

## The Breeding of the Sooty Shearwater (*Puffinus griseus*) on Tasman Island.

By Frederic Wood Jones.

It is rather remarkable that neither Littler<sup>(1)</sup> nor Lord and Scott<sup>(2)</sup> included the Sooty Shearwater (*Puffinus griseus*) among the Tubinares inhabiting Tasmanian waters. It is equally remarkable that Leach,<sup>(3)</sup> in the earlier editions of his useful little book, omitted to include this bird in the Australian avifauna, the omission being the more remarkable in that he claims to include all the birds met with in Victoria and Victorian waters. Leach indicated that such rare Petrels as *Priocella glacialisoides*, *Daption capense* and *Halobaena caerulea* were common in Australian seas, but made no reference whatever to the presence of *Puffinus griseus*.

As a matter of fact, if birds cast by the waves upon the beaches are carefully examined, it will nearly always be found that among the numerous examples of *P. tenuirostris*, which are at times strewn along the coast, some specimens of *P. griseus* are present. At Eddystone Point in Tasmania, on the beaches of Deal Island in the Bass Straits, and upon the southern shores of Victoria, from Gabo Island on the east to Portland on the west, I have found the remains of *P. griseus* among the, usually more abundant, carcasses of *P. tenuirostris*.

It should be stated at the outset that, in dealing with wave-cast birds recovered from the beaches, the plumage may not be in perfect or even in nearly perfect condition. Nevertheless, though the majority of birds so collected are useless so far as preparing cabinet skins is concerned, they are often singularly complete when cast beyond reach of the waves and dried in the sun. But no matter how perfect the plumage may be, it does not afford so safe a criterion for specific diagnosis as does a series of measurements, when the differentiation between *P. tenuirostris* and *P. griseus* is in question. The present writer is in entire agreement with Taverner<sup>(4)</sup>, who maintains that *P. tenuirostris* "may be regarded as a smaller form of the Sooty Shearwater." This view of the two species is obviously shared by Loomis<sup>(5)</sup>, for he states:—"The relationship is very close between *P. tenuirostris* and *P. griseus*," and he admits only the length of the culmen as being a real diagnostic character. With this opinion the present writer is in complete agreement as the

result of measuring a very large number of wave-cast specimens. With these findings in mind, it is very difficult for an anatomist to follow Mathews<sup>(6)</sup>, who, in his latest revision of the Tubinares, places these two birds in different genera.

The Sooty Shearwater is a larger, heavier, and more robustly built bird than is the so-called Slender-billed Shearwater, and it has a larger skull and longer bill. But it must be remembered that the bill of *P. tenuirostris* is not relatively, nor even always absolutely, more slender than is that of its larger relative. *P. griseus* is the Mutton Bird of New Zealand, and *P. tenuirostris* is the Mutton Bird of the Southern Australian and Bass Straits Islands. In most descriptions of the breeding of Mutton Birds these two species are hopelessly confounded. In the otherwise excellent account given by Bent<sup>(7)</sup> this confusion is at once apparent to the worker in Australia, for the larger New Zealand bird and its smaller Australian representative are inextricably mixed up in description.

But the question must naturally arise that, since *P. griseus* has been so consistently overlooked as an inhabitant of Tasmanian and Australian waters, it may possibly have been overlooked as a breeding species within this area.

I visited Tasman Island, which lies off Cape Pillar, S.E. Tasmania, on November 27th, 1933.

I examined a fairly extensive Mutton Bird rookery. All the breeding birds that I examined were typical specimens of *P. tenuirostris*, and, having had several specimens in my hands, I left them undisturbed. The only peculiarity about the rookery was that the birds made no burrows into the earth, but laid their eggs at the end of tunnels in the thick undergrowth which clothes this island. This condition made the examination of the sitting birds and their newly-laid eggs a simple matter. Only one egg was taken for the purposes of measurement. It was only when on the point of re-embarking, after the somewhat hazardous business of landing and of attaining the summit of the island (some 1,000 feet above sea level) that I was asked by members of the, then, head keeper's family, if I had visited the breeding place of the "King Mutton Bird." It was impossible to regain the summit of the island before the time for re-embarkation, and so I had to content myself with learning that the "King Mutton Bird" was like the ordinary Mutton Bird, but larger. The breeding colony of the "King Mutton Bird" was separated from the area inhabited by the ordinary Mutton Bird that I had visited. I was forced to leave

