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BIRDS COLLECTED DURING THE WHITNEY SOUTH SEA EXPEDITION. II.

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The procedure followed in the present paper is the same as that described in the first of the series (Amer. Mus. Novit. No. 115).

Treronidæ

Ptilopus chalcurus (G. R. Gray)

Ptilinopus chalcurus GRAY, 1859, 'Cat. Birds Tropic. Is. Pacif. O.,' p. 37 ("Cook or Hervey Islands," an error for Makatea Island, Tuamotu Group).

Ptilopus coralensis, SALVADORI, 1893, 'Cat. Birds,' XXI, p. 104 (part). OGILVIE-GRANT, 1913, *Ibis*, pp. 349, 350 (part). WETMORE, 1919, *Bull. Mus. Comp. Zool.*, LXIII, p. 186 (part).

SPECIFIC CHARACTERS.—Resembling *Ptilopus coralensis*, but the cap on the head of greater extent, beginning at the base of the maxilla and the edge of the mouth and covering the forehead and lores as well as the crown; cap, moreover, of darker and richer hue (Rood's violet instead of phlox purple) than in *coralensis*, and succeeded posteriorly by the greenish plumage of the nape, with no trace of a yellow border such as is present in *coralensis*; feathers of nape, sides of neck, and upper breast more yellowish green (less gray).

TYPE.—In the British Museum.

REFERENCE SPECIMEN.—No. 193,854, Amer. Mus. Nat. Hist.; ♂ ad.; Makatea Island, Tuamotu Group, August 21, 1922; E. H. Quayle.

ADULTS (sexes alike).—Crown, forehead and lores Rood's violet; remainder of head (including circumorbital region), neck, and breast, greenish gray, the nape approximately greenish glaucous-blue, the throat paler and faintly tinged with naphthalene yellow; lower breast increasingly greenish, the concealed portions of the feathers here, as elsewhere, deep neutral gray; belly and flanks jazel green, the feathers toward the vent broadly margined with barium or citron yellow; under tail coverts pale lemon yellow; feathering of the legs greenish gray; dorsal plumage, caudad from the nape, generally parrot green, darker on the quills and attaining zinc green iridescence on the tertials and a few of their coverts; the three or four outermost primaries sooty black with only a faint tinge of green; all remiges, as well as the greater coverts, with yellowish external borders, these increasing in breadth and intensity toward the inner part of the wing, the borders of the outer primaries being cream color, the broader borders of the tertials and greater coverts pale lemon yellow; inner webs of wing quills sooty black, with a green tinge distally; under surface of wing gray; inner remiges and, more particularly, the rectrices obscurely marked with alternating green and coppery bars; inner webs and under surface of

tail neutral gray, with a darker subterminal and a paler terminal band. Iris, red; bill, yellow; feet and exposed portion of tarsus, red.

MEASUREMENTS.—(5 males): Wing, 134–138 (135.8); tail, 88–90 (88.8); exposed culmen, 14–15 (14.5); tarsus, 23–25.5 (24.3); middle toe with claw, 26–27 (26.6) mm.

5 females: Wing, 125–132 (129.5); tail, 81–87 (83.6); exposed culmen, 13.7–15 (14); tarsus, 23–24.5 (23.6); middle toe with claw, 24.5–25 (24.8) mm.

RANGE.—Known only from Makatea or Aurora Island.

Specimens from Makatea Island, Tuamotu Group, collected by Beck and Quayle during August 1922, and by A. Seale during January 1901 and January 1902.



Fig. 1. Heads of two fruit pigeons, to show the form and extent of the cap. a, *Ptilopus chalcurus*; b, *Ptilopus coralensis*.

It is interesting that the uplifted and well-wooded coral island of Makatea, so different in superficial features from its neighbors among the Tuamotus, should not only share with Tahiti the large fruit pigeon, *Globicera auroræ*, but should also have an endemic *Ptilopus* markedly different from the widely distributed *P. coralensis*.

As previously reported (Amer. Mus. Novit., No. 115, p. 5), the writer has examined specimens of *coralensis* from thirteen islands of the Tuamotus, extending from Marutea to Rangiroa. Compared with these, the birds of Makatea differ as noted above, the crown-patch being distinctive in both form and color, and lacking entirely the yellow posterior border which characterizes *coralensis* and, in still greater degree, *insularis*. The shape of the cap in *chalcurus* is approximately as in *insularis*, the brilliant feathering extending over the forehead and lores quite to the nostrils and the edge of the mouth, whereas in *coralensis* the lores are gray-green. The color of the cap in *insularis* is very red (almost as bright as Ridgway's Tyrian rose) while in *chalcurus* it is Rood's violet.

