

SHORT NOTES

Christmas Island Shearwater *Puffinus nativitatis* on Curtis Island

Curtis Island (30° 33' S, 178° 36' W) is a 52 ha active volcano in the Kermadec group, 1000 km north-east of New Zealand. We camped on the island from 13 October to 12 November 1989 to document the island's flora and fauna.

On the evening 10 November at 21:50 h in bright moonlight and light winds, GAT picked up a small dark shearwater while measuring and banding Wedge-tailed Shearwaters *Puffinus pacificus*. We identified the new bird as a Christmas Island Shearwater *P. nativitatis* after comparing it with nearby Wedge-tailed Shearwaters which it closely resembled in shape and colour (Table 1). However, the bird was clearly smaller (365 g) than any of the 89 Wedge-tailed Shearwaters which we weighed between 19 October and 11 November (mean = 502 g, SD = 40.9 g; range 415-605 g).

TABLE 1 – A comparison between appearances and measurements of Christmas Island, Wedge-tailed and Short-tailed Shearwaters (see Marchant and Higgins 1990)

| | Christmas Island Shearwater | Wedge-tailed Shearwater | Short-tailed Shearwater |
|--------------|-----------------------------|---------------------------|-----------------------------|
| Bill: | Shiny black | Dark blackish-grey | Dark blackish-grey |
| Outer leg: | Black | Mauve to dark brown | Blackish |
| Inner leg: | Black with mauve-grey tinge | Pink to mauve | Flesh pink to purplish pink |
| Webs: | Black with mauve tinge | Fleshy white to pale pink | Flesh pink to purplish pink |
| Tail: | Wedge-shaped, short | Wedge-shaped, large | Rounded, short |
| Plumage: | Blackish | Dark brown | Dark brown-grey |
| Body Length: | 35-38 cm | 38-46 cm | 40-45 cm |
| Wingspan: | 71-81 cm | 97-105 cm | 95-100 cm |
| Weight: | 280-415 g | 300-570 g | 480-800 g |

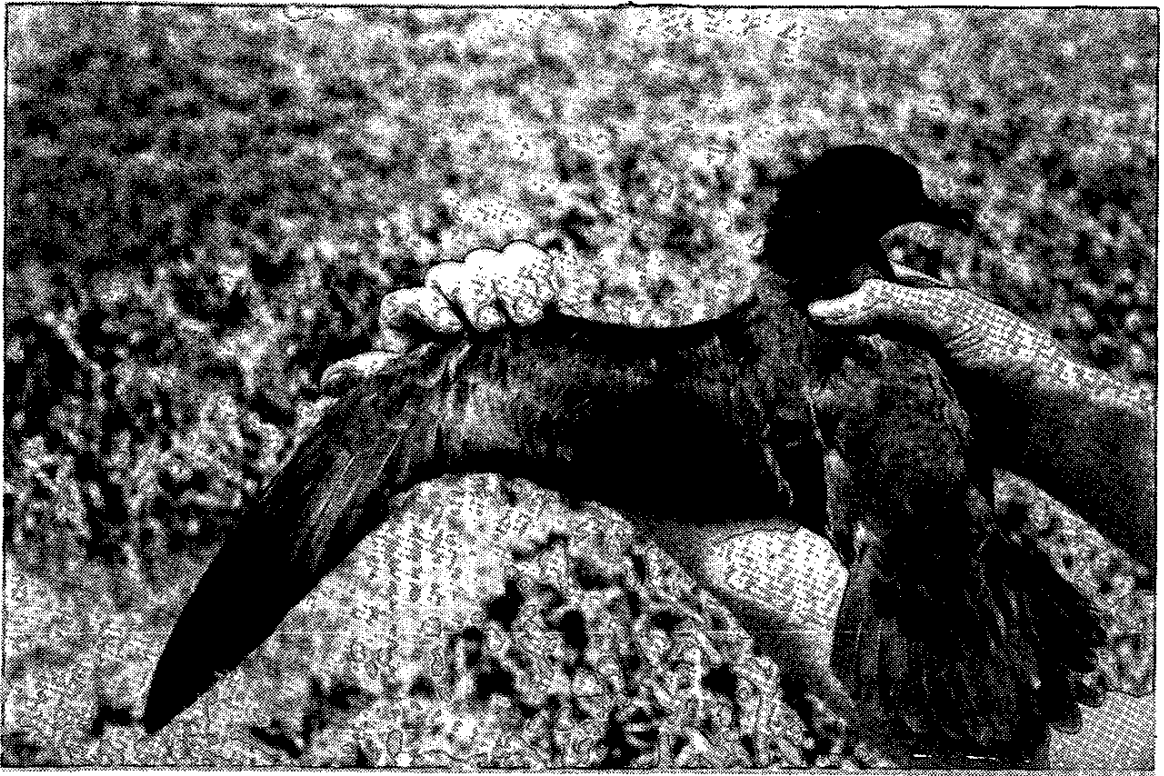
When captured, the Christmas Island Shearwater immediately regurgitated the remains of five 3-5 cm long fish. None of the Wedge-tailed Shearwaters we handled regurgitated food. The Christmas Island Shearwater was relatively docile and did not bite or scratch when handled. This contrasted with the aggressive behaviour of Wedge-tailed Shearwaters; they frequently struggled when handled.

