AUSTRALIAN FIELD ORNITHOLOGY 2005, **22**, 201–206

The Kermadec Storm-Petrel *Pelagodroma (marina) albiclunis*: An Overlooked Australian Taxon

IAN A.W. McALLAN[1], RICHARD M. COOPER[2] and DION HOBCROFT[3]

[1]46 Yeramba Street, Turramurra, New South Wales 2074
[2]18 Lewis Drive, Medowie, New South Wales 2318
[3]7 Henry Street, Lewisham, New South Wales 2049

Summary

The Kermadec Storm-Petrel *Pelagodroma (marina) albiclunis* is a taxon, either species or subspecies, that is currently suspected to breed only on islands of the Kermadec Islands Group, north of New Zealand, though it may have previously bred at both the Norfolk and Lord Howe Island Groups. Notes on recent sightings of the Kermadec Storm-Petrel from near Lord Howe Island and the New South Wales coast are given. There remains the possibility that this taxon still breeds in the Lord Howe Island Group.

Introduction

In most modern literature on Australasian birds, the White-faced Storm-Petrel *Pelagodroma marina* is considered to be comprised of three subspecies: *P.m. dulciae*, breeding on the southern coast of Australia, from the Houtman Abrolhos Group in Western Australia, east to the Broughton Islands in New South Wales, and south to Tasmania; *P.m. maoriana*, breeding around the coasts of New Zealand and the Chatham Islands; and *P.m. albiclunis*, believed to breed in the Kermadec Group (e.g. Marchant & Higgins 1990; OSNZ 1990). *P.m. maoriana* is similar in appearance to *P.m. dulciae*, differing in its forked tail. However, *P.m. albiclunis*, although having a square tail like *P.m. dulciae*, differs from both of the others in its distinctive white rump. This form (hereafter the Kermadec Storm-Petrel) was described from birds collected at Sunday (= Raoul) and Herald Islands and nearby waters of the Kermadec Group by Rollo H. Beck in November 1925, during the Whitney South Seas Expedition (Murphy & Irving 1951).

Imber (1984) suggested that as the Kermadec Storm-Petrel had not been found breeding on the Kermadecs, this taxon may have involved merely first-year birds of the Australian subspecies with worn rump feathers. However, there are a few counters to this theory: a dead female with large ova was found ashore on Raoul Island in October 1908; the holotype of *P.m. albiclunis* was an adult male bird; and in December 1988 a Kermadec Storm-Petrel was found ashore on Macauley Island in the Kermadec Group (Murphy & Irving 1951; Veitch *et al.* 2004). This last bird had 'a largely bare brood patch and soil on its bill, which strongly suggested that it was either breeding or attempting to breed close by' (Tennyson *et al.* 1989; photograph in Veitch *et al.* 2004). Although the rump feathers of the Macauley Island bird were worn, given its brood-patch there is little doubt that it was an adult and therefore Imber's theory does not hold. There are still no records of White-faced Storm-Petrels with white rumps from near the mainland of New Zealand, so it appears that birds from the Kermadec Group are likely to be isolated from the other two subspecies when breeding.

Often overlooked is the fact that a storm-petrel species referable to the White-faced Storm-Petrel has been found in subfossil bone deposits on both Norfolk and Lord Howe Islands (see Fullagar *et al.* 1974; Rich *et al.* 1983; Meredith 1991;

all overlooked by Imber 1984 and Marchant & Higgins 1990). In three recent papers on birds of New Zealand and Norfolk Island, the Kermadec Storm-Petrel has been treated as a distinct species (Holdaway & Anderson 2001; Holdaway *et al.* 2001; Veitch *et al.* 2004). The separation of taxa in these works was based largely on the 'diagnostic species concept' (= phylogenetic species concept) rather than the biological species concept, as the latter mostly cannot be tested on insular populations (Holdaway *et al.* 2001). In the case of the Kermadec Storm-Petrel, its differences in plumage were considered distinctive enough by these authors to warrant separation as a monotypic species. They further suggested that the subfossil remains of White-faced Storm-Petrels from the Norfolk and Lord Howe Island Groups probably referred to a form closely related to either the Kermadec Storm-Petrel or birds from mainland Australia, rather than to the population found near mainland New Zealand. Although not spelt out by Holdaway *et al.* (2001), this distribution pattern is repeated in other north Tasman taxa, such as the Masked Booby subspecies *Sula dactylatra tasmani*, which breeds only on these three island Groups.

