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BIRDS COLLECTED DURING THE WHITNEY SOUTH SEA EXPEDITION. IV.¹

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Procellariidæ

Pterodroma rostrata (Peale)

Procellaria rostrata PEALE, 1848, 'U. S. Explor. Exped.,' VIII, p. 296 (Tahiti, Society Islands).

Specimens from the Society Islands (Tahiti, March, September, and December, 1921, April, 1923; Moorea, June and July, 1921); Marquesas Islands (Hivaoa, November, 1922).

Birds just beginning to excavate their burrows were captured on March 11; well-grown young were taken from nests at Moorea on July 2 and 8, their plumage being like that of adults.

The specimens exhibit considerable variation in the amount of brown along the sides of breast and belly. In other respects they are very uniform. As will be pointed out below, there is no reason for confusing this species with *Pterodroma parvirostris* (Peale), or for regarding the two as subspecifically related.

MEASUREMENTS.—(10 males): Wing, 288–308 (297); tail, 110–120 (115); exposed culmen, 36–39 (37); bill from gape, 46–49 (48); tarsus, 47–50 (49); middle toe with claw, 56–64 (60) mm.

5 females: Wing, 286–302 (295); tail, 107–120 (114); exposed culmen, 35–39 (37); tarsus, 45–49 (47); middle toe with claw, 57–61 (58.6) mm.

Nesting birds had worn down their claws, as is common among burrowing petrels. This accounts for the high range in the measurement "middle toe with claw."

Pterodroma becki, new species

SPECIFIC CHARACTERS.—Resembling *Pterodroma rostrata* in color pattern and general proportions, but more than one-fourth smaller, with a relatively weaker bill.

ADULT FEMALE.—Dorsal surface, head, neck, breast, and quills, blackish brown (No. 3 of Ridgway where most intense); feathers of back showing indefinite fuscous-black margins, those of the breast approaching fuscous, perhaps because of fading; concealed portions of the feathers throughout dark plumage, grayish; ventral surface, caudad from the line of demarcation bounding the dark breast, white, laterally washed

¹Previous papers in this series comprise American Museum Novitates, Nos. 115, 124 and 149.

with blackish brown; under tail coverts proximally and centrally pure white, the lateral feathers with more or less blackish brown on their outer webs, the longer central coverts distally fuscous-black on both webs; shafts of wing and tail quills basally white, the inner vanes of the remiges grayish but nowhere white. Iris, brown; bill, black; legs and feet, particolored (black and flesh) in the usual style of white-breasted members of the genus. Outermost primary longest, with an increasing proximal gradation of the quills; tail, of 12 rectrices, rounded-cuneate as in *P. rostrata*.

TYPE.—No. 235,376, Amer. Mus. Nat. Hist.; ♀ ad.; lat. 155° E., long. 3° S; January 6, 1928; R. H. Beck.

MEASUREMENTS.—Type: Wing, 245; tail, 98; exposed culmen, 25.6; bill from gape, 35; width of maxilla at base, 11.7; tarsus, 36; middle toe with claw, 45 mm.

RANGE.—Known only from the type locality, which is east of New Ireland and north of Buka and Bougainville Islands, Solomon Group.

The type skin is the only specimen. The new bird is a miniature edition of *Pterodroma rostrata*, except that the bill seems to be relatively, as well as absolutely, more slender. The size distinction being greater than any yet recognized as subspecific among petrels, I have assigned specific rank to the new form.

It should be stated that while *Pterodroma becki* bears so close a resemblance to *rostrata*, it is not in any particular way reminiscent of *Pterodroma parvirostris*. Mathews (1927, Syst. Av. Australasiae, p. 119) has grouped *rostrata* and *parvirostris* as races of one species, a step taken, perhaps, on the evidence of Cassin's incomprehensible plate and in the absence of adequate specimens for comparison.

It seems appropriate that the name of Rollo H. Beck, who has collected more Tubinares than any other man, should be commemorated within the group, and the receipt of this very interesting undescribed petrel gives an opportunity to pay him a well-deserved tribute.

Pterodroma parvirostris (Peale)

Procellaria parvirostris PEALE, 1848, 'U. S. Explor. Exped.,' VIII, p. 298 (Pukapuka Island, Tuamotu Group); CASSIN, 1858, idem, Atlas, Pl. XL.

Specimens from the Line Group (Christmas Island, February, 1921); Marquesas Islands (Huapu and Motuiti, September, 1922; Hatutu, September and October, 1922; Fatuhuku, November, 1922); Phoenix Islands (Phoenix, Canton, and Hull, March, 1924).

Nesting adults, and young in all stages of development, were taken at Christmas Island between February 10 and 16. Nestlings which had molted most of their down were found at Hatutu Island, Marquesas Group, during September and October.

Peale's type is said to have come from Pukapuka (Henuake, Honden,

or Dog) Island, in the eastern part of the Tuamotu Archipelago. The members of the Whitney Expedition did not, however, encounter the species during their extensive work among the Tuamotus.

All our specimens apparently belong to a single race, those from the different insular groups showing no constant variation in either appearance or dimensions.

Pterodroma parvirostris is readily distinguishable from *P. rostrata* by the following characteristics: smaller size, with overlapping in no dimension except length of tail; blacker coloration throughout the dark parts of the plumage; whitish throat; white infraorbital stripe, with a suggestion of a similar white line above the eye; barred under tail coverts; disproportionately small legs and feet. With regard to the last, the tarsus of *parvirostris* is even shorter than that of *becki*, although the latter is much the smaller bird. The graph (Fig. 1) shows the size relationship of the three species. *P. parvirostris* is probably not closely akin to either of the other two, but may have its nearest affinities with the *heraldica* group of petrels.

