

# LEACH'S STORM PETRELS (*Oceanodroma* *l. leucorhoa*) PROSPECTING FOR NEST SITES ON THE CHATHAM ISLANDS

By M. J. IMBER and T. G. LOVEGROVE

## ABSTRACT

In November 1980, two Leach's Storm Petrels of the typical subspecies were discovered on Rabbit Island, Chatham Islands (44°14'S, 176°16'W), engaged in prebreeding activity. They were captured, examined, photographed, banded and released. The flight calling of one was recorded on tape. Their nocturnal activity continued until observations ceased. A subsequent check indicated that no chick was reared. Possibly they were of the same sex, and possibly there were only two. This is the first record of prospecting for nest sites in the Southern Hemisphere by this strictly Northern Hemisphere breeding species.

## INTRODUCTION

The storm petrels (Hydrobatidae) are divisible into three predominantly short-legged northern genera, typified by *Oceanodroma*, and five long-legged southern genera of which only *Pelagodroma*, other than tropical *Nesofregetta*, has established itself transequatorially (Jouanin & Mcugin 1979). *Oceanodroma* species are restricted as breeders to the Northern Hemisphere, the tropics, or the north-west coast of South America. Leach's Storm Petrel, *O. l. leucorhoa* (Vieillot), breeds on islands in the North Pacific and North Atlantic Oceans, mainly between 40°N and 70°N (Cramp & Simmons 1977), but a few *leucorhoa* and smaller sometimes darker subspecies breed at lower latitudes in the eastern Pacific (Ainley 1980). The typical race migrates south to winter in the tropics (Murphy 1936, Crossin 1974). It straggles rarely further south: Bierman & Voous (1950) reported a single sighting at 57°40'S, 5°E in Antarctic seas; but there have been only three previous records from New Zealand, all storm-driven waifs found dead (Oliver 1955, Fooks 1978, Veitch 1980). There are no previous reports known to us of Leach's Storm Petrels voluntarily making landfall in the Southern Hemisphere.

Rabbit Island (44°14'S, 176°16'W) of approximately 5 ha, which is among the smallest of the Chatham Islands, lies off the north-west tip of Pitt Island (Fig. 1). It is crowned by 1.2 ha of windswept scrub, mainly *Olearia traversii* up to 4 metres high, which is surrounded by *Poa* tussocks, *Carex trifida* sedges, and Chatham Islands sowthistles (*Embergeria grandifolia*) forming low cover or thickets up to 0.6 metres high. Despite the name of the island, it has no introduced mammals.