Until recently this latter point would have seemed largely academic to all but palaeontologists, as there were no published observations of live 'White-faced Storm-Petrels' from the Norfolk or Lord Howe Island Groups (e.g. Fullagar *et al.* 1974; Schodde *et al.* 1983; Hermes *et al.* 1986; Hutton 1991; Moore 1999). However, while compiling data for an atlas of birds of New South Wales and the Australian Capital Territory, IAWM and RMC had cause to review all records of birds on Lord Howe Island (McAllan *et al.* 2004) and in the process came across two records of live White-faced Storm-Petrels from near Lord Howe Island. After discussing these records with other workers (including DH), another record from coastal waters of New South Wales was recognised.

Observations

The first sighting was a bird seen at sea, two-thirds of the way between Lord Howe Island (31°35′S, 159°05′E) and Balls Pyramid (31°45′S, 159°15′E), on 1 March 1995 by Reg Clark, a member of the New South Wales Bird Atlassers. On request (made in 1999), Clark completed an Unusual Record Report Form. He had previously seen White-faced Storm-Petrels in Australian waters and was familiar with the species. He observed the Lord Howe Island bird for at least 4 minutes at distances as close as 4 m. Sufficient detail was given in his account to determine that it was indeed a 'White-faced Storm-Petrel'. Significantly, Clark also recorded that the rump colour was white, indicating that the bird was of a Kermadec Storm-Petrel type. The bird departed flying towards Balls Pyramid.

The other observation from near the Lord Howe Island Group was a bird seen by Captain Neil Cheshire, an ornithologist with considerable experience of seabirds. On 21 January 1997 Cheshire recorded a 'White-faced Storm-Petrel' from the RV *Franklin* 14 nautical miles north-east of Lord Howe Island near 31°16′S, 159°15′E, though he did not write any detailed notes on this bird (N.G. Cheshire *in litt.*).

On 26 November 1989, DH was on a pelagic trip aboard the *Sandra K* when a single White-faced Storm-Petrel with noticeably white uppertail-coverts was seen. The observation was 28 nautical miles east of Wollongong, NSW, near 34°28′S, 151°18′E. Surface water temperature was recorded at 20.2° C and the water depth was 400 fathoms or 730 m. Other observers on the trip included Ian Puckrin, Hugh Buck, David Gibbs, Miles Wheeler and Nils Dreyer. The bird was feeding

on a tuna-oil slick with three Black-bellied Storm-Petrels *Fregetta tropica*, two Wilson's Storm-Petrels *Oceanites oceanicus* and four other White-faced Storm-Petrels with uniform-grey rumps and uppertail-coverts typical of *P.m. dulciae*.

Numerous other species of seabirds were seen this day, including: Wandering *Diomedea exulans*, Shy *D. cauta* and Black-browed *D. melanophris* Albatrosses; Black-winged *Pterodroma nigripennis*, Gould's *P. leucoptera*, White-headed *P. lessonii*, Providence *P. solandri* and Great-winged *P. macroptera* Petrels; and seven species of shearwater including a lone Buller's Shearwater *Puffinus bulleri*. Also noteworthy were two Long-tailed Jaegers *Stercorarius longicaudus* and two Sooty Terns *Sterna fuscata*. The Black-winged Petrel, Providence Petrel, Flesh-footed Shearwater *Puffinus carneipes* and Sooty Tern all breed on the Lord Howe Island Group.