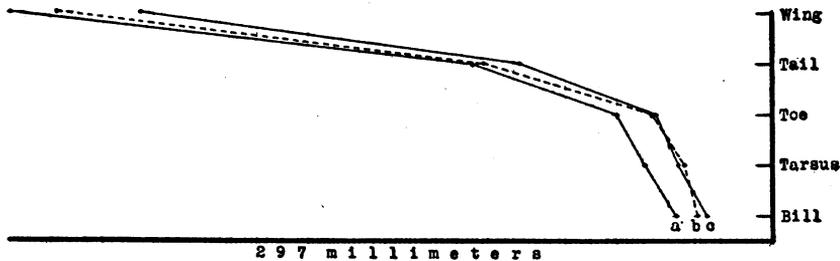


Fig. 1. Relative size and proportions of (a) *Pterodroma rostrata* (average of 10 specimens), (b) *P. parvirostris* (average of 10 specimens), and (c) *P. becki* (1 specimen). The distinction between *rostrata* and *becki* is one of size; *parvirostris* differs markedly from both in proportions, as is shown by the relation of the broken line (b) to the nearly parallel curves for the two other species.

The dark parts of the plumage in *P. parvirostris* are sooty, with little or none of the rich brown or fuscous appearance so characteristic of *rostrata*. The concealed bases of the feathers on the throat and upper breast, however, are white, and the whiteness of the throat patch seems to be largely a question of wear. All specimens show at least a suggestion of this patch, and in many the triangular white area is large and practically immaculate.

The down of newly hatched chicks is close to dark Quaker drab in color, slightly lighter on the ventral surface. The hue of the secondary

down, which fades with age, belongs in the neutral gray series, between the deep and the pale, of Ridgway.

The following measurements are based upon skins from all of the localities represented in the collection.

MEASUREMENTS.—(15 males): Wing, 272–284 (278); tail, 106–114 (111); exposed culmen, 27–30 (28.7); tarsus, 33–36 (34); middle toe with claw, 44–47 (45.7) mm.

5 females: Wing, 265–289 (275); tail, 108–115 (110.4); exposed culmen, 28–30 (29); tarsus, 32–35 (33.5); middle toe with claw, 43–46.5 (44.5); mm.

***Puffinus lherminieri polynesiae* Murphy**

Puffinus lherminieri polynesiae MURPHY, 1927, Amer. Mus. Novit., No. 276, p. 8 (Tahiti, Society Islands).

The range of this recently described form is extended into the Tonga Group by a male collected five miles east of Fatumanga Island on August 8, 1925. Its measurements are: Wing, 204; tail, 80; exposed culmen, 29; tarsus, 40; middle toe with claw, 41 mm.

A female from Huapu Island, Marquesas Group, likewise represents a new locality.

***Puffinus lherminieri nugax* Mathews**

Puffinus lherminieri nugax MATHEWS, 1912, 'Birds Austral,' II, p. 72 (off Townsville, Queensland); MURPHY, 1927, Amer. Mus. Novit., p. 12 (Melapav Island, New Hebrides).

Four additional specimens of this hitherto little-known shearwater were taken at sea, 30 miles east of Melapav Island, on January 28, 1927, by Dr. Drowne and Messrs. Beck and Hicks, of the Whitney Expedition. These confirm the distinctness of the subspecies. A male and three females are in a more worn state of plumage than the neotype, but they show all the characteristics of the race as regards the peculiar pattern and the uniformly large size.

Following are the dimensions of all the known specimens, comprising the neotype and the four here recorded (1♂, 4♀): Wing, 207–213 (209); tail, 73–77 (75.5); exposed culmen, 29–31 (30.1); width of bill at base, 11–12 (11.7); tarsus, 41–43 (42); middle toe with claw, 43–46 (44.5) mm.

Hydrobatidae

***Fregatta grallaria titan*, new subspecies**

Fregatta grallaria, subspecies, MURPHY, 1924, Amer. Mus. Novit., No. 124, p. 9 (Rapa Island, Austral Group).

SUBSPECIFIC CHARACTERS.—Differs from *Fregetta grallaria grallaria*, of the Juan Fernandez Islands, eastern South Pacific, in its much larger size in all dimensions.

TYPE.—No. 193,197, Amer. Mus. Nat. Hist.; ♀ ad., nesting; Rapa Island, Austral Group, South Pacific; February 15, 1922; R. H. Beck.

RANGE.—Known only from Rapa and the adjacent waters.

Measurements of a larger series than was made use of in the paper cited above give the figures recorded below. Females slightly exceed males in size, as indicated by the averages and by the fact that all the maxima are derived from females.¹

	Wing	Tail	Culmen	Tarsus	Middle Toe with Claw
17 ♂	181	82.4	15.4	40.6	25.1
10 ♀	184.1	83.8	15.5	41.6	25.8
Minimum of the series	177	78	15	39	23.6
Maximum of the series	188	89	16.3	43	27

Rapa, or Oparo, is a southern outlier of eastern Polynesia, situated well to the southward of the Tropic of Capricorn. Doubtless the extreme isolation of the island as a breeding station serves to account for the distinctness of the form of *Fregetta grallaria* which occurs there. Rapa specimens, for example, average about 16 per cent larger than specimens of the typical form from Juan Fernandez. They are also larger, though less pronouncedly so, than the bird of Lord Howe Island, which Mathews has named *insularis*. Further details concerning the subspecies here described as *titan* will be found in the paper cited above.

¹In this connection it is of interest that twelve females of *Fregetta grallaria grallaria* from Juan Fernandez also average larger than fifty-one males.