In young examples of *Ptilopus chalcurus* the iris and feet are brown. The cap makes its appearance at an earlier stage of growth than in *coralensis*, and the first scattering violet feathers are as evident in the

lores and about the base of the bill as they are on the crown. Juvenal specimens are therefore as readily distinguishable as adults.

When the writer first noted the distinctness of the fruit pigeon of Makatea, he suspected that it might prove to be the bird described by G. R. Gray as *Ptilinopus chalcurus* and incorrectly attributed to the Cook or Hervey Islands. Mr. N. B. Kinnear, of the British Museum, and Dr. W. L. Selater have kindly compared a sketch of the Makatea bird with Gray's type, and have sent the writer critical notes as well as a water-color drawing by Mr. Grönvold of the head of this specimen. These data indicate that *chalcurus* has been wrongly synonymized with *coralensis*, and that Gray's fruit pigeon of uncertain source deserves the name he gave it. The writer has no hesitancy, moreover, in designating Makatea as the type locality.

Ogilvie-Grant (*loc. cit.*, pp. 348-350) has clearly discussed the hitherto puzzling status of the fruit pigeons of the *coralensis* assemblage. He was misled, however, by considering an example of the Makatea bird, lent by the U. S. National Museum, as representing Peale's species.

Rallidæ

***Hypotænidia philippensis goodsoni* (Mathews)**

Eulabeornis philippensis goodsoni MATHEWS, 1911, 'Birds Austr.', I, p. 197 (Samoan Islands).

Specimens from the Samoan Islands (Tutuila, November, 1923; Tau and Olosenga, Manua group, December, 1923; Ofu, January, 1924; also two old skins from Upolu).

Iris, red (brown in chicks, reddish brown in immature birds); bill, brown above, horn-color below; feet and legs brownish or flesh-color.

The Samoan representative of this rail is undoubtedly distinguishable from the Philippine bird. Our specimens are, moreover, considerably larger than a female in the Museum collection labeled New Guinea. The relationship of *goodsoni* with the Fiji and Tonga races, to judge from Mathews' descriptions, is less clear, our single Fiji specimen revealing no distinguishing character. The original description is incorrect in stating that all Samoan specimens show traces of a pectoral band, for the band is not even suggested in a considerable proportion of the adult birds in our excellent series.

Newly-hatched young are clad in long, coarse, hairlike, sooty black down. The juvenal plumage is in general like that of the adult, but less brilliant, and less regularly barred on breast and scapulars. The chestnut color is likewise lacking from lores, cheeks, and hind neck, the

superciliary stripe is but faintly indicated, and the lower fore neck is mottled rather than clear gray.

***Porzanoidea tabuensis* (Gmelin)**

Rallus tabuensis GMELIN, 1788, 'Syst. Nat.,' I, p. 717 (Tonga Group).

Rallus tahitiensis GMELIN, 1788, idem, p. 717 (Tahiti).

Specimens from the Society Islands (Tahiti, December, 1920, and May, 1921); Tuamotu Islands (Manui, May, 1922; Manihi, February, 1923; Raraka, March, 1923; Mangareva, April, 1923; Hiti, May, 1923; Apataki, Aratika, Toau, and Tikahau, June, 1923); Oeno Island, April, 1922; Marquesas Islands (Nukuhiva and Hatutu, October, 1922); Austral Islands (Tubuai, May, 1921; Rapa, April, 1921, and February, 1922); Samoan Islands (Tau, December, 1923).

Iris, red; orbital skin "cardinal red"; bill, black; feet and legs, red (yellow, orange, and reddish, successively, in young).

Measurements.—(10 males): Wing, 79–85 (81.8); tail, 38–45 (41.6); exposed culmen, 19–21 (20.3); tarsus, 28–32.5 (29.8); middle toe with claw, 33–37 (34.8) mm.

10 females: Wing, 76–84 (80.7); tail, 37–44 (40.2); exposed culmen, 18–19 (18.5); tarsus, 26–31 (28.7); middle toe with claw, 32–36 (33.6) mm.

The total extent of the outstretched wings of three adult females, as measured in the flesh, was as follows: 1 from Tahiti, 275 mm.; 1 from Tubuai, Austral Group, 270 mm.; 1 from Manihi, Tuamotu Group, 260 mm. The variation among these three is, however, individual rather than geographic.