The Storm-Petrel was observed for several minutes at close range allowing three photographs to be obtained (Plate 17). The uppertail-coverts appeared the same shade of white as the flanks, vent, belly and the rest of the underparts: a dull, clean pure white. The white uppertail-coverts strongly contrasted with the dull-black tail and the grey-brown lower back. The photographs show this strong contrast, which is similar to that found in photographs of specimens in the original paper describing *albiclunis* as a subspecies (Murphy & Irving 1951). The bird appeared in fresh plumage with no obvious signs of moult or heavy wear.

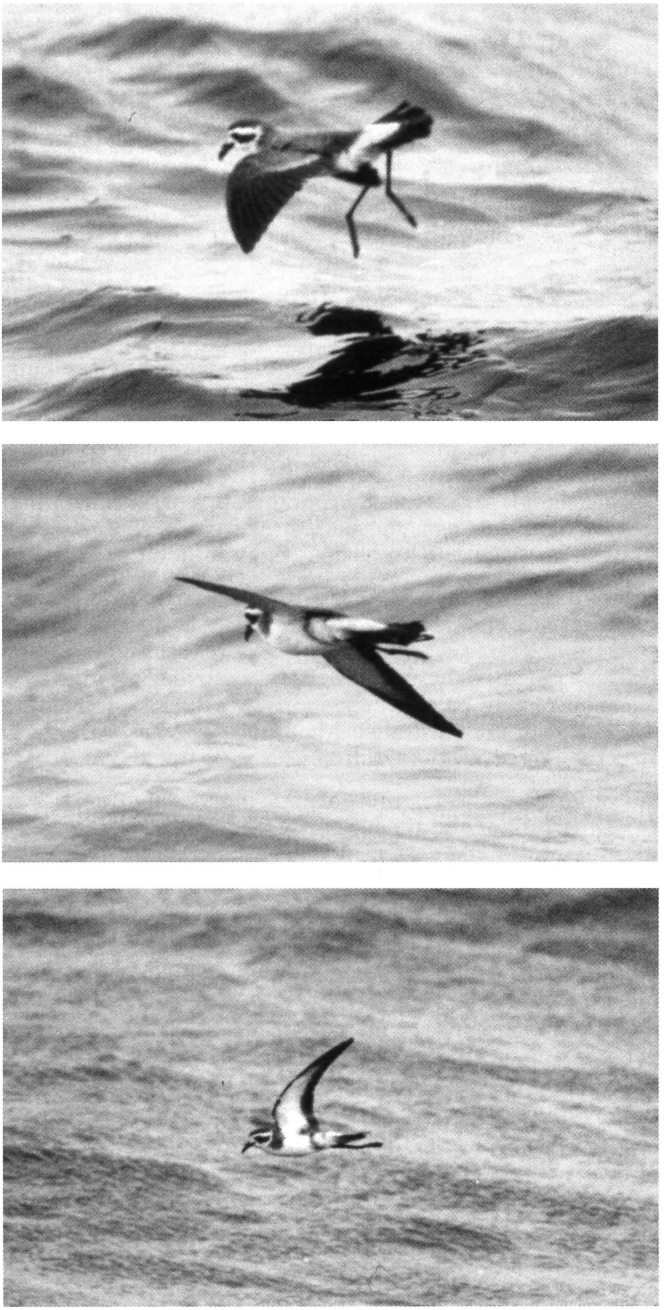
A distinctive dark-grey stripe extended from the base of the trailing edge of the wings on the flanks in a thin crescent, extending to the anterior belly in front of the legs. Another short grey stripe was discernible anterior to the uppertail-coverts. The significance of these is not understood; they may have been stained feathers. A similar fainter, paler grey stripe on the flanks is found in a specimen of *P.m. dulciae* held in the Australian Museum collection. No other significant plumage, structural or behavioural differences were noted.

With the other rare species present, not much attention was paid to the significance of the bird at the time. Shortly afterwards, DH consulted various seabird authorities on whether the bird may have been *P.m. albiclunis*. However, these authorities reflected Imber's view that *P.m. albiclunis* was doubtfully distinct and may represent worn-plumaged *P.m. dulciae*.

