsus 3.1. *Hab.* Marianas, Philippines, Palawan, Celebes Islands; also in India, China, Siam, Java, and Malay peninsula.

GENUS **MEGAPODIUS** QUOY & GAIMARD.**38. Megapodius laperousi** Quoy & Gaim. **Megapode.**

Head French gray, mantle and under parts grayish black shading into a dark olive brown on the wings, bill and legs yellow, naked skin on head red. Length 9.5, wing 7, tail 2.3, tarsus 2. *Hab.* Marianas and Pelew Islands.

## Order COLUMBÆ.—Pigeons.

**a**<sup>1</sup>. Tarsus feathered for more than half its length, general color green, wings less than 5.19. Family *Treronidæ*, Fruit Pigeons.

**b**<sup>1</sup>. Forehead and a spot at the base of the lower mandible purple-red. Genus *Ptilinopus*.

**a**<sup>2</sup>. Tarsus not feathered more than half its length, wing more than 5.19, general color brown or gray. Family *Peristeridæ*, Ground Pigeons.

**c**<sup>1</sup>. General color brown or olive bronze, length of tail 4 or less. Genus *Phlogænas*.

**c**<sup>2</sup>. General color gray, length of the tail more than 5. Genus *Turtur*.

GENUS **PTILINOPUS** ELLIOT.**39. Ptilinopus roseicapillus** (Less.). **Totot. Rose-crowned Fruit Pigeon.**

*Columba roseicapilla*, Less., Tr. d'Orn., 1831, p. 472.

*Columba purpurata* Kittl. (nec. Gm.), Kupfertaf., 1833, Haft. III., p. 25, t. XXXIII., f. 2.

*Ptilopus roseicapillus*, Ost., Le Natural, 1889, p. 261; Wieglesw., Ibis, 1889, p. 584; *Id.* Aves Polynes., 1891, p. 48.

*Ptilinopus roseicapillus*, Hartert, Nov. Zool., 1898, V., p. 60; Salvadori, Cat. B. Brit. Mus., XII., p. 108.

The Totot, as the natives call this beautifully colored fruit pigeon, is common on the island, and its loud peculiar notes can be heard at almost any time of day from the tall trees along the roadside or in the forest, beginning in a low tone and slow, gradually increasing in volume and rapidity, and then dying away again, like *tot---tot---tot--tot-tot-tot-tot-tot--tot---tot---tot*, and like most of the birds probably gets its native name from the sound it makes. In making this sound they bend the head down so that the bill touches the lower breast, and the top of the neck has the appearance of being puffed up. One kept in a cage some time fre-

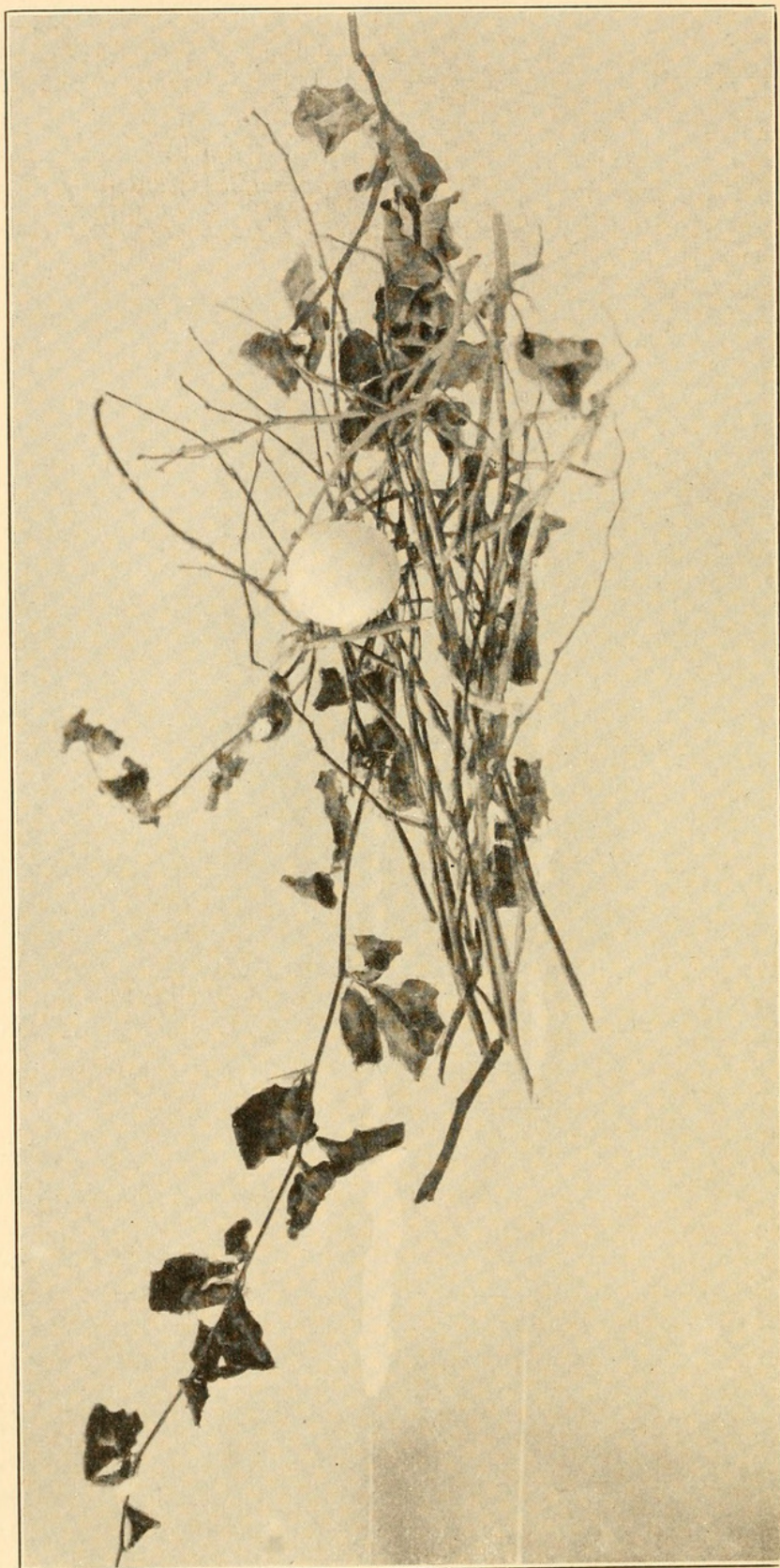


FIG. 2. PTILINOPUS ROSEICAPILLUS (LESS.).

quently made this sound at night. These birds are much hunted by the natives for food, and one would think that they would be very easily seen because of their bright coloring. Such, however, is not the case, for when among the green leaves of the breadfruit trees, which seem to be their favorite haunts, their coloring harmonizes so well with the leaves that they are very difficult to see. Their food consists of wild berries and fruits, all the stomachs containing seeds of the *Linovia trifoliata*. The general color above is a bright green; crown, forehead, and spot at the base of the lower mandible purple-red, margined behind with yellowish; primaries and secondaries green with a glossy reflection, the inner webs purplish, the secondaries margined with a slight line of yellowish; wing coverts green, the greater coverts margined with yellowish; scapulars purplish, margined with yellowish green; chin and throat a yellowish white; sides of head and neck grayish green; breast greenish, with the feathers tipped with pearly gray; a bright purple patch on the middle of lower breast, surrounded by a zone of greenish and orange; belly orange, greenish along the sides; vent and tip of feathers on thigh yellowish; under tail coverts yellowish orange; upper tail feathers green, with a broad yellowish gray distal band margined narrowly with yellow; under coloring of wings and tail gray, the tail feathers showing white markings on the inner webs near the end; under wing coverts gray with a slight mingling of green; bill a pea green; feet and tarsus a dark gray with a tint of purplish; iris gold yellow. I find no difference in the coloring of the sexes. Six specimens selected at random give the following measurements:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9488	May 29	9.00	5.00	2.94	1.00	.55	1.19	♂
9489	June 1	9.00	5.14	3.00	.96	.56	1.14	♂
9495	July 11	9.05	4.92	3.00	1.03	.50	1.06	♂
9496	July 11	9.00	4.90	3.00	1.00	.50	1.15	♂
9497	July 20	8.95	5.00	3.00	1.03	.50	1.16	♂
9498	July 20	4.00	2.90	1.00	.75	.57	1.16	fledgl.