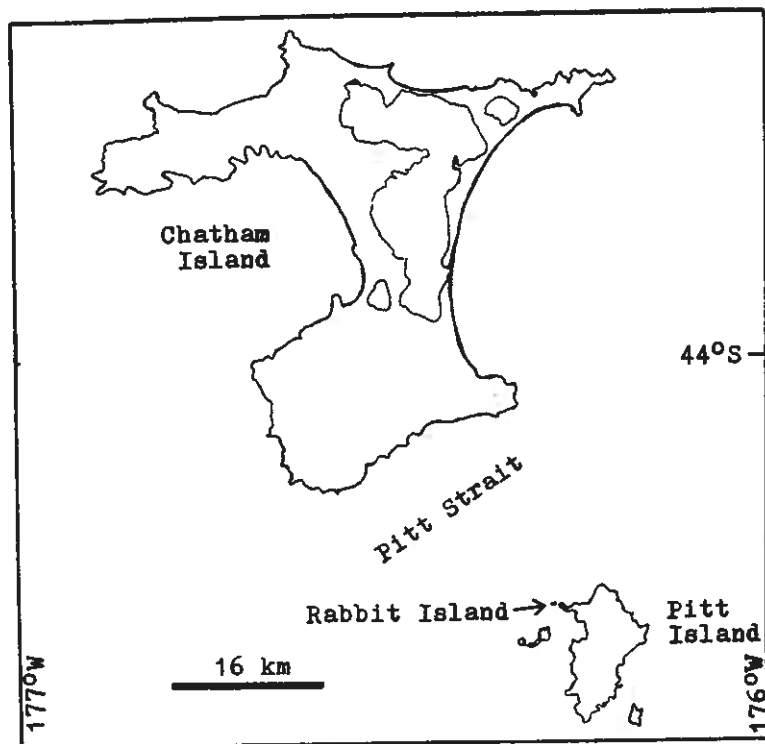


FIGURE 1 — Map of the Chatham Islands showing the location of Rabbit Island

Little ornithological study has been done on Rabbit Island. Nevertheless, the Whitney South Sea Expedition collected nestlings of White-faced Storm Petrels (*Pelagodroma marina*) there in March 1926 (Murphy & Irving 1951). Two diurnal visits, neither lasting more than a few hours, have been made by Wildlife Service officers in the last 15 years (D. V. Merton, unpubl. rept., Internal Affairs Dept. files). Chatham Islanders take muttonbirds (*Puffinus griseus*) from the colony of several hundred pairs (M. Dix, pers. comm.). It was on the basis of a report of an unusual, large, white-bellied petrel handled recently by a muttonbirder that we landed on Rabbit Island on 31 October 1980, in connection with the current search for a nesting place of the Chatham Island Taiko (*Pterodroma magentae*).

#### FIELD OBSERVATIONS

Daytime searches, being for Taiko, concentrated on the larger burrows that might be used by a large *Pterodroma*. At night we used

a spotlight to identify petrels flying over and made ground searches all over the island. We thus assessed the breeding population of petrels as comprising many hundreds of pairs of White-faced Storm Petrels, Fairy Prions (*Pachyptila turtur*) and Sooty Shearwaters (*Puffinus griseus*), over 100 pairs of Grey-backed Storm Petrels (*Garrodia nereis*) and Broad-billed Prions (*pachyptila vittata*) and a few pairs of Common Diving Petrels (*Pelecanoides urinatrix*). No evidence for breeding of any *Pterodroma* species was found.

On our first night ashore we heard a brief call, a quiet cackle, which we recorded as possibly a Little Shearwater (*Puffinus assimilis*) flying over some distance from us. Next evening, 1 November 1980, at 2330 h, MJI was standing by an area of knee-high *Cyperus-Embergeria* vegetation when he heard the quiet cackle again. This time, however, the source was close by and obviously in this dense vegetation. It did not now sound like a Little Shearwater. After careful stalking, he caught a white-rumped, black storm petrel. Apart from astonishment, his first impressions were as follows: The legs were not long with pale webs as expected (*Oceanites*) but short, quite small, and black (*Oceanodroma* or *Hydrobates*). The underwing was all dark (not *Hydrobates*). The rump patch was somewhat divided and the tail forked. It therefore seemed to be Leach's Storm Petrel.

Back at camp, TGL avers, MJI announced his return thus. "I haven't got the Taiko but I think I've got the consolation prize." The bird was measured and weighed (Table 1), photographed (Fig. 2-4), sketched (Fig. 5), fully described, banded and released.

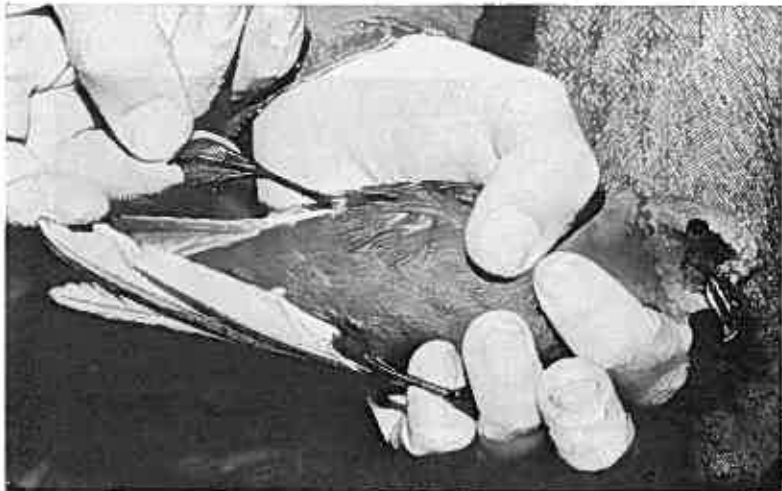


FIGURE 2 — Ventral view of bird 1. Note the small black feet with short tarsi, the restricted amount of white on the flanks, and the high forehead

Photo: T. G. Lovegrove



FIGURE 3 — Dorsal view of bird 1. Note the upperwing bar, the rump patch, and the forked tail

Photo: T. G. Lovegrove



FIGURE 4 — Close-up of the rump and tail of bird 1. Note the dark tips to the distal upper tail-coverts and the darker central coverts tending to divide the white rump.