The only other published report of the Kermadec Storm-Petrel away from the Kermadec Group is of four birds observed at sea on 10 October 1981 at 35°43′S, 155°50′E (Jenkins 1982). This locality is well to the south-west of Lord Howe Island and, even though between the longitudes of eastern Australia and Lord Howe Island, it is well outside Australian territorial waters. These birds were far from known or suspected breeding colonies of both the Kermadec and southern Australian populations.

Discussion

Although we are not in a position to test the validity of the separation of this taxon as a monotypic species, the Kermadec Storm-Petrel certainly appears to be at least a valid subspecies. We examined the holdings of *P.m. dulciae* in the Australian Museum and of 40 specimens inspected all were uniform in the grey coloration of their back and uppertail-coverts. These included birds which had not yet fledged and other birds collected from months ranging from September to February. Some younger birds had a few narrow bands of white on their fresh uppertail-coverts but this did not make the rump appear pale, nor would it be



Kermadec Storm-Petrel off Wollongong, NSW, 26 November 1989. Note the white rump, which is identical in colour with the underparts and contrasts with the dark back. Also note the dark line near the flanks.

Plate 17 Photos: Dion Hobcroft

discernible at sea.

Reports of the Kermadec Storm-Petrel from the Kermadec Group have been from August to December (see Cheeseman 1890; Iredale 1910, 1913; Merton 1970; Edgar 1975; Jenkins 1980, 1981; Tennyson *et al.* 1989; Veitch *et al.* 2004). These are from much the same months as the specimens collected for the Australian Museum, and suggest that breeding in the Kermadecs may be at about the same time as in New Zealand and Australia, though fledging usually takes place in February or March (Marchant & Higgins 1990; Heather & Robertson 1997). The records from near Lord Howe Island in January and early March by themselves do not indicate whether the form breeds on this Group, even though they are from within the breeding period of Australian and New Zealand birds. Nonetheless, the presence of many bones in the subfossil sand-dune deposits on Lord Howe Island implies that a similar storm-petrel must have been common there at some time in the past. In any case, the sighting of a bird fitting the description of a Kermadec Storm-Petrel by Reg Clark at Lord Howe Island and DH's sighting off Wollongong verify that the taxon is at least occasionally found in Australian waters.

If the Kermadec Storm-Petrel does breed on the Lord Howe Island Group then this population must be extremely reduced in number and is likely to breed only on the offshore islets. In recent years Kermadec *Pterodroma neglecta* and Providence Petrels have recolonised Phillip Island in the Norfolk Island Group following the removal of introduced Rabbits *Oryctolagus cuniculus* (Hermes *et al.* 1986; Moore 1999). There is thus the possibility that the Kermadec Storm-Petrel could also be recorded in the Norfolk Island Group in the future.

In addition Robert Baxter wrote to Keith Hindwood on 19 April 1941 noting that 'It is quite definite that the storm petrels nest on the cliffs along the lowlands[,] for one of the lads when ratting smoked what he thought was a rat burrow[,] but from which flew a petrel. There was no egg in the nest[,] only one bird' (K.A. Hindwood papers, Mitchell Library). Hindwood apparently overlooked this comment in his later papers on Lord Howe Island birds (Hindwood & Cunningham 1950; McKean & Hindwood 1965). At present the only species of storm-petrel known to breed on the Lord Howe Island Group is the White-bellied Storm-Petrel *Fregetta grallaria*. It now breeds only on the offshore islands, but is recorded in subfossil deposits on the main Island. Roy Bell also found remains of this species on Mount Gower in 1914, evidently killed by feral Cats *Felis catus* (Hindwood 1940). Although there is the possibility that Baxter's record is of a Kermadec Storm-Petrel, it is more likely that the bird was one of the last White-bellied Storm-Petrels breeding on the main Island. Cats were removed from Lord Howe Island in the 1970s, but the White-bellied Storm-Petrel has not yet recolonised the main Island, probably because of the presence of other introduced predators — Black Rats *Rattus rattus* and Masked Owls *Tyto novaehollandiae*.