The spread of the wings from tip to tip is about 15.25, and the depth of the bill at the nostrils is about .17. The immature, No. 9498, has no red on the head or crown; general upper coloring green with the feathers edged with yellowish; no dark spot on the breast; feathers of the belly yellowish; bill grayish; feet flesh color with a tint of pink; eye light hazel.

Two nests, each containing one egg, were found. These were crude flat structures, constructed of twigs about the size of a knitting needle, very loosely put together and placed on the top of a small branch of the *Triphasia aurantiola*, eight or ten feet from the ground, and how the egg is kept from rolling out when the wind blows is more than I can understand. (See Fig. 2.) The eggs are pure white and look like the eggs of the domestic pigeon. Their size was 1.31 × .85 and 1.12 × .80. *Hab.* Guam, Saipan, Rota.

This bird is somewhat similar to *P. ponapensis*, from Ponape, but the latter has more lilac on the crown and no red at the base of the lower mandible; it is also lighter gray on the neck, and the band on the tail is yellowish in Ponape specimens.

#### GENUS **PHLOGOENAS** REICHENBACH.

#### 40. **Phlogoenas xanthonura** (Temm.). **Poloman kanau.** **White-headed Pigeon.**

*Columba pampusan*, Quoy & Gaim., Voy. Uran. Zool., 1824, p. 121, pl. 30.

*Columba xanthonura*, Temm., Pl. Col. 190 (liv. 32, 1823).

*Peristera erythroptera* (part), Cass., U. S. Exp. Ex. Birds, 1853, p. 277.

*Phlegoenas pampusan*, Cat. Brit. Mus., 1893, XX., p. 602; Wigglesw., Aves. Polynes., p. 55.

*Phlegoenas xanthonura*, Hartert, Nov. Zool., 1898, V., p. 60.

These pigeons are common all over the island. Sixteen specimens were secured,—6 adult males, 1 immature male, 8 females, and 1 fledgling. The adult males have the forehead, cheeks, superciliary region, throat and breast pure white; crown, back of neck and ear coverts a rusty rufous. In fully adult breeding birds there is a slight wash of buff on the nape, as in No. 9511; remainder of upper parts olive bronze; anterior part of mantle and the wing coverts with a rich lustre of purple-violet; primaries brown; quills dark; mid-tail feathers brown, the lateral one grayish black with a broad sub-terminal band of black; belly and under tail coverts brown, with some of the feathers slightly tipped with rufous; feet brown, with a slight pinkish tint; bill dark; eye dark hazel. The adult female (type of *Columba pampusan*) has no white coloring at all, the entire body being a uniform rufous brown with a distinct olive lustre on the back; forehead, crown and nape cinnamon; feathers of wing coverts and belly edged with rufous; tail rufous, with a broad sub-apical black band which is not so distinct on the two central feathers; feet brown; eye dark hazel; bill a brownish flesh color. The immature males have a number of dirty white feathers appearing on the breast and throat; sides, top of head and neck deep brown, with an intermingling of a few rufous feathers; the lesser and middle wing coverts with the splendid purple-violet coloring of the adult male, No. 9505; the feathers of the middle wing coverts are tipped with rufous; bill dusky, with a slight greenish cast; feet brown, with a pinkish tint; eyes dark hazel.

These pigeons seem to prefer the deep jungle, from whence their deep low moan, like the sound of a man dying in great distress, comes with a wierd uncanny effect, heightened by the gloom and darkness of the unknown forest. This sound, which always seems to come from a long distance, is very misleading, and one is considerably surprised to find he is perhaps within a few feet of the bird. Their food consists chiefly of the fruit of the Lemonceti (*Triphasia aurantiola*) and a small berry, called by the natives

"Tintan-china, one of the Ink-berries, a species of Privet. Both of these are found in abundance all over the island. Six typical specimens give the following measurements:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9503	June 4	11.00	6.00	4.00	1.25	.75	1.62	♂
9505	June 11	10.50	5.55	3.75	1.36	.68	1.50	juv. ♂
9506	June 13	11.00	5.95	3.80	1.50	.75	1.25	♀
9513	June 13	10.05	5.62	3.96	1.25	.71	1.25	♂
9508	June 13	9.75	5.30	3.50	1.43	.62	1.25	juv. ♀
9510	June 15	9.75	5.19	3.50	1.25	.65	1.37	♀

It will be seen by this that the female is slightly smaller than the male. *Hab.* Marianas.

### GENUS **TURTUR** SELBY.

#### 41. **Turtur dussumieri** (Temm.). **Paloman halum-tano.** **Pigeon.**

*Columba dussumieri*, Temm., Pl. Col. 188 (liv. 32, 1823), Manila.

*Colombe dussumier*, Quoy & Gaim., Voy. Uran. Zool., 1824, I., p. 35.

*Turtur dussumieri*, Salvadori, Cat. Brit. Mus. B., XXI., p. 423; Wiglesw., Aves Pol., p. 54; Hartert, Nov. Zool., V., p. 60.

These birds were probably introduced at an early date from Manila, and they are now (June, 1900) the most abundant *Columbæ* on the island. They are esteemed by the natives as an article of food, and are consequently hunted a great deal. *Hab.* N. E. Borneo, Philippines, Marianas. Three specimens were secured,—one male and two females. Their measurements were as follows:

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9499	June 8	12.00	6.60	5.60	1.00	.70	1.43	♂
9500	June 8	11.25	6.00	6.00	1.00	.70	1.37	♀
9501	June 14	12.00	6.36	5.12	1.00	.62	1.30	♀

## Order RAPTORES.—Birds of Prey.

**a<sup>1</sup>.** Without facial disk of radiating feathers, toes not feathered, plumage compact. Family *Falconidæ*.

**a<sup>2</sup>.** With a facial disk of radiating feathers surrounding the eye, toes feathered, cere more or less hidden by bristles, plumage soft and fluffy. Family *Bubonidæ*.

### FAMILY **FALCONIDÆ**.—HAWKS, FALCONS, ETC.

**a<sup>1</sup>.** Culmen greater than half the length of the middle toe without claw. Genus *Astur*.

**a<sup>2</sup>.** Culmen measured from margin of cere less than half the length of the middle toe without claw. Genus *Accipiter*.

GENUS **ASTUR** LACÉP.**42. Astur sharpi** Oust. **Sharp's Hawk.**

One specimen of this species was brought back by the Astrolabe expedition, but it may not have been from the Marianas. I made special efforts to find this hawk, but without success. It probably is not found on Guam. *Hab.* Marianas(?).