The bird was held overnight, and prior to being released the next day was photographed (see Figure 1), banded (E-177253), and some brief calls it gave were recorded. On being released it flew strongly out to sea with a level gliding flight.

Description

Bill shiny black, iris brown, eyelid white, entire legs black with mauve-grey tinges to webs, inner toes and inner tarsus, claws black. Entire plumage blackish brown except paler brown upperwing covert edges and inner webs of primaries; chin feathers edged with white; underside of wing and tail rectrices silvery.

Two white filoplumes noted on nape; cloaca small; brood patch downy; all plumage fresh or slightly worn, no active moult.



Christmas Island Shearwater on Curtis Island, 11 November 1989.

Photo: G.A. Taylor

Measurements, following Baldwin *et al* (1931) were the following: exposed culmen length 32.4 mm, width of bill at base 11.2 mm, height of bill at base 11.8 mm, tarsus length 48.5 mm, middle toe + claw length 54.5 mm, tail length 90.5 mm, closed wing length 262 mm, wing span 820 mm, total length 365 mm.

Apart from a Wedge-tailed Shearwater, the only other species it could be confused with is a Short-tailed Shearwater *P. tenuirostris*. That species is larger (Table 1) and has a short rounded tail which the feet extend beyond in flight (see Harrison 1987).

Lice

We collected an undescribed species of *Trabeculus* (R. Palma pers. comm.). Other specimens of this louse have been collected previously from Christmas Island Shearwaters in the central Pacific (Wake, Phoenix, and Midway Islands) but were previously unrecognised as being distinct (Amerson & Emerson 1971, Ward & Downey 1973). This louse species is only known from Christmas Island Shearwaters (R. Palma pers. comm.).

Discussion

Christmas Island Shearwaters breed on a number of Pacific islands, mostly in the tropical region (Pratt *et al* 1987). They are uncommon on most breeding islands (e.g. Harrison *et al.* 1984, Schlatter 1984), with the only population greater than 10 000 pairs being at the Phoenix Islands (Garnett 1984).

The only previous report of a Christmas Island Shearwater in the southwest Pacific was of a bird found beach-wrecked near Dargaville, New Zealand, on 29 February 1976 (Crockett 1977).

Christmas Island Shearwaters breed at a few locations south of the Tropic of Capricorn: Oeno (24°), Ducie (25°) (Wragg & Weisler 1994), Sala y Gomez Islands (26°) (Schlatter 1984), Motu Nui off Easter Island (27°), Karapoo Iti and Karapoo Rahi off Rapa (27°) (Holyoak & Thibault 1984), possibly Marotiri (28°) (Holyoak & Thibault 1984, Seitre & Seitre n.d.), and formerly Henderson (24°) (Wragg & Weisler 1994). Contrary to Pratt *et al.* (1987), the species does not breed on Pitcairn Island (25°) (G. Wragg pers. comm. 1994). The nearest breeding colony to Curtis Island appears to be 2030 km away on Ta'u Island (14° S) in American Samoa, although the status of this colony needs confirmation (Amerson *et al.* 1982). The nearest breeding colony south of the Tropic of Capricorn is on islets off Rapa, 3400 km away (Garnett 1984).