Acknowledgements

Walter Boles, Neil Cheshire, Reg Clark, Richard Holdaway, Tony Palliser, Alan Tennyson and an anonymous referee all helped with various aspects of this paper. The staff of the Mitchell Library, State Library of NSW, allowed access to Keith Hindwood's papers in their care.

References

Cheeseman, T.F. (1890), 'On the birds of the Kermadec Islands', *Transactions of the New Zealand Institute* **23**, 216–226.

Edgar, A.T. (compiler) (1975), 'Classified summarised notes', *Notornis* **22**, 313–340.

Fullagar, P.J., McKean, J.L. & van Tets, G.F. (1974), 'Appendix F. Report on the birds', pp. 55–72 in Recher, H.F. & Clark, S.S. (Eds) *Environmental Survey of Lord Howe Island, A Report to the Lord Howe Island Board*, Australian Museum, Sydney.

Heather, B.D. & Robertson, H.A. (1997), *The Field Guide to the Birds of New Zealand*, Oxford University Press, New York.

Hermes, N., Evans, O. & Evans, B. (1986), 'Norfolk Island birds: A review 1985', *Notornis* **33**, 141–149.

Hindwood, K.A. (1940), 'The birds of Lord Howe Island', *Emu* **40**, 1–86.

Hindwood, K.A. & Cunningham, J.M. (1950), 'Notes on the birds of Lord Howe Island', *Emu* **50**, 23–35.

Holdaway, R.N. & Anderson, A. (2001), 'Avifauna from the Emily Bay settlement site, Norfolk Island: A preliminary account', *Records of the Australian Museum, Supplement* **27**, 85–100.

Holdaway, R.N., Worthy, T.H. & Tennyson, A.J.D. (2001), 'A working list of breeding bird species of the New Zealand region at first human contact', *New Zealand Journal of Zoology* **28**, 119–187.

Hutton, I. (1991), *Birds of Lord Howe Island, Past and Present*, Author, Coffs Harbour, NSW.

Imber, M.J. (1984), 'Migration of White-faced Storm-Petrels *Pelagodroma marina* in the South Pacific and the status of the Kermadec subspecies', *Emu* **84**, 32–35.

Iredale, T. (1910), 'Birdlife on the Kermadec Islands', *Emu* **10**, 2–16.

Iredale, T. (1913), 'Concerning the Kermadec Islands avifauna', *Transactions of the New Zealand Institute* **45**, 78–92.

Jenkins, J. (1980), 'Seabirds off Raoul Island', *Notornis* **27**, 97.

Jenkins, J. (1981), 'Kermadec Storm Petrel', *Notornis* **28**, 138.

Jenkins, J. (1982), 'Kermadec Storm Petrel', *Notornis* **29**, 112.

Marchant, S. & Higgins, P.J. (Eds) (1990), *Handbook of Australian, New Zealand & Antarctic Birds*, vol. 1, Oxford University Press, Melbourne.

McAllan, I.A.W., Curtis, B.R., Hutton, I. & Cooper, R.M. (2004), 'The birds of the Lord Howe Island Group: A review of records', *Australian Field Ornithology* **20 (Suppl.)**.

McKean, J.L. & Hindwood, K.A. (1965), 'Additional notes on the birds of Lord Howe Island', *Emu* **64**, 79–97.

Meredith, C.W. (1991), 'Vertebrate fossil faunas from islands in Australasia and the Southwest Pacific', pp. 1345–1382 in Vickers–Rich, P.V., Monaghan, J.M., Baird, R.F. & Rich, T.H. (Eds) *Vertebrate Palaeontology of Australasia*, Pioneer design studios/Monash University Publications Committee, Melbourne.

Merton, D.V. (1