GENUS **ACCIPITER** BRISSON.**43. Accipiter nisoides** Blyth. **Variegated Hawk.**

One specimen of this species was taken on Guam by Mr. Ouston's Japanese collectors. No rufous collar, ear coverts gray, no white spot on the central tail feathers, breast rufous. Length 11, culmen .75, wing 6.6, tail 5.1, tarsus 1.9. Female is slightly larger. *Hab.* Eastern Asia, Indo-Malayan sub-region, Northern China, Papuan Islands; incidentally on Guam.

FAMILY **BUBONIDÆ**.—HORNED OWLS.

Wings more than 10, cere equal to the chord of the culmen, ear openings very large. Genus *Asio*.

GENUS **ASIO** BRISSON.**44. Asio accipitrinus** (Pall.). **Short-eared Owl.**

It is very doubtful if there has ever been an owl taken on the Marianas. It is not found on Guam. (See Nov. Zool., V., p. 51.)

Order **COCCYGES**.—Kingfishers, Etc.

**a**<sup>1</sup>. Bill with rounded or slightly flattened culmen, third toe united with the fourth for more than half its length, the second united to the third for its basal third, bill not serrated, caeca none. Family *Alcedinidæ*.

**b**<sup>1</sup>. Tail longer than bill, with a more or less distinct groove along the sides of the culmen, bill compressed. Genus *Halcyon*.

**c**<sup>1</sup>. Head white, flanks pure white, a band of green behind the eye and around nape. *Halcyon albicilla*.

**c**<sup>2</sup>. Head cinnamon, the colorings of the under surface also cinnamon, except in the female, which has white on the under parts. *Halcyon cinnamominus*.

GENUS **HALCYON** SWAINS.**45. Halcyon albicilla** Dumont.

General color above a bright blue; under surface, whole of head and neck white; from behind the eye above the ear coverts runs a streak of blue. Length 11, culmen 2.3, wing 4.9, tail 3.1, tarsus .07. Female similar in color. *Hab.* New Guinea, Solomon Islands, Louisiades, Saipan; not on Guam.

**46. Halcyon cinnamominus** Swains. **Sehig.**

*Dacelo ruficeps*, Cuv., Gal. du Mus., Less. d'Orn., 1831, p. 247.

*Alcedo ruficeps*, Cuv., Pucher, Rev. & Mag. Zool., 1853, p. 387. (Marianas; *gleich cinna mominu* Swains.)

*Halcyon cinnamominus*, Finsch., Jour. Mus. Godff., 1876, XII., p. 20; Sharp, Brit. Mus. Cat. B., XVII., p. 259.

*Halcyon rufigularis*, Sharp, Brit. Mus. Cat., XVII., p. 260.

These birds are very common near the native ranch houses and the villages. They are especially noticeable because of the loud and disagreeable noise which they are constantly making, both night and day. They are especially abundant near the city of Agaña, and their noisy kaa-kaa-kaa-kaa frequently aroused me from sleep at the unconventional hours of two and three o'clock in the morning. I was informed that Governor Leary was so exasperated by these disturbers of the night that he ordered a squad of native soldiers out to kill off all near the palace, but judging from the noise still to be heard the attempt was not an entire success. The birds make this noise just as they fly up, seeming to think it an essential part of the proceedings. Even if the distance to fly is only two feet it must be proclaimed by this jangling kaa-kaa, which is almost as unpleasant a sound as the braying of an ass. Sehig, as the natives call this bird, has a bad reputation as a chicken thief. I rather doubted his ability in this line until one day I actually saw him attack a brood of small chicks quite near me, and he would have undoubtedly secured one had not the mother hen rushed to the rescue. The chief food of this species seems to be, however, lizards and grasshoppers. I have seen them catch a lizard and then, flying into a tree, by a dexterous shake of their big bill hammer the victim against the limb of the tree until its life was extinct, after which they would proceed very leisurely to devour it, and then go to sleep. After eating, these birds are very loath to fly, and will allow one to approach within a step or two of them. The breadfruit tree is their favorite resting place. Six specimens were secured, three adult males and three adult females. The adult males have the mantle greenish blue; rump and upper tail coverts a slight degree lighter than the mantle; wings bluer than mantle, the quills blackish, more or less blue on the outer webs, the first primary with only a faint trace of bluish;

tail feathers blue; head, hind neck and entire under surface of body a uniform cinnamon; ear coverts are long tufts of dusky feathers with a tint of greenish blue; a dusky band extending from ear coverts entirely around the back of the head, forming a nuchal band; eye dark hazel; bill a dark horn, except posterior third of lower mandible which is light. The adult female (type of *Halcyon ruficularis*, Sharp) is similarly colored, but has only the throat, head, chest and thighs, cinnamon; the breast, belly, sides of body, under wing coverts and under tail coverts white. In some specimens there is a slight mixture of cinnamon on the upper tail coverts, and also a faint buffy tint on the sides. The cinnamon color of the females is not quite so bright as on the males. The measurements of the specimens taken were as follows:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9545	May 30	9.00	4.30	3.00	.75	1.67	1.00	♂
9546	May 30	10.00	4.60	3.24	.75	1.67	1.00	♂
9547	May 30	9.75	5.00	2.93	.67	1.58	1.70	♂
9548	May 30	10.00	5.18	3.25	.60	1.81	1.60	♂
9549	May 30	10.50	4.00	3.28	.62	1.67	1.60	♂
9550	June 4	10.00	4.00	3.00	.67	1.57	1.00	♂

The extent of the wing is about 14.50; the depth of the bill at the nostrils is about .57. *Hab.* Island of Guam.

## Order MACROCHIRES.—Swifts, Goatsuckers, Etc.

**a**<sup>1</sup>. Tarsi and toes naked, tail slightly forked, color dusky. Family *Cypselidæ*.

**b**<sup>1</sup>. Shafts of the rectrices ordinary and without spinous points. Genus *Collocalia*, Gray.

### 47. *Collocalia fuciphaga* (Thunb.). Jajaguag. Swift.

*Hirundo vanikorensis*, Quoy & Gaim., Voy. Astrolabe, Zool., 1830, I., p. 206.

*Collocalia fuciphaga*, Cat. B. Brit. Mus., XVI., p. 499; Oust., I., p. 187; Hartert, Nov. Zool., V., p. 53.

These birds are quite common, especially over the grassy hills, where they could be constantly seen hawking about for insects. I never have seen them alight. Many caves on the island were searched in the hope of finding the nests and eggs, but I was unsuccessful, although the birds doubtless nest on the island in large numbers. The upper surface is a sooty brown with a slight gloss; the head is uniform with the coloring of the mantle, with a little deeper gloss; the wings and tail are darker; the under surface is

brownish gray ; there is a small spot of grayish in front of the eye ; bill and feet dusky ; eyes dark hazel. The four specimens secured measured as follows:—

<i>Museum</i> No.	<i>Date.</i>	<i>Length.</i>	<i>Wing.</i>	<i>Tail.</i>	<i>Tarsus.</i>	<i>Culmen.</i>	<i>Mid-toe</i> <i>and c.</i>	<i>Sex.</i>
9529	June 1	4.17	4.18	2.00	.43	.17	.31	♂
9530	June 6	4.00	4.25	2.06	.31	.17	.28	♂
9531	July 10	4.12	4.36	2.00	.42	.18	....	♂
9532	July 17	4.00	4.33	2.00	.42	.18	....	♂

The spread of the wing is about 10, and the depth of the bill at nostrils is .06. *Hab.* The islands of the Malay Archipelago, north to the Philippines, Western Himalayas to the Nilgherries, Ceylon and the Seychelles in the west, islands of Santa Cruz and Duke of York, Sumatra, Borneo and Marianas.