Photo: T. G. Lovegrove

The bird was in fresh plumage except for very few old feathers on the back. The incubation patch was downy. General colour was greyish black above, darkest on the quill feathers, brownish black below, and with an upperwing bar (Fig. 3) of greyish brown, which at first glance seemed to be caused by fading. The white rump patch (Fig. 3, 4, 5a) was divided only distally, hardly extended at all on to the flanks (Fig. 2), and had dark tips and shafts to some of the distal, outer upper tail-coverts (Fig. 5a); the central upper tail-coverts were dark grey, thus dividing the rump patch distally. The call, uttered from the ground by this bird, began with *kuk-kuk*, running into a 'chuckle' or 'giggle' on an ascending then descending scale. As we discovered later, this bird was very discreet with its calls. Subsequently we heard presumably the same individual (bird 1) calling again from the same patch of vegetation on the nights of 5/11 and 10/11 (our last night of that visit). On the last night it was uttering the churring call (see below).

Between midnight and about 0200 h on 5 November, the chuckling call of a Leach's Storm Petrel was heard near our camp, coming from a bird flying over a patch of vegetation similar to that in which the first capture had been made. Its call was noted as *kuk-ku-huk* - giggle. At about 0230 h, when the chuckling had ceased, a quite different call was heard from deep in the vegetation: a prolonged loud churring on a slowly rising pitch, regularly interspersed with *ik* (possibly inhalations). This call was easily traced to a 0.5-metre-long burrow from which MJI drew an unbanded Leach's Storm Petrel. This one, bird 2, was also measured, weighed (Table 1), and sketched (Fig. 5b) but not photographed. It was also banded and released.

TABLE 1 — Measurements (mm) and weight (g) of two live Leach's Storm Petrels captured on Rabbit Island, Chatham Islands, in November 1980

	Bird 1	Bird 2
Culmen	17.2	16.5
Tarsus	24.6	24.2
Mid-toe and Claw	25.6	24.9
Wing	154	158
Tail: centre	61	66
outer*	83	79
Depth of fork	22	13
Weight	49.5	47

\* base of central to tip of outermost

Bird 2 was entirely in fresh plumage and had a downy incubation patch. As well as being more vocal than bird 1, it struggled incessantly during handling, whereas bird 1 had been docile. Their rump patches are compared in Fig. 5: that of bird 2 was more completely divided, but the tips and shafts of the distal upper tail-coverts were less dark. The wing bar, noted as fawn brown, was considered to be more prominent in bird 2.

On the nights of 7/11 and 8/11 a bird, presumably bird 2, was again heard calling in flight over the same area near our camp, but it was not heard calling from the ground again. On 7/11, a sound recording of its flight call was made on a Uher Report 4000 tape recorder. Recordings were also made of White-faced Storm Petrels and Grey-backed Storm Petrels, whose calls are made only from the ground and usually from the nest. These latter recordings both have the flight call of a Leach's Storm Petrel, presumed to be bird 2, audible in the background. These tapes have been deposited in the sound library of the Wildlife Service in Wellington.

We left Rabbit Island on 11 November 1980. At that time we could be sure of only two Leach's Storm Petrels visiting this island. Assuming that the calls heard later from the two areas of activity came from the birds caught in those two areas, our handling of them

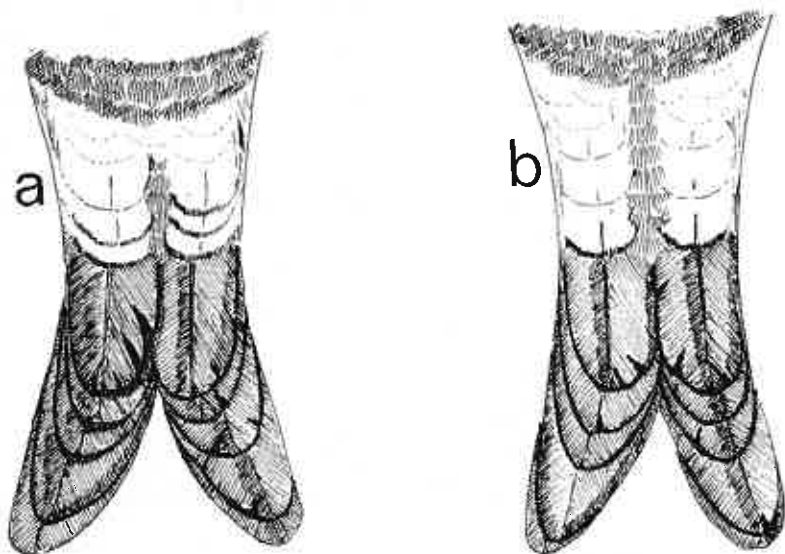


FIGURE 5 — Semi-diagrammatic sketch of the rumps of two Leach's Storm Petrels, Rabbit Island, 1-5 November 1980. Drawn by T. G. Lovegrove.