The large series of specimens from widely separated Pacific groups represent, apparently, a single form. They are indistinguishable from supposed topotypes of *P. tabuensis* in the collection of the Philadelphia Academy of Natural Sciences. The alleged characters of "*Rallus tahitiensis*" reduce themselves to age variations. The relationship of this rail with *P. plumbea*, however, needs investigation.

The first down of the chick is glossy greenish black, with a narrow white stripe on chin and throat. The presence of such a stripe, made up of true neossoptyles, is unusual. The glossy green down is gradually replaced by sooty plumage. The juvenal stage differs from the adult in being duller both above and below, and in having the throat and belly dirty whitish.

Although *Porzanoidea tabuensis* is a secretive species, it has not lost the power of flight. Members of the expedition not infrequently observed it in the air.

NESOPHYLAX,¹ new genus

Resembling *Porzanoidea* Mathews, but differing in proportions and in the reduced number of wing and tail quills.

Small, flightless rails, with medium bills, stout tarsi and feet, elongate tibiae, rounded, abbreviated wings bearing but nine primaries, and obsolescent tails composed of only eight rectrices.

Type of the genus, *Porzana atra* North.

Nesophylax ater (North)

Porzana atra NORTH, 1908, Rec. Austral. Mus., VI, No. 1, p. 31 (Henderson Island). OGILVIE-GRANT, 1913, Ibis, p. 347.

Porzana murrayi OGILVIE-GRANT, 1913, Bull. B. O. C., XXXI, p. 61.

Specimens from Henderson or Elizabeth Island, collected during March and April, 1922.

Iris "cardinal red"; eyelid vermilion; bill black, with a greenish base and a stripe of the same color along the proximal end of the culmen; legs and feet orange-red (brownish orange in younger birds), darker on anterior surface of toes and tarsus.

Measurements.—(10 males): Wing, 80–87 (84.2); tail, 36–44 (39.9); exposed culmen, 22.5–24 (23.2); tarsus, 35–38.5 (36.2); middle toe with claw, 39–42 (40.7) mm.

10 females: Wing, 79–86 (82); tail, 36–43 (40.1); exposed culmen, 20.5–22 (21.3); tarsus, 33–36 (33.9); middle toe with claw, 37–40 (39) mm.

It is of great interest, as the previous writers have remarked, to find such a distinct endemic rail upon a small, waterless island, especially since *Porzanoidea tabuensis* inhabits the neighboring islet of Oeno and ranges throughout the Tuamotus.

The gonads of many of the specimens collected by Beck and Quayle were in breeding condition, although several molting birds had reduced organs. In one such example all the primaries are newly sprouted and are enclosed in the sheaths.

The average length of the body in *Nesophylax ater*, as measured from alcoholic specimens, is about thirty per cent greater than in *Porzanoidea tabuensis*. Nevertheless, the absolute length of the wing is approximately the same in the two species, while the tail in *Nesophylax* is actually shorter than in *Porzanoidea*.

The most notable distinction of the new genus is, of course, the reduction of the primaries to nine. As in most cases of the sort, the position of the missing quill is not determinable. A vestigial remicle appears

¹Νησοφύλαξ=the guardian of an island.

to be present in both *Nesophylax* and *Porzanoidea*. Both, moreover, have the diastataxic secondary formula.

For the greater number of the following comparisons, the writer is indebted to his colleague, Mr. Waldron DeWitt Miller.

	<i>Porzanoidea tabuensis</i>	<i>Nesophylax ater</i>
Primaries	10 (9th little < 8th)	9 (9th slightly < 1st)
Secondaries	13	13
Rectrices	10	8
Tail	> tarsus + basal phalanx of 3d toe	< tarsus + $\frac{1}{2}$ basal phalanx of 3d toe
Wing Tip	> $\frac{1}{5}$ length of wing > hallux + claw	< $\frac{1}{5}$ length of wing < hallux + claw
Bill	culmen and maxillary tomium curved	culmen and maxillary tomium nearly straight
Tarsus	relatively slender; scutes across proximal part of plantatarsus	stout; plantatarsus reticulate
Cæca	moderate, clavate	small, cylindric

The following comparative measurements are based mostly upon the averages of 20 specimens (10 ♂ and 10 ♀) of each species.