## Order PASSERES.—Perching Birds.

**a<sup>1</sup>.** Bill broadened, flat, with rectal bristles at base. Family *Muscicapidæ*, Fly-catchers.

**b<sup>1</sup>.** Tail longer than wings. Genus *Rhipidura*.

**b<sup>2</sup>.** Wings longer than tail, bill equal to hind toe without claw. Genus *Myiagra*.

**a<sup>2</sup>.** Bill like that of a thrush, wings rounded and short—not more than 3.30, general color an olive brown. Family *Timeliidæ*, Babbling Thrushes.

**c<sup>1</sup>.** Tail of 12 feathers, the outside one less than .25 shorter than the longest, a minute bastard primary. Genus *Acrocephalus*.

**a<sup>3</sup>.** Bill moderate, or very slightly hooked at tip.

**d<sup>1</sup>.** Nasal feathers erect or inclined backward, bill conical and elongate, hind claw stronger than claw of middle toe. Family *Sturnidæ*, Starlings.

**e<sup>1</sup>.** Color black, length about 9.50, immature streaked with yellowish. Genus *Aplonis*.

**d<sup>2</sup>.** Nasal feathers directed forward, bill strong and curved, wing more than 4. Family *Corvidæ*, Crows.

**e<sup>2</sup>.** Black, length about 15. Genus *Corvus*.

**d<sup>3</sup>.** Nasal openings in long soft grooves, tongue brush tipped. Family *Meliphagidæ*, Honey-eaters.

**e<sup>3</sup>.** General color red. Genus *Myzomela*.

**e<sup>4</sup>.** General color yellow.

**f<sup>1</sup>.** Eye with white ring. Genus *Zosterops*.

**f<sup>2</sup>.** Eye without ring. Genus *Cleptornis*.

GENUS **RHIPIDURA** VIGORS & HORSFORD.

**a**<sup>1</sup>. "Bases of all the tail feathers, rump and upper tail coverts rufous, length 4.94." *Rhipidura saipanensis*.

**a**<sup>2</sup>. Bases of the tail feathers, rump and upper tail coverts a bright rufous, length 5.50-6.25. *Rhipidura uraniæ*.

**48. Rhipidura saipanensis** Hart.

Mr. Hartert, in Nov. Zool., 1898, V., p. 54, describes the *Rhipidura* from the island of Saipan as a new species. I have no specimens from Saipan, but in description they are characterized as having the base of rectrices rufous; rump and upper tail coverts rufous; sides of abdomen rufous; ear coverts, line under eye, and lores black; all of which is most certainly true of the *R. uraniæ*, which I now have before me. These were taken on the island of Guam during the months of June, July and August, 1900. The measurement of *R. saipanensis* is given as (male): "Length 151 mm., wing 69 mm., tail 80 mm., bill 8 mm., tarsus 19 mm. *Hab.* Island of Saipan, Marianas."

**49. Rhipidura uraniæ** Oust. **Chirita. Fan-tailed Fly-catcher.**

*Rhipidura uraniæ*, Oustalet, Bul. Soc. Philom de Paris, V., p. 75; Wigglesw., Aves Polynes., 1891, p. 20.

This is one of the most interesting little birds on the island, and they were so abundant that it was quite unusual to walk half a mile along the road without seeing at least a pair of them, or hearing their sweet little song which consists of about six low musical notes. It also makes a peculiar charring sound to warn people away from its nest. The following account was written in the field as I watched the bird and is copied from my field notes of June 28:

"Seated in the brush waiting to hear the warble of Ga-kalison, 'The Dweller among the Reeds' (*A. lucinia*), I have a good opportunity to watch and compare the notes and habits of the two Guam fly-catchers, *R. uraniæ* and *M. freycineti*, which are now feeding within six feet of me. *Uraniæ* is extremely active, and as compared to it the movements of *Freycineti* are very slow and clumsy. *Uraniæ* has the most astonishing way of whirling around and alighting just the other end on from what one expects. In this instance it was as polite as a Spaniard, and always faced towards me, spreading its beautiful fan-like tail and making a low chirping note. Not so the *Freycineti*, who looked me over critically, elevated his head crest, and giving his tail an odd little twerk, proceeded to hop deliberately up the limb like a sap-sucker, busy at work look-

ing for breakfast. However, I saw him catch a few insects on the wing, his wide curious looking bill closing with a loud snap. *Uranix* caught most of his breakfast on the wing, darting about the bushes in a way that made me suspect he was showing off, and putting the more clumsy *Freycineti* in as bad a light as possible. I was not fooled, however, for with such a fine rudder as his tail makes it is but natural that he should be able to change his course rapidly. Sometimes he seemed to whirl about merely for the fun of whirling."

Three adult males, three adult females, a young bird about ready to fly, and a nest were taken. The adults measured as follows:

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9470	May 30	6.25	2.68	2.81	.81	.43	.50	♂
9471	May 30	6.00	2.81	3.00	.83	.43	.53	♂
9472	June 1	5.50	2.50	2.75	.80	.41	.50	♀
9473	June 6	5.90	2.62	2.82	.84	.42	.56	♀
9474	July 6	5.50	2.65	2.75	.80	.39	.56	♀
9475	July 9	5.50	2.50	2.75	.80	.45	.56	♀

The spread of the wings is about 7.75, the depth of the bill at nostrils is about .12. The adult birds on the upper surface are an ochraceous brown, becoming a bright rufous on the rump; upper tail coverts and bases of rectrices are a bright rufous; the tail feathers, which are exceptionally wide and long for such a small bird, are a shining dusky brown, almost black; primaries and secondaries are a soft brown, slightly darker than the mantle—the outer webs are slightly fringed with red; under surface of wing a lighter brown. No. 9472 has the greater and middle wing coverts tipped with rufous, thus forming two rufous bands on the wings; but in the other specimens these bands are very indistinct, or entirely worn off; forehead a bright rufous, slightly dusky around base of upper mandible; the bright rufous of the forehead merging into the ochraceous brown on the crown; the feathers of the crown with dusky centres. In my series the females do not show the dusky centres to these crown feathers, although the bases of the feathers are dusky as in the male. I doubt, however, if this difference would hold good in a large series, and apart from this slight point I find the sexes identical. Throat and under neck black, the feathers assuming white tips on the breast; hind breast and belly white, with rufous tint; sides, flanks, thighs and under tail coverts rufous; chin grayish white, with a whitish irregular line extending from the base of the gonys down the sides of the throat; otherwise, cheeks, lores and ear coverts dusky; eye dark hazel; feet dark brown; bill dusky, except on the gonys, which are grayish. The nestling secured has the upper surface thickly covered with filmy feathers of a soft rufous brown; under parts grayish with rufous tint. *Hab.* Island of Guam.

The nest is very interesting, neatly and very compactly woven in and out with fine vegetable fibre; the outside is covered with

a fine padding of material resembling the paper fibre made by wasps. The nest has a very curious projection of fibres extending from the bottom. This pretty little structure is usually built in the Mapuna tree, where a number of branches converge some ten or twenty feet from the ground. Inside the nest measures  $1.53 \times 1.50$ , while its depth is .85; outside it measures  $1.83 \times 1.85$ , with a depth of 2.50. (Fig. 3.)