a: Bird 1. b: Bird 2.

had had little effect on their behaviour, except that bird 2 seemed more reluctant to land and apparently had deserted the burrow in which it had been caught. As prebreeding petrels are known to be very sensitive during the early stages of occupation of a burrow (pers. obs.), the desertion was to be expected. At the time of our departure there was no indication of pairing. As we could not sex them, we can only speculate that they were of the same sex.

Between 3 and 9 April 1981 MJI visited Rabbit Island again. In the area where bird 1 had been active, the sowthistles had died down, leaving bare areas of the sandy soil. Attempted burrows of White-faced Storm Petrels, and possibly of the Leach's Storm Petrel, had collapsed, and there was evidence of successful breeding only of Grey-backed Storm Petrels, nesting in the *Carex* tussocks. In the area that had interested bird 2, MJI examined the burrow in which the bird had been found and all burrows nearby. This area had more substantial, deeper soil suitable for successful burrowing. The only evidence he found was that several White-faced Storm Petrels had fledged. Thus, actual breeding by the Leach's Storm Petrels in the 1980-81 summer is improbable.

No visit was made in the 1981/82 summer but we hope that a further investigation may be made in 1982/83.

#### DISCUSSION

Back in New Zealand, we consulted the literature to check our preliminary identification. In every respect the two birds fitted the descriptions of the typical subspecies (Murphy 1936, Cramp & Simmons 1977, Ainley 1980), and their measurements lie between the average and the upper end of the range reported (see also Crossin 1974). The culmen of bird 1 actually lies beyond the range for North Atlantic birds reported by Cramp & Simmons (1977) but within the range for central Pacific non-breeding birds reported by Crossin (1974). Their calls were also typical.

However, the birds were fully acclimatised to the reversed Southern Hemisphere seasons. They were in fresh plumage, whereas in the central Pacific, where North Pacific populations spend the winter, "Extensive body molt of the contour feathers in the nominate race begins in November . . ." (Crossin 1974). The breeding season in the Northern Hemisphere begins in April with the first peak of aerial activity reached in May (Cramp & Simmons 1977). Corresponding activity at Rabbit Island was displaced by 6 months. It is interesting that petrels can make such a switch, and it may help our understanding of successful transequatorial shifts, such as those of White-faced Storm Petrels, Soft-plumaged Petrels (*Pterodroma mollis*), and Little Shearwaters in the Atlantic Ocean.

We doubt that there is a breeding population of Leach's Storm Petrels in the Southern Hemisphere. If these two birds came from the north, it seems more likely that they had hatched in the North

Pacific than the North Atlantic, because of relative proximity. Possibly a meteorological event such as a cyclone displaced some birds southwards from the equatorial zone in the Pacific Ocean, where they reach at least 16°S (Crossin 1974). Nevertheless, the two Australian specimens, from the southern and western coasts of Australia, are both suggested as having come from the North Atlantic via the Cape of Good Hope (Serventy *et al.* 1971, J. Warham, pers. comm.). Leach's Storm Petrel is known to reach the seas off the Cape of Good Hope (Cramp & Simmons 1977, Avery 1981).

It is worth noting that, despite considerable beach patrolling in New Zealand since 1950, R. A. Falla's 1922 specimen from Muriwai Beach stood as the sole record until 1978 when two were found (Fooks 1978, Veitch 1980), one blown inland. Conceivably there is a connection between the two 1978 corpses (April, August) and the two live birds at Chatham Islands in 1980. The second Australian specimen was found in April 1978 (J. Warham, pers. comm.).

It is also worth considering the abilities of Procellariiformes to communicate, or at least to interact, at sea. Normally when one observes petrels at sea they seem to be ignoring one another, unless food is involved. Yet two storm petrels, possibly of very few in the South Pacific south of, say, 30°S, managed to find each other at a 5-ha island. If two can do this, and if ironically they happen to be of the same sex, will they be able to attract a mate or mates before they give up or die?

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M. J. IMBER, *Wildlife Service, Department of Internal Affairs, Wellington*; T. G. LOVEGROVE, *R.D. 2, Waitotira, Northland*