

SHORT NOTE

Records of the extinct Hawkins' rail (*Diaphorapteryx hawkinsi*) from Pitt Island, Chatham Islands

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Amongst some 10,000 fossil bones I have examined from 6,190 ha Pitt Island, Chatham Islands (44°S, 176°W), were several bones of the extinct, flightless Hawkins' rail (*Diaphorapteryx hawkinsi*). This species was previously known only from Chatham Island (Olson 1975), but has recently been reported to have occurred on Pitt Island (Worthy & Holdaway 2002). This note details the fossil evidence from Pitt Island.

The 56 Hawkins' rail bones, representing at least 16 individual birds, are from 10 widely separated sites on Pitt Island. Some of these fossil sites (all coastal soil or sand deposits) have been dated between 5,000 and 450 years before present (Millener 1999). Nearly all of the Hawkins' rail bones were from natural sites. Humans colonised the Chatham Island group 400-650 years ago (McFadgen 1994; Holdaway 1999). Some of the bones from the Tupurangi region were associated with human occupation sites and may have been part of human food middens, although none of the specimens shows conclusive evidence of this, e.g. burn marks, cuts, or obvious green-stick fractures.

The premaxilla bill tip plate from North Head is remarkable in that its reddish-brown colour is preserved. This is similar to the bill colours of the closest relatives of Hawkins' rail (e.g. banded rail (*Gallirallus philippensis*), weka (*Gallirallus australis*), Chatham Island rail (*Cabalus modestus*))(Olson 1975; Marchant & Higgins 1993; note that scientific names follow Holdaway *et al.* 2001). The bill plate helps to determine that the bill of a living Hawkins' rail was an extraordinarily large, down-curved beak about 10 cm long.

Bones of the three flightless rail species from the Chatham Islands have now been found on two

(Hawkins' rail) or three (Chatham Island rail and Dieffenbach's rail (*Gallirallus dieffenbachii*)) different islands (Chatham, Pitt, Mangere) (Olson 1975; Tennyson & Millener 1994; AJDT unpubl. data), which suggests that they were present on these landmasses before the islands became separate. To-date, there is no evidence that the island populations of these rails had diverged from one another, thus supporting geological evidence that the 20 km wide Pitt Strait, which separates Chatham Island from Pitt and Mangere Islands, formed very recently. All the islands were one landmass during the Last (Otiran) Glaciation (Hay *et al.* 1970): the sea was c.120 m lower during the Last Glacial Maximum about 20,000 years ago (Pillans *et al.* 1998).

Hawkins' rail fossils from Pitt Island are listed below by site, (number of bones/minimum number of individuals), collection holder and registration number, collector, collection date, number of bone elements. Abbreviations used are: *Collection holder* - MNZ = Museum of New Zealand Te Papa Tongarewa, Wellington; OM = Otago Museum, Dunedin. *Skeletal element* - cmc = carpometacarpus; cor = coracoids; cran = crania; dist = distal; fem = femora; hum = humeri; L = left; mand = mandibles; prox = proximal; pel = pelvis; pt = part; R = right; rad = radii; stern = sterna; tmt = tarsometatarsi; tt = tibiotarsi; uln = ulnae; vert = vertebrae. *Collector* - PRM = Phil Millener; AJDT = Alan Tennyson

North coast:

Motutapu Point, on ridge crest west of Motutapu light (1/1): MNZ S.29785 PRM 27/2/1991 1Lcor.

-Motutapu Point, in gully between Motutapu light and Point (7/2): MNZ S.29801 PRM 27/2/1991 1cran; MNZ S.31410 PRM 7/2/1992, 1stern, 1Rfem; MNZ S.32988 PRM 27/2/1991 1Ruln, 1Rcmc; MNZ S.35413 PRM 4/2/1993 1Rfem, 1Lt.

North-west coast:

Tarawhenua Point, extreme western end of peninsula (3/2): MNZ S.35377 C.J. Lindsay 3/2/1957 1 juv. Ltmt; MNZ S.37971 AJDT 8/12/1997 1pel, 1Rtmt.

Tarawhenua Point, c.200m east of western end of peninsula (1/1): MNZ S.35877 PRM 5/2/1993 1Rtt.

Tarawhenua Point, in 'neck' at base of peninsula (31/4): MNZ S.27842 J.A.Bartle 7/1991 1Rrad; MNZ S.29832 PRM 28/2/1991 1pt cran, 3vert, 1Lhum, 1pt pel, 1L1Rfem, 1distLt, 1R1distRtmt; MNZ S.29854 PRM 28/2/1991 1pt pel; MNZ S.31563 PRM 9/2/92 1cran, 2pt pel, 1L2distLfem, 1distL1shaftL1proxRtt, 1proxRtmt; MNZ S.31625 PRM 9/2/1992 1vert; MNZ S.35858 PRM 5/2/93 1rib, 1distLhum, 1Rfem, 1proxLtt; MNZ S.38056 AJDT 8/12/1997 1Lrad, 1shaftRtt; OM AV.7122 H.D. Skinner 1cran (this specimen lacks locality

data other than "Pitt Isd" but it was probably collected when Skinner visited the north of Pitt Island in 1919 – Skinner 1923 - the soil associated with this specimen suggests that it came from the 'neck', rather than the other area that he visited at Tupuangi).

Northeast coast:

Tupuangi, in sand blow-out on south side of creek mouth (7/2): MNZ S.29956 PRM 1/3/1991 1pel; MNZ S.31437 PRM 8/2/1992 1Lrad, 1proxRtt; MNZ S.31452 PRM 8/2/1992 1proxL1Rtt; MNZ S.35611 PRM 5/2/1993 1Rfem; MNZ S.36597 AJDT 4/12/1997 1Lrad.

Tupuangi beach, foredunes opposite Kokope Island (2/1): MNZ S.31506 PRM 8/2/1992 1Rtmt; MNZ S.35671 PRM 5/2/1993 1vert.

East coast:

North Head, north side of small gully in 60m x 30m blow-out on south side of Sandy Point (1/1): MNZ S.37600 AJDT 6/12/1997 1 premaxilla bill tip plate.

North Head, 150m x 20m open sand area on eastern side of coastal knoll at Sandy Point (2/1): MNZ S.37632 AJDT 6/12/1997 1pt mand, 1vert.

South-west coast:

c.100m long coastal cliff-top soil layer, south side of Fraser's Hollow, c.2.5km north of Rangiauria Point (1/1): MNZ S.37791 AJDT 7/12/1997 1Rtt.

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