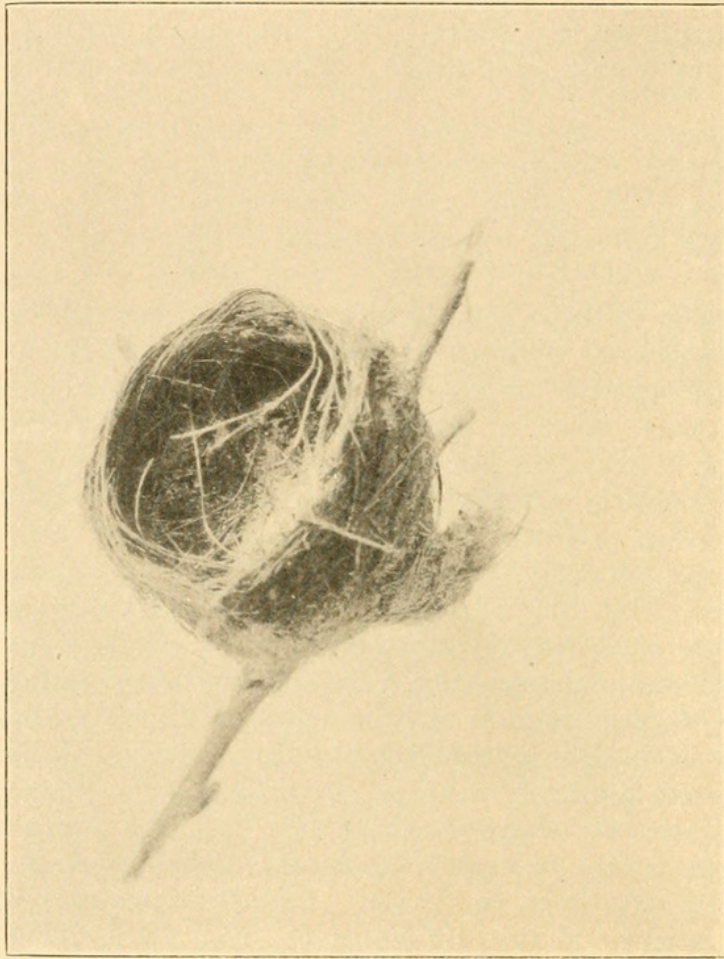


FIG. 3. RHIPIDURA URANIÆ, OUST.

GENUS **MYIAGRA** VIGORS & HORSFIELD.

**50. Myiagra freycineti** Oust. **Chigungan. De Freycinet's Fly-catcher.**

*Myiagra freycineti*, Oust., Bul. Soc. Philom., 1881 (7), V., p. 73; *Id.*, Naturaliste, 1889, p. 260; Wigglesw., Aves Polynes., p. 24; Hartert, On the Birds of the Mariana Islands, Nov. Zool., V., p. 54.

The little De Freycinet's Fly-catcher is common in all parts of the island. Upon first hearing the notes of this bird I thought surely a Bush-tit, by some strange accident, had arrived on the

island, the clear-whistled call of Peter-Peter-Peter seemed so unmistakable. Sometimes he varies this call by whistling three Here-Here-Here, followed by the first call. They have a habit of erecting the beautiful metallic-blue feathers of the head as a crest when they are alarmed. The general color above is a blue-purple, with a bluish sheen, head with a deeper, more metallic reflection of bluish, this color extending over cheeks, ear coverts, nape and sides of neck, meeting the white under coloring of the chin and throat in a sharp line from gape to shoulders; a slight tint of buffy on the lower throat and fore breast; remainder of under parts white; primaries, secondaries, and tail feathers gray, with a bluish tint, lighter below; upper wing coverts and upper tail coverts uniform with coloring of the mantle; all the tail feathers minutely tipped with white (this marking is worn off in some of the specimens before me); bill dark blue; feet and tarsus dark, with a bluish cast; eyes dark hazel; thighs bluish gray; flanks and sides of body bluish gray, with the feathers tipped with white. So far as shown by my series of ten specimens the adult males and females are exactly alike, with a possible exception of a little more of the rufous coloring on the throat and fore breast of the female. In No. 9484, an adult male, this coloring is confined to a faint trace of buffy on the lower throat and fore breast, while in No. 9486, a breeding female, the coloring of the fore breast and throat is a bright rufous as in the immature of both sexes. No. 9485, a male with the testes fully developed and erotic, has the usual purple-blue upper coloring of the adult males, while the entire throat, sides of neck and breast are a bright rufous; there is also a slight mixture of rufous among the white feathers of the abdomen. Thus the specimen is a typical adult above, and immature below. Six specimens, selected at random, give the following measurements:—

<i>Museum</i> <i>No.</i>	<i>Date.</i>	<i>Length</i>	<i>Wing.</i>	<i>Tail.</i>	<i>Tarsus.</i>	<i>Culmen.</i>	<i>Mid-toe</i> <i>and c.</i>	<i>Sex.</i>
9478	May 29	5.50	2.49	2.31	.81	.55	.51	im. ♂
9482	June 9	5.25	2.75	2.25	.75	.56	.55	♀
9483	June 26	5.50	2.68	2.31	.75	.55	.60	♀
9484	June 26	5.50	2.81	2.37	.74	.52	.62	♂
9485	June 26	5.65	2.68	2.37	.75	.56	.60	♂ (Note)
9486	July 20	5.70	2.75	2.36	.75	.56	.55	♀

The spread of the wings is about 8.50, while the depth of the bill at the nostrils is .15.

The immature are easily distinguished by the ochraceous brown coloring of the mantle, and by the greater extent of the bright rufous of the under parts, which with the exception of a small white space on the middle of the belly and the white under tail coverts is entirely rufous, brightest on the sides of the fore breast, paler on the chin and sides; there is a slight rufous coloring on the forehead and on the upper tail coverts. The color of the crown is not such a bright metallic blue as in the adult; the wing and tail feathers are a brown on the upper surface, lighter below; the

edges of the webs are more or less rufous or buffy, according to the age of the specimen; wing coverts brown, more or less edged with rufous; bill and feet dark, with bluish cast.

The nest and egg of this species were secured for me by a Chamorro lad. This particular nest is quite interesting from the fact it has a ring of wax, from the breadfruit tree, around the top, by which means the boy had endeavored to take the old bird. The

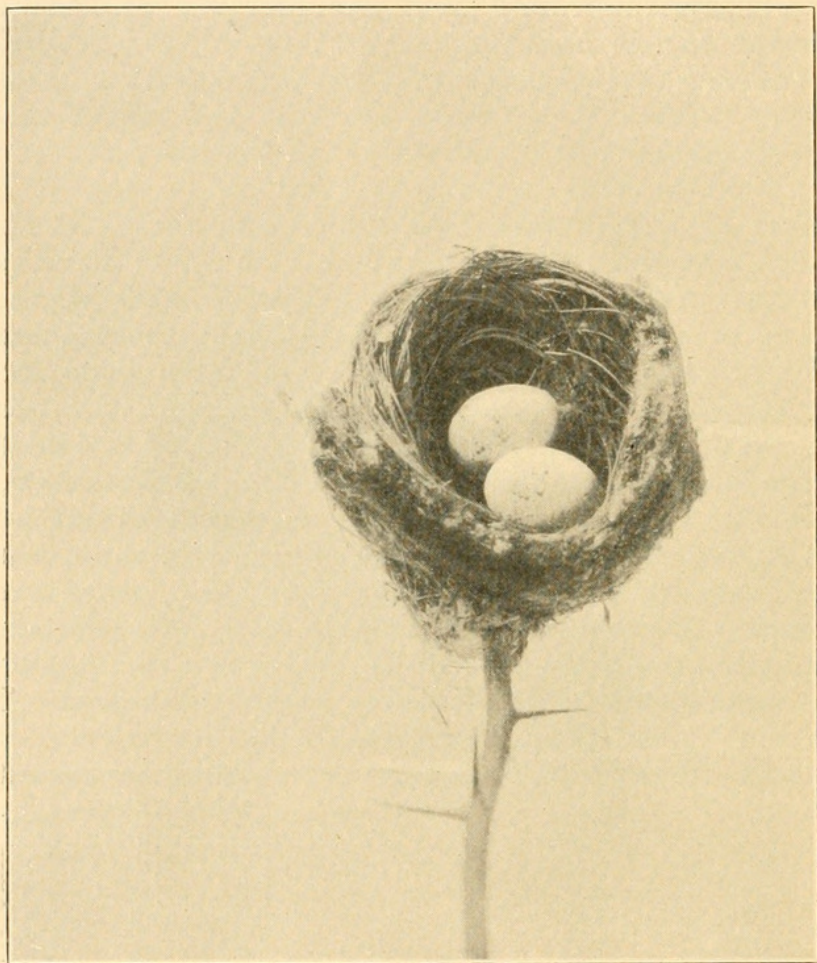


FIG. 4. MYIAGRA FREYCINETI, OUST.