	<i>Porzanoidea tabuensis</i>	<i>Nesophylax ater</i>
Length of body (2 spec.)	50 mm.	72 mm.
Length of head (2 spec.)	25	28
Culmen (20 spec.)	19.5	22.2
Wing (20 spec.)	81.3	83
Tail (20 spec.)	40.8	39.9
Tarsus (20 spec.)	29.3	35
Middle toe (20 spec.)	34.3	39.4

Following are comparisons of one skeleton of each species, sex undetermined.

	<i>Porzanoidea tabuensis</i>	<i>Nesophylax ater</i>
Length of sacrum	25.6 mm.	29 mm.
Depth of keel of sternum	6	5.5
Length of coracoid	14.5	15
Length of humerus	27.2	28
Length of mid-wing	22	22
Length of manus	25	24
Length of femur	31.5	34
Length of tibia	45	54

The sternum in the skeleton of *Nesophylax* is, unfortunately, broken so that its length cannot be ascertained. Bearing in mind, however, that *Nesophylax* is a considerably larger bird than *Porzanoidea tabuensis*, the figures give a hint of the degeneration in the wing and pectoral girdle, and of the relative hypertrophy of sacrum and hind limbs, which have taken place in the former flightless species.

***Porphyrio melanotus samoensis* Peale**

Porphyrio samoensis PEALE, 1848, 'U. S. Expl. Exped.,' VIII, p. 220 (Upolu, Samoan Group).

Specimens from the Samoan Islands (Tutuila, November, 1923; Tau, Manua group, December, 1923; Olosenga, Ofu, and Anuu, January, 1924; also three old topotypes from Upolu).

Iris, red (brown in young birds); bill red, becoming lighter on the frontal shield; feet and legs fleshy red, with the heel, tarsal, and phalangeal joints blackish.

Unfortunately, a dearth of material for comparison prevents a study of the subspecific position of this bald coot. It was "tentatively separated" by Mathews in 1911, Peale's name being, of course, retained. Mathews and Iredale (1921, 'Man. Birds Austral.,' I, p. 209) state that no recent advance has been made in a knowledge of the races. The dimensions of the Samoan birds are, however, fully twenty per cent smaller than those of two American Museum specimens of *Porphyrio melanotus* from the Murray River district, South Australia.

Hydrobatidæ

***Fregetta lineata* (Peale)**

Thalassidroma lineata PEALE, 1848, 'U. S. Expl. Exped.,' VIII, p. 293 (Upolu, Samoan Islands). CASSIN, 1858, idem, p. 403, Atlas, Pl. xxxix.

Pealea lineata, RIDGWAY, 1886, Auk, III, p. 334. GODMAN, 1907, 'Monogr. Petrels,' p. 57, Pl. xvi. MURPHY, 1923, Natural History, XXIII, p. 304 (Fig., p. 305).

A single adult female was collected by Beck off Huapu Island, of the Marquesas Group, on September 15, 1922. The bird was feeding in a streak of oily water in company with large numbers of *Bulweria* and *Fregetta grallaria*. It seemed to be a breeding bird, for the gonads were enlarged.

The measurements are as follows: Length (in the flesh), 203; expanse of outstretched wings (in the flesh), 438; wing, 165; tail, 73.5; exposed culmen, 14; tarsus, 38; middle toe with claw, 22 mm. The three toes are subequal in length, the outermost being a shade longer than the others. The first toe is a mere remnant, as in *Fregetta grallaria*, etc. The nails are flat and broadly triangular. The iris was brown, the bill, legs, and feet, including the webs, black.

Of the three previously known examples of this petrel, the type came from a supposed breeding ground on Upolu, and the others from "New Zealand seas."

Although the wing quills of our specimen are fully grown, the primary formula does not correspond with current descriptions, the outermost being shorter by about 8 mm. than the third. When Ridgway erected the genus *Pealea* he compared Peale's bird with *Oceanites*. The differences to which he called attention are therefore valid and obvious, and would entitle the former petrel to monotypic rank were it not for the fact that it is much more closely related to the several representatives of *Fregetta* than it is to *Oceanites*. "*Pealea*" is, indeed, practically identical in major details of proportion and pattern with *Fregetta grallaria*. The resemblances include the form of the bill, the wing formula, the white rump, crissum, and belly (the last being heavily streaked in "*Pealea*"), the whitish margins on fresh feathers of the dorsal surface, the concealed white area on the inner webs of the rectrices, and the structure of the legs and feet. The terminal outline of the tail is minutely different in the two species, but in this feature, as in certain others, "*Pealea*" is exactly intermediate between *Fregetta grallaria* and *Fregetta tropica*. A comparison of these three birds, with reference to alleged distinctions, will be of interest.