The Curtis Island bird is one of the largest Christmas Island Shearwaters recorded, with some measurements falling above the range given for the species at any other locality. The tarsus and middle toe plus claw lengths of the Curtis bird are longer than those measured on any colony, and the wing length is one of the longest recorded (Table 2). Some of these differences are probably because different measuring techniques appear to have been used by different observers and because few measurements are available worldwide. Johnson *et al.* (1970) noted that the wing lengths of birds breeding on islands south of the equator tended to be longer than those breeding north of the equator. Data in Holyoak & Thibault (1984) add further weight to this idea. The Curtis bird is closest in measurements to birds breeding south of the Tropic of Capricorn, e.g. Ducie, Rapa and Marotiri (Holyoak & Thibault 1984), therefore it presumably came from a southern population (see also Table 2).

The occurrence of a Christmas Island Shearwater on Curtis Island raises the possibility that this species breeds at the Kermadecs. Although we found no other Christmas Island Shearwaters on the island, they could have been confused with Wedge-tailed Shearwaters. Christmas Island Shearwaters often nest on the surface under vegetation, or in rock crevices, but they sometimes nest on steep slopes under rocks, or in shallow burrows (Holyoak & Thibault 1984, Harrison & Jehl 1988). Thus other birds could have been overlooked.

Unfortunately, the Christmas Island Shearwater was found on the penultimate night of our stay on the island and therefore we did not have the opportunity to check more closely for other birds. Nevertheless, if a colony was present, it would be very small. Alternatively, the bird was a vagrant which had perhaps been drawn ashore by the calls of the similar sounding Wedge-tailed Shearwater.

Southern populations of the Christmas Island Shearwater lay mainly in spring, with chicks being found from December to March at Gambier, Easter, Ducie, and Sala y Gomez (Johnson *et al.* 1970, Holyoak & Thibault 1984, Harrison & Jehl 1988). Thus the Curtis bird was ashore when most

TABLE 2 – A comparison of measurements (mm) of Christmas Island Shearwaters from breeding populations north and south of the Tropic of Capricorn* and the bird captured on Curtis Island

| Locality | Culmen | Wing | Tail | Tarsus | Middle Toe + Claw |
|------------------------------|---------------------|----------------------|-------------------|---------------------|-------------------|
| North of Tropic of Capricorn | 29-37 (n = 73) | 223-260 (n = 153) | 81-97 (n = 63) | 39.5-48 (n = 63) | - |
| South of Tropic of Capricorn | 30-35 (n = 25)** | 240-266 (n = 33) | 81-95 (n = 29) | 42-46 (n = 25)** | 51.5 (n = 1) |
| Curtis Island | 32.4 | 262 | 90.5 | 48.5 | 54.5 |

* Data from Johnson *et al.* (1970), Holyoak and Thibault (1984), Marchant and Higgins (1990). Measurements of the Oeno Island bird given by Williams (1960) were not used because we believe this is the same specimen as the "single adult male" in Marchant and Higgins (1990) whose measurements we included. Note that the two female Easter Island tarsus measurements in Marchant and Higgins (1990) have been wrongly placed in the table row for the "single adult male".

**Easter Island culmen and tarsus measurements in Johnson *et al.* (1970) are not included as they are very different to all other specimens measured and were presumably taken using a different method.

breeders in southern populations are incubating, so its downy brood patch suggests that it may have been immature.

The breeding status of this species on Curtis Island awaits further investigation.

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Survey of North Island Robins on Moturua Island, Bay Of Islands

Sixteen North Island Robins *Petroica australis longipes* from Mamaku Plateau, Bay of Plenty, were liberated on 135 ha Moturua Island in February 1986 (S Anderson pers. comm.). Fourteen birds were found in June 1987 indicating that initial post-release survival and/or breeding success was high, but only seven birds were found in 1989 (R Parrish pers. comm.).

On 1-2 June 1994 a team comprising G Grant, I May, B Walsh, M Robinson (OSNZ, Northland), and M McGlynn and myself (Department of Conservation, Northland) surveyed the Moturua Robin population. Our methodology comprised playing taped Robin calls to attract birds and stationing one of our party to watch one or more birds as the rest of the party moved on. We also noted plumage variation to assist in distinguishing individuals. In 3 or 4 instances, however, we could not be certain of the identity of individuals. In these instances we regarded the individuals as having been counted before.

During our survey we found a minimum of 23 individual Robins. The birds were concentrated in the south-eastern half of the island where the vegetation (predominantly kanuka *Kunzea ericoides* and wattle *Acacia* sp.)