inside measurements are  $1.35 \times 1.75$  and .75 in depth; outside  $2 \times 2$  and depth 1.75. (Fig. 4.) It contained two eggs, brownish cream in color, zoned near the larger end with cinereous spots and small irregular blotches; size  $.70 \times .50$ . *Hab.* Guam.

#### GENUS **ACROCEPHALUS** NAUMANN.

a<sup>1</sup>. Tail feathers without dusky cross bars, upper surface uniform brown. *Acrocephalus syrinx*.

a<sup>2</sup>. Tail feathers with dusky cross bars, upper coloring olive brown. *Acrocephalus lucinia*.

**51. *Acrocephalus syrinx* Kittl.**

Mr. March found this species on Pagan Island, where it was probably accidental. General color above uniform ruddy brown, under surface yellowish white. Length 6.8, wing 3, tail 2.50, culmen .95-1, tarsus 1.05. *Hab.* Isle of Ponape, Carolines.

**52. *Acrocephalus lusciniæ* (Quoy & Gaim.). Ga-kaliso. Reed Warbler.**

*Thryothorus luscinius*, Quoy & Gaim., Voy. Astrolabe, 1830, I., p. 202.

*Acrocephalus mariannæ*, Trist., Ibis, 1883, p. 45.

*Tatare lusciniæ*, Oust., Nouv. Arch. Mus. Hist. Nat., Ser. III., Vol. VIII., p. 209.

*Acrocephalus lusciniæ*, Hartert, Nov. Zool., V., p. 57.

This bird is now quite scarce, and I predict will soon become extinct on the island of Guam. It lives exclusively among the reedy swamps, and these swamps are now being drained to make room for the Chinamen's rice paddies. Ga-kaliso, "The Dweller Among the Reeds," as this name signifies, is the most beautiful singer in all the islands. Early in the morning usually, from among the tall reeds his liquid sweet song can be heard, the notes rising and falling in happy cadence, reminding one very much of the Mocking Bird of the southern United States. These birds are very hard to distinguish in the field as they are so nearly the color of the reeds, the only way to locate them being by their melodious voices. This made the shooting of them a hard task, for to kill a bird with so sweet a voice made one feel as if he were committing a great crime. Four specimens were taken. Their stomachs contained the remains of a great many insects and larvæ. I frequently watched them feeding among the reeds. Three of these birds were males, and one female. Their measurements are as follows:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9541.	June 1	8.50	3.23	3.00	1.19	1.25	1.00	♂
9542	June 26	8.12	3.37	3.00	1.20	1.25	1.05	♂
9543	July 9	8.50	3.30	2.62	1.15	1.18	1.06	♂
9544	July 9	8.20	3.18	2.68	1.18	1.18	1.03	♂

The spread of the wings is about 10.25, the depth of the bill at the nostrils is about .18. The general coloring above is a uniform olive brown, with a slight rufous tint; the primaries are a darker brown than the mantle. In No. 9542, an adult male in fine breeding plumage, the tail being darker than the mantle; while in the other specimens it is not. The tail and wing feathers, if held in a certain light, show slight cross bands; rump more or less yellowish, much brighter in the females and young males; a yellow superciliary line and lores; the entire under surface is yellowish; thighs rufous; sides of body and flanks rufous and gray; bill brown above, yellowish below; feet and tarsus brownish gray; eye dark hazel. The females and the young are colored almost alike and are characterized by the more rufous coloring in general; the rufous outer webs to the primaries and the very dark color of the inner second-

ary; this latter character much more distinct in the female than in the young males; the feathers of the thighs are also much brighter rufous in the females. The general under coloring of the feathers in this species is a dark gray, so that the outer coloring of the feathers depends largely upon how much of the brownish or yellowish tip is worn off. This is well illustrated by No. 9541, an old male with the plumage so worn as to give the bird the appearance of being gray, with rufous tint. *Hab.* Guam, Saipan.

### 53. *Aplonis kittlitzi* F. & Har. *Sali.* Starling.

*Calornis kittlitzii*, Finsch. & Hartl., Fauna Central Polyn., 1867, p. 109.  
*Aplonis kittlitzii*, Cat. B. Brit. Mus., XIII., p. 136.

This bird is common on the island of Guam. In color and actions they very much resemble the blackbird of the eastern United States. They are noisy and quarrelsome, especially when there are any of the young birds about. Their food seems to consist chiefly of the fruit of the wild papaya. They build their nests in the hollow of a tree, usually choosing the dead trunk of a coconut for this purpose, and laying four, sometimes three eggs. Fourteen specimens of this species were taken. The immature bird, with its streaked breast, might be easily mistaken for a distinct species. The adult bird, both the male and female, is a uniform black all over the body, with a slight greenish sheen to the feathers; bill, feet and tarsus black; the shafts of the wing feathers and the rectrices are black on the upper surface, white on the sides, and brownish below; this is especially noticeable on the tail feathers and the secondary wing feathers; under surface of wings and tail dusky, but not quite so dark as the body; eyes golden yellow. Length 9.25-9.75, wing 4.56-5.00, tail 3.17-3.60, tarsus 1.25-1.37, culmen .93-.87, mid-toe and claw 1.19-1.20 *Hab.* Guam.

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9552	May 24	9.50	5.00	3.37	1.37	.93	1.25	♂
9553	May 24	9.00	4.56	3.60	1.25	.93	1.19	♂
9554	May 30	9.75	5.00	3.31	1.27	.81	1.19	♂
9555	May 30	9.50	4.67	3.17	1.30	.87	1.20	♂
9556	May 30	9.25	4.62	3.25	1.25	.87	1.14	♂
9557	May 30	9.50	4.50	2.85	1.17	.87	1.17	juv. ♂
9558	July 3	8.50	4.60	2.50	1.17	.85	1.26	juv. ♂
9559	July 11	9.50	4.75	3.25	1.25	.86	1.30	juv. ♂
9560	July 11	9.00	4.62	2.63	1.12	.86	1.30	juv. ♀
9561	July 11	9.00	4.50	3.00	1.25	.86	1.10	juv. ♀

The immature of this bird has the upper surface dusky, but not so dark as in the adult; there is also a greenish sheen to the feathers on the upper surface; the upper sides of the rump have more or less of a mingling of bright buffy; the entire under surface has a streaked appearance, caused by the feathers having dusky greenish centres, with margins of buffy white; this streaking is very fine on the chin and throat, broader on the breast and belly. Still younger specimens have less of buffy on the breast and throat; bill and feet dusky; eye yellow. No. 9562, a big nestling, almost

ready for flight, has the upper surface black without the greenish sheen; the feathers of the throat are dusky without the buff coloring; the breast is a dirty buff and dusky; the belly is chiefly a dirty buff; bill dark, with a little lighter shade on the lower mandible; feet, wings and tail dark; eyes brownish. No. 9563, which is just assuming the first plumage, has fine black feathers emerging from their sheaths, the back has acquired a fair degree of plumage, but the breast and belly are still bare, with a fringe of dirty buffy feathers along the sides. When first hatched the young are entirely naked. The eggs (Fig. 1, *b.*) are pale green, with brown irregular spots about .15 in diameter scattered sparsely over the entire egg, being most abundant on the larger end. These eggs measured  $1.27-1.15 \times .95-.85$ . *Hab.* Marianas.