	<i>F. grallaria</i> Austral Islands	<i>F. lineata</i> Marquesas Islands	<i>F. tropica</i> Coast of Peru
Tail of 12 rectrices, and nearly square in all three species	Faintly rounded; graduated increase toward central quills	Doubly emarginate; central and lateral quills of the same length	Faintly emarginate; graduated decrease toward central quills
Primary formula, counting outermost developed quill as the first	2:3:1:4:5	2:3:1:4:5	2:3:1:4:5:
Tarsus and anterior surface of proximal phalanx	Reticulate	Reticulations obsolete, but still perceptible	Booted, but with traces of reticulations at both proximal and distal ends of the limb elements
Toes (4th slightly the longest in all three species)	Proximal phalanx greater in length than remainder of longest toe, including claw; 2d and 3d toes subequal	Proximal phalanx of equal length with remainder of longest toe, including claw; 2d and 3d toes subequal	Proximal phalanx slightly shorter than remainder of longest toe, including claw; 2d toe slightly shorter than 3d

These comparisons show the species as an evenly graded series, and break down the criteria of *Fregettornis*, the genus which Mathews created for *Fregetta grallaria*.

***Fregetta grallaria*, subspecies**

Procellaria grallaria VIEILLOT, 1817, Nouv. Dict. d'Hist. Nat., XXV, p. 418 ("Les mers australes" = South America, *vide* Mathews).

?*Fregettornis insularis*, *alisteri*, and *innominatus* MATHEWS, 1915, Austral Av. Rec., II, p. 124 (Lord Howe Island!).

Fregettornis grallarius, KINGHORN AND CAYLEY, 1922, Emu, XXII, p. 82, etc.

Specimens from Rapa Island, Austral Group, collected during April, 1921, and February, 1922.

Iris, brown; feet and legs black in adults, but the proximal parts of the toes and webs flesh-colored in young.

Numerous examples were taken on the nest. In February the birds were laying, while on April 18 some of the young petrels had grown to full size and had lost most of the down from their upper surfaces.

In 1912 ('Birds Austral.,' II, pp. 39, 40) Mathews inferred that Vieillot's type, which still exists in the Paris Museum, had come from Australian seas. But later (1921, Mathews and Iredale, 'Man. Birds Austral.,' I, p. 21) he states definitely that "examination of Vieillot's type proves that it is not the Lord Howe Island subspecies but the South American." During the interim, however, Mathews had applied three distinct specific names to the form of *Fregetta grallaria* which inhabits Lord Howe Island. It is almost needless to say that the poorly indicated characters of these three "species" are all evident in American Museum series of birds from single breeding localities.

The important point is that the *Fregetta grallaria* of the western South Pacific is a different race from that inhabiting the waters off the west coast of southern South America. The distinction is one of size, and the following figures are more revealing than pages of description.

Measurements of Two Random Series of *Fregetta grallaria*

	WING	TAIL	EXPOSED CULMEN	TARSUS	MIDDLE TOE WITH CLAW
5 breeding males of <i>F. grallaria grallaria</i> (Vieillot), Goat Island, Masatierra, Juan Fernandez, Chile, Jan. 3-19, 1914. R. H. Beck.	151-158 (153.9)	72-75 (72.8)	12.6-14 (13.3)	34-36 (35.2)	20-22 (21.2)
5 breeding males of <i>F. grallaria</i> , subspecies, Rapa Island, Austral Group, Feb. 15-20, 1922. R. H. Beck.	179-186 (181.6)	79-84 (82)	15-16 (15.3)	39-42 (40.5)	23.6-26 (25)

The indicated differences are so great that they are not bridged, or even nearly bridged, by individual variation among scores of specimens studied.

Kinghorn and Cayley (*loc. cit.*, pp. 88, 89) have taken the pains to publish a sketch and the measurements of Vieillot's type skin. These

authors follow tradition in considering the seas of "Nouvelle Hollande" as the type locality; but their own figures contradict them, for the dimensions of the type match those of the Juan Fernandez specimens given above. Therefore, although Mathews neglected to record the evidence, his conclusion appears to be correct.

Now accepting Juan Fernandez as the breeding ground of topotypical *Fregetta grallaria grallaria* (Vieillot), the writer is faced with difficulty in finding a subspecific name for the Rapa bird. The latter is presumably the same as the Lord Howe Island form, but there is no way of judging from the published descriptions, even though Mathews has written them thrice. It is not impossible, moreover, that one of the older names may prove available for the bird of the western South Pacific.

