

SHORT NOTE

New Zealand pigeon (*Hemiphaga novaeseelandiae*)
on Raoul Island, Kermadec Group

TREVOR H. WORTHY

Palaeofaunal Surveys, 43 The Ridgeway, Nelson

twmoa@ts.co.nz

ROBERT BRASSEY

Department of Conservation, Private Bag 68908, Newton, Auckland

The Kermadec Group lies about 1000 km northeast of North Island at 29° 15'S, 178° 00'W in the New Zealand archipelago. Its few land birds are all species characteristic of New Zealand: for example, the tui *Prosthemadera novaeseelandiae* (Cheeseman 1891, Sorensen 1964). Only the red-crowned parakeet is distinguished from its New Zealand counterpart, and then only at the subspecific level as *Cyanoramphus novaeseelandiae cyanurus* (Higgins 1999).

survive, the description of a bird that made mounds of sand and decayed leaves 2ft to 3 ft (60 cm to 80 cm) high in which it laid its eggs, most likely pertains to a megapode. Cheeseman recorded the banded rail *Gallirallus philippensis* from the vicinity of the lagoon on Sunday Island, but noted that it was by no means common. However, it has not been recorded since (Sorensen 1964). The last species was a pigeon, said to resemble exactly the New Zealand species in size and

Table 1 List of faunal remains collected from the Upper Settlement Horizon of KO36/1, Raoul Island, Kermadec Group. L, left; R, right.

| Species | Common name | Specimens |
|-----------------------------------|---|---|
| <i>Pterodroma cervicalis</i> | White-necked petrel or Kermadec petrel | 1 proximal R ulna; 2 R coracoids; 1 L femur; 2 distal L, 1 proximal L tibiotarsi |
| <i>Pterodroma cf. nigripennis</i> | Black-winged petrel? | 1 juvenile R, 2 proximal R, 1 proximal L humeri; 1 proximal R coracoid |
| <i>Cyanoramphus sp.</i> | Parakeet | 1 L ulna |
| <i>Hemiphaga novaeseelandiae</i> | New Zealand pigeon | 1 L humerus |
| <i>Rattus cf. exulans</i> | Polynesian rat | 1 R femur |
| <i>Rattus cf. norvegicus</i> | Norway rat | 1 part L femur |

Three of the terrestrial species recorded in the 1800s are now extinct in the Group. One of these was an undetermined megapode that lived on Raoul (Sunday) Island until the eruption of 1870, whereafter it was extinct (Cheeseman 1891). Though no specimen is known to

colour, which was exterminated by hunting and predation by cats (Cheeseman 1891). No specimen exists for any of these species.

The fossil or archaeological deposits on the island have considerable potential to provide specimens of these and other species, and so to verify these, so far unsubstantiated, records. Thus was of considerable interest to find a pigeon bone among a small number of



Fig. 1 Left humeri of *Hemiphaga novaeseelandiae* in caudal (upper) and cranial (lower) views. Left, bone from Raoul Island; right, specimen from Dunedin, Otago Museum Av846.

bones recently collected from an archaeological site on Raoul Island.

The faunal assemblage was collected by RB in November 1998 from the Polynesian occupation site (K036/1) at Low Flat, Raoul Island. The site, which has been investigated by Anderson (1980) and Johnson (1995), consists of two buried cultural horizons, separated by a deposit of volcanic tephra. The lower cultural horizon consists of a dark soil layer containing charcoal, sparse faunal and artefactual material, and occasional cultural features, and is exposed along most of the length of the coastal escarpment at the back of Oneraki Beach. At the southeastern end of the beach, the volcanic deposits are overlain by a second, similar horizon (upper cultural horizon) of limited geographical extent.

Radiocarbon dating of the site suggests that the two phases of settlement at the Low Flat site represent a relatively brief period of Polynesian occupation during the 14th century AD (Higham & Johnson 1997). The first phase, which may have been an attempt at permanent settlement, was terminated by a volcanic eruption, which buried the site. The settlement was briefly re-established at the southeastern end of Low Flat, but the island was evidently permanently abandoned soon after.

The faunal remains (Table 1) recovered in November 1998 were surface collected from the coastal escarpment at the southeastern end of Oneraki Beach. In this vicinity, both cultural horizons are exposed in a steep eroding face and are buried beneath almost 8 m of dune sand. Most of the bone was *in situ* and clearly associated with two earth ovens exposed in the upper cultural horizon. However, as the two horizons are only about 1 m apart, and some of the material was found just downslope from the lower horizon, it is possible that some of the bone may have derived from the lower horizon.

The pigeon bone is a complete left humerus with damage limited to a little erosion on the deltoid crest. It has the following measurements: length 68.29 mm, proximal width 18.44 mm, mid-shaft width 7.35 mm, distal width 14.18 mm. It cannot be distinguished from bones of New Zealand pigeons, for example that of OM Av846 collected in Dunedin (Fig. 1). This fossil specimen (Auckland Museum, Archaeology Department, Object 1999.22.19, code 58791) substantiates the records made by Cheeseman (1891), so *Hemiphaga novaeseelandiae* is now verified as having been part of the Kermadec avifauna, contrary to the doubts expressed by Sorensen (1964). Furthermore, as identification of this bone validates the identification made by Mr Johnson (quoted

by Cheeseman 1891), the accuracy of the description of a megapode by Johnson is made less questionable. Further examination of the archaeological site, especially its lower horizon, may well reveal skeletal evidence by which this bird also can be identified.

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- Keywords** *Hemiphaga*; fossil record; Kermadec Islands; New Zealand pigeon