#### 54. *Corvus kubaryi* Rchw. Aga. Kubary's Crow.

*Corvus solitarius*, Kittl., Reise, 1858, II., p. 143.

*Corone philippina*, Wieglesw., Aves Polynes., p. 46.

*Corvus kubaryi*, Rchw., Journ. f. Orn., 1885, p. 110; Hartert, Nov. Zool., V., p. 59.

This species is common in the jungles, where they soon attract attention by their noise. They are not at all wild, so I was able to approach quite near, and observe them carefully. I did not discover any new tricks—they pulled up the newly planted corn of the native in the same old way and with apparent satisfaction. They have the reputation of plundering the nests of the smaller birds in order to eat the eggs and young, and they do not seem to sound the same straightforward Caw, Caw of our American crow, for they have a sort of Polynesian twist to their tongue which makes them very hard to understand, and sounds like Qu a á Qu a á. Five specimens were secured, but owing to an accident four of them were destroyed. The remaining specimen, No. 9487, an adult female, is a deep black all over, including bill, feet and tarsus. There is a fine bluish black sheen or gloss to the feathers of the mantle, wings and tail; head a shiny black without a noticeable blue gloss; under parts a dead black color; the under color of the feathers all over the body is white or light gray; so if the outer half or two-thirds of the feathers were worn off we would have a white crow. Length 15.00, spread of wings 26.00, wing 9.50, tail 6.12, tarsus 2.00, culmen 1.80, mid-toe and claw 2. Eye dark hazel. *Hab.* Guam.

#### GENUS MYZOMELA FINSCH.

#### 55. *Myzomela rubratra* (Less.). Egigi. Red Honey-eater.

*Cinnyris rubrater*, Less., Voy. Coq. Zool., 1826, p. 678.

*Myzomela rubratra*, Finsch, Journ. Godeffroy Mus., XII., p. 26; Oust., I., p. 197; Hartert, Nov. Zool., V., p. 55; *Id.*, VI., p. 2; Gadow, Cat. B. Brit. Mus., IX., p. 129.

The beautiful little red and black Egigi, as the natives call this Honey-eater, is probably the most abundant bird on Guam. They are quite fearless and are frequently to be seen in the gardens of the villages, the tall coconut palms being, however, their favor-



FIG. 5. MYZOMELA RUBRATA (LESS.).

ite resorts, where they can always be seen feeding among the blossoms, doubtless attracted by the insects as well as by the honey and pollen. Their stomachs were filled with insects, many also containing traces of the coconut honey and pollen. Their size, color and actions remind one very much of the Apapane (*Himatione sanguinea*) of Hawaii. They have a sweet little song of some eight or ten notes, usually to be heard about sunrise. A series of twenty-one specimens was secured, also a number of nests and eggs. The adult female of this bird is well described by Mr. Hartert in Nov. Zool., V., p. 55, but in *Id.*, VI., he makes the statement, "The adult female differs from the male only in the smaller size," which is probably an error, as No. 9551 (Bishop Museum), a sexually adult female, as shown by the organs (See carcass No. 1502), is much lighter in color, as well as smaller in size. However, they may breed before they are fully adult. The juvenile males are usually darker than the adult females. Six specimens selected at random give the following measurements:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9451	May 24	5.00	2.50	1.68	.70	.64	.62	♀
9459	May 28	5.50	2.75	2.00	.80	.64	.70	im. ♂
9456	June 5	5.75	2.90	2.12	.84	.68	.70	♂
9457	June 7	5.50	2.88	2.06	.86	.68	.75	♂
9461	June 27	5.50	2.75	2.00	.81	.68	.70	im. ♂
9467	July 19	5.00	2.75	1.80	.78	.62	.70	♀

The adult male has the head, neck, breast, back, rump, upper tail coverts, sides and the anterior part of the belly scarlet; wings, wing coverts, tail, under tail coverts, lower belly, flanks, thighs, shoulders and under wing coverts blackish brown; lores dusky. The under coloring of the feathers is dark gray, almost black where it meets the scarlet outer tip of the feather; feet and tarsus dark; eye dark hazel. The sexually adult female has the shoulders, wings, tail, belly, sides and thighs olive brown. The scarlet coloring on the remainder of the body, head and neck is not so bright or so thick as in the adult male. They are smaller in size than the adult males. The immature males are very much like the females, but are usually a little darker in color and larger in size. The young, Nos. 9466 and 9467, are olive brown above, yellowish on under parts, washed with red on the sides of the fore breast and back; bill dark, yellowish on the base of lower mandible; feet and iris dark.

The nests were neat little cup-like structures of small rootlets, fibre of plants, and wild cotton. (Fig. 5.) The internal size,  $2 \times 1.95$  and 1.25 deep; external,  $2 \times 3$  and 2 deep. They were usually placed among the outer branches of the wild orange, or Kaman-cheti trees, eight to fifteen feet from the ground. There are usually two eggs in each nest. These eggs are white, marked with brownish dots and splotches which are especially thick on the larger end of the egg. Size  $.75 \times .57$ . *Hab.* Caroline Islands, Pelew and Marianas Islands.

GENUS **ZOSTEROPS** VIGORS & HORSFIELD.

a<sup>1</sup>. General color above a dull yellowish olive, length 3.8. *Zosterops semperi*.

a<sup>2</sup>. General color above olive green, length 4.25. *Zosterops conspicillata*.

**56. Zosterops semperi** Hartl. & Finsch. **Zosterops.**

General color above dull yellowish olive, scarcely brighter on the rump and upper tail coverts; crown like the back; in front of eye a dusky spot, and below the eye a line of dusky. Length 3.8, wing 2.2, culmen .45, tail 1.33, tarsus .7. *Hab.* Pelew Islands, east and central Carolines. Rota, according to Oustalet.

**57. Zosterops conspicillata** Gray. **Nossac.**

*Dicaeum conspicillatum*, Kittl., Kupf. Voy., 1832, Pl. 19, Fig. 1.

*Zosterops conspicillata*, Gray, Gen. B. I., 1848, p. 198; Gray, Cat. B. Trop. Isl. Pacific O., 1859, p. 16; Gadow, Cat. B. Brit. Mus., 1884, IX., p. 183.