Fledglings taken at Rapa have down of a much lighter gray than Juan Fernandez chicks of the same stage of growth. The contour feathers of the dorsal surface, which are broadly edged with white, are also lighter in the young Rapa birds. The difference in size is, however, the outstanding distinction, for downy chicks from Rapa have larger bills than adult birds from Juan Fernandez.

Variation in the series of breeding adults from Rapa is due chiefly to plumage abrasion. The most interesting individual peculiarity is the sprinkling of dark-shafted feathers along the flanks of certain specimens. This looks like an incipient phase of the streaking which characterizes *Fregetta lineata*. The relationship between these two species is, indeed, far closer than has been hitherto suspected.

***Nesofregetta albigularis* (Finsch)**

Procellaria albigularis FINSCH, 1877, Proc. Zool. Soc., p. 722 (Kandavu, Fiji Islands).

Nesofregetta albigularis, MATHEWS, 1912, 'Birds Austral.,' II, p. 31.

Specimens from the Line Group (Christmas Island, February, 1921) Marquesas Islands (Hatutu, September, 1922; Huapu, September and October, 1922; Huahuna, November, 1922).

Iris, brown; bill and feet, black, the thin membranes of the web lighter, or appearing so because of their translucence.

Measurements.—(8 males): Wing, 179–194 (186); tail, 94–100 (96); exposed culmen, 16.6–18 (17.3); tarsus, 40–44 (41.6); middle toe with claw, 29–34 (30.6) mm.

5 females: Wing, 178–191 (183.2); tail, 91.5–99 (95.1), exposed culmen, 15.7–17 (16.2); tarsus, 40–44 (42); middle toe with claw, 30–32 (30.6) mm.

The type of this species was taken on the nest at Kandavu on September 10. In the Whitney Expedition series, eggs, as well as young in all stages of growth, were obtained both at Christmas Island in February and at the Marquesas in September and October. The nesting adults, moreover, exhibit a wide range of variation in wear and tone of the feathers.

From the gray down the chicks molt into plumage of the adult type, but usually without dark streaks on throat or belly, and with narrow white edgings on the inner wing quills. In juvenal dress, and also when mature birds show the effects of wear and fading, this petrel bears an extraordinary superficial likeness to *Oceanodroma hornbyi*. In fact, the only notable difference of pattern or color is furnished by the inconspicuous whitish forehead of *hornbyi*. Now, since *Nesofregatta albigularis* has been found breeding at Christmas Island, north of the equator, the species probably ranges far into the North Pacific, and it may well be

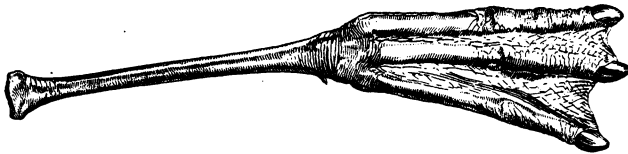


Fig. 2. Left foot of *Nesofregatta albigularis*, ♂, Christmas Island, with the webs expanded to their full extent.

the bird long ago identified from field observation by E. W. Nelson as *Oceanodroma hornbyi* (1887, 'Rep. Nat. Hist. Coll. Alaska, No. 3,' p. 64).

There is much individual variation among our adults with reference to the amount of streaking on belly and throat. Some are immaculate; others have dark-shafted feathers along the flanks, like certain examples of *Fregatta grallaria* described above. Still others, such as two males from Christmas Island and a female from Huapu, are more heavily streaked all across the breast and belly, the condition approaching that of *Fregatta lineata*. A few specimens have the white throat similarly speckled with dark-centered feathers. The rectrices of all are basally white on the inner vanes, as in *Fregatta grallaria*.

This petrel may be considered as an end stage in the evolutionary trend established by the *Fregatta* group. Mathews (1912, 'Birds Austral., II, p. 31) in proposing the new name, *Nesofregatta*, gave no adequate description, but the genus is well worthy of separate ranking. It differs from *Fregatta* in its deeply forked and proportionately elongate tail; in

the great length of the toes, particularly the relative length of the proximal phalanx; in the fact that the third toe rather than the outermost is the longest; and, most of all, in the breadth of the toes and the correlated widening and antero-posterior flattening of the tarso-metatarsus. Compressed tarsi, like those of shearwaters, are familiar among Tubinares, but the extremely depressed tarsus of *Nesofregatta* is unique in this, and perhaps in any other, group of birds.