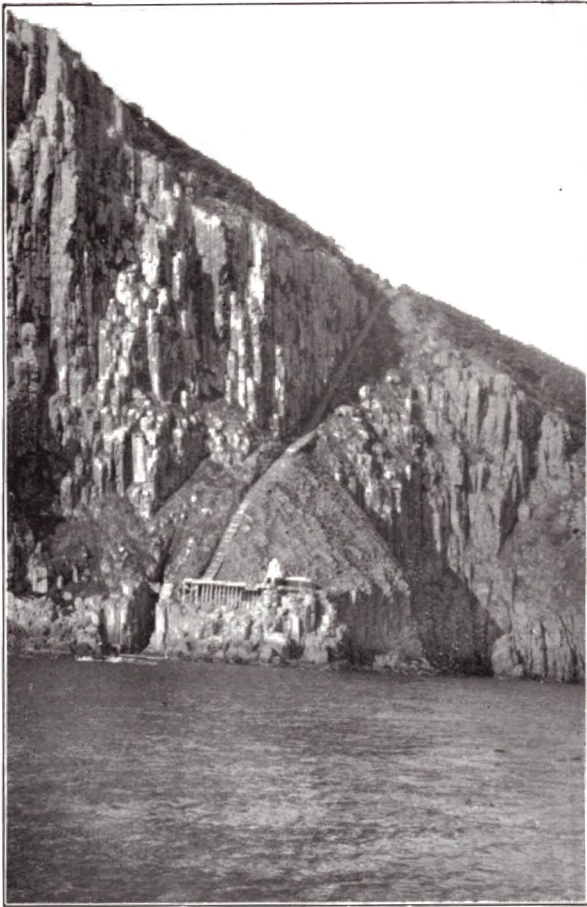


Plate XI.—The Landing Platform on Tasman Island.

the island with the knowledge that a Shearwater, like the common Bass Straits Shearwater but larger, had a breeding colony on Tasman Island. The natural presumption was that this larger Shearwater was *P. griseus*: but repeated efforts failed to secure specimens either of the bird or the eggs. It was not until April, 1936, that, owing to the enterprise of Mr. McCarthy, head keeper, and the kindness of Captain Clare, master of the S.S. "Cape York," I obtained the bodies of two dried birds and five eggs.

The measurements in mm. of the two incubating birds are as follows:—

	Wing.	Length of culmen.	Breadth.	Tarsus.
A.	302	42	17	52
B.	305	42	17	54

The means of the measurements recorded by Loomis for both sexes of *P. griseus* are as follows:—

Wing.	Length of culmen.	Breadth.	Tarsus.
300	42	16	53

The corresponding average measurements for *P. tenuirostris* are as follows:—

Wing.	Length of culmen.	Breadth.	Tarsus.
278	33	14.5	48.2

Loomis lays it down as a diagnostic criterion that in *P. tenuirostris* the culmen is from 29.7-35 mm., while in *P. griseus* it is from 38.3-47.3 mm. It would, therefore, appear that the "King Mutton Bird" of Tasman Island was quite definitely *P. griseus*. As for the eggs collected by Mr. McCarthy, their measurements are 78 x 48, 76 x 49, 76 x 48, 73 x 46, and 72 x 47. The eggs of *P. tenuirostris*, measured by the writer, vary from 78 x 45 to 63 x 42, with an average (for forty specimens) of 72.3 x 45.7. Bent gives the average for eggs of *P. griseus* as 74 x 48, and for those of *P. tenuirostris* as 71 x 47. It is quite obvious that there is a wide overlap in measurements between the eggs of these two nearly allied species, since the egg of *P. tenuirostris* may be as large as 78 x 45, and that of *P. griseus* (according to Bent) as small as 58.5 x 42.5. Notwithstanding this overlap, the five eggs from the "King Mutton Bird" colony of Tasman Island, with their average of 75 x 47.3, exceed the average of 72.3 x 45.7 of the Bass Straits *P. tenuirostris*.

It seems, therefore, safe to affirm that, even with our present insufficient knowledge of the specific variations of the Tubinares, there is breeding on Tasman Island a Shearwater that is larger than our familiar *P. tenuirostris*, and which falls within the specific diagnosis of *P. griseus*. And it must be added that this note is written, not merely to record a new breeding area for this bird within Australian and Tasmanian seas, but to direct attention to the fact that it is not enough to record the presence of breeding Mutton Birds on any island, for every colony should be examined and the measurements of the birds and of their eggs recorded.

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