The little Nossacs are one of the common species of birds on Guam. They seem to be of a social nature and are usually seen in flocks of from ten to twenty. Their favorite feeding grounds seem to be the small Lemonceti bushes (*Linovia trifoliata*) that grow by the roadside, and in fact in the waste places all over the island. They hop about on the branches, first on one side and then on the other, keenly on the lookout for insects, which form the principal part of their food. In habits and flight they remind one very much of the goldfinch, but their note, sounded usually as they fly, is something like that of the English sparrow, but not so loud or unpleasant. Twelve specimens were taken, all but one of which were females. One nestling and three nests and eggs were secured. The measurements of half the specimens, selected at random, are given below:—

Museum No.	Date.	Length.	Wing.	Tail.	Tarsus.	Culmen.	Mid-toe and c.	Sex.
9566	May 24	4.50	2.19	1.52	.81	.44	.62	♂
9571	June 7	4.25	2.16	1.56	.80	.47	.58	♀
9570	June 1	4.25	2.30	1.50	.98	.47	.58	♀
9574	June 28	4.21	2.12	1.50	.78	.48	.59	♀
9575	June 19	4.25	2.15	1.50	.80	.44	.62	♀
9576	July 21	3.00	1.50	.56	.80	.35	.62	juv.—

The spread of wing is about 6.75, and the depth of the bill at nostrils is about .13. The general color above is olive green varying to dull grayish olive, as in No. 9567; eyes with a ring of white, bordered below by a narrow dusky line which merges into the brownish gray of the hind cheeks and ear coverts; there is also a line of white extending from this eye ring to the base and around the upper mandible; throat and fore neck yellowish white, becoming a brighter yellowish on the breast and belly; hind cheeks, ear coverts and sides of neck grayish, with a slight shade of olive

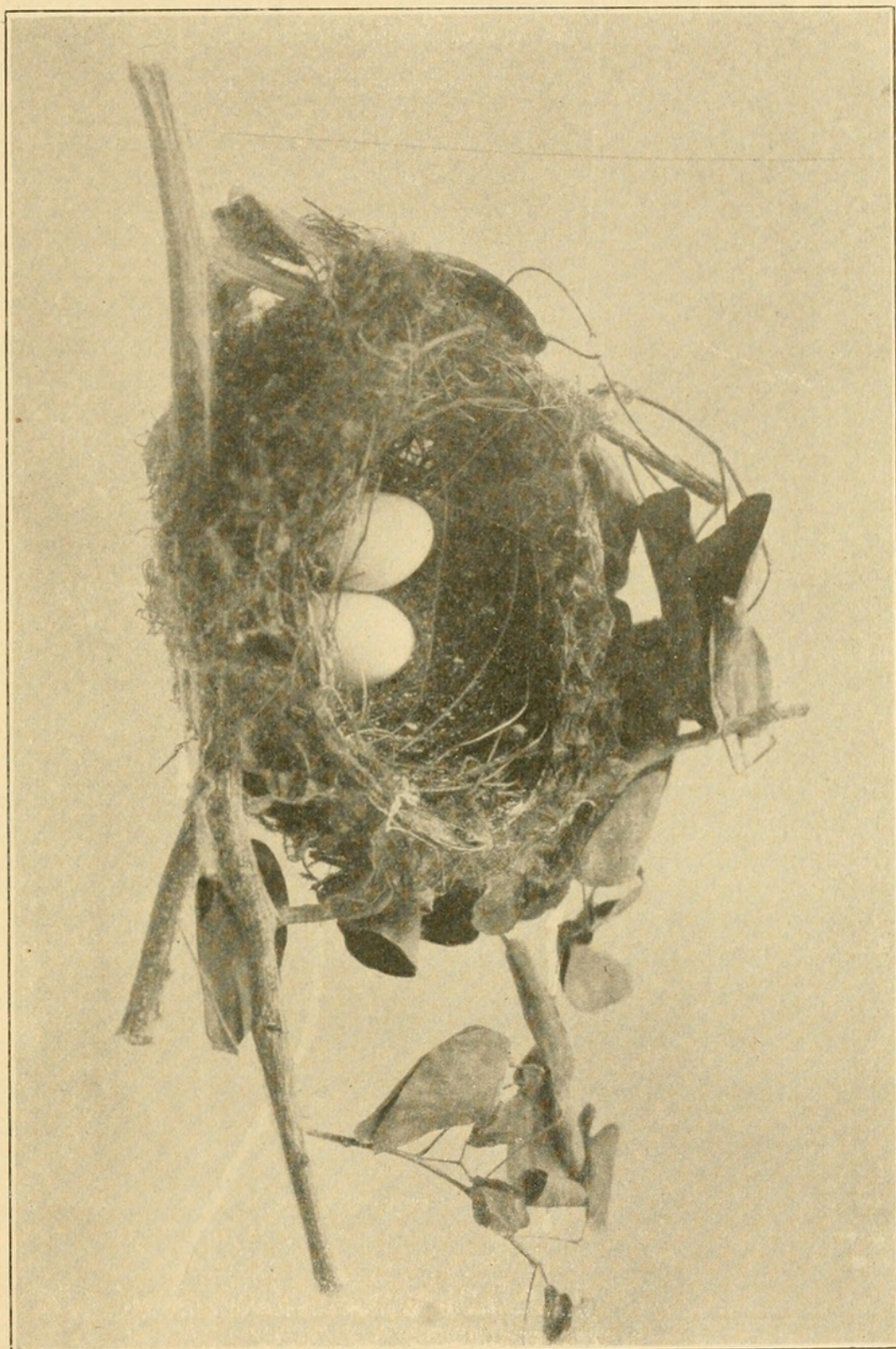


FIG. 6. *Zosterops conspicillata*, GRAY.

green; sides of body yellowish, with a tint of olive green; under tail coverts ranging from bright yellow to buffy; wing coverts uniform with the coloring of the mantle; under wing coverts and edge of inner webs of secondaries white; primaries brown, with the edge of outer webs olive green, except in the first primary, which is a dark brown; tail feathers olive green above, grayish below; upper tail coverts a shade brighter olive green than the mantle. The under color of the feathers all over the body is gray, so the shade of coloring on the bird depends largely upon how much of the outer tips of the feathers is worn off; bill is dusky above, light below; eye a light hazel; feet are grayish with a very slight tint of greenish. Length 4.21-4.50, wing 2.12-2.30, tail 1.50-1.56, tarsus .78-.81, culmen .44-.48, mid-toe and claw .58-.62, the depth of the bill at nostrils is about .12, and the spread of wings is about 6.50. The immature, No. 9576, just able to fly, with beak still soft, and total length of body but three inches, has the coloring uniform with the adult. The bill, however, is yellowish, and the feet and tarsi are a raw umber tint, the eyes are light hazel. The coloring of the belly is even a shade brighter yellow than in the adult. The nestlings, not yet able to fly, show the olive green coloring on the back, and buffy on the under parts; quills bluish; bill and feet yellowish.

The nests are beautiful little structures, usually built in the *Ingadulus* tree and well hidden among the leaves. Its size internally is  $1.90 \times 1.65$  and 1 in depth, while externally it is  $2.95 \times 2.19$  and 1.75 in depth. It is constructed of fine fibres and grass, the outside being covered with green moss, which renders it almost indistinguishable from below. The nest is usually placed far out where several branches come together some distance from the ground. The eggs (Fig. 6), of which there are usually two in each nest, are white with a slight tint of blue, and shaped like the eggs of a robin, measuring about  $.63 \times .50$ . *Hab.* Guam.

#### GENUS **CLEPTORNIS** OUSTALET.

##### **58. *Cleptornis marchei* Oust. Yellow Honey-eater.**

General color a deep golden yellow; back, rump, wings and tail olive yellow. Length of wing, as given by Hartert (Nov. Zool., V., p. 56), 76-80 mm.; bill ochraceous; iris burnt umber; feet and legs orange ochraceous. *Hab.* Island of Saipan, Marianas.



Seale, Alvin. 1901. "Report of a mission to Guam. Part I. Avifauna." *Occasional Papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 1(3), 17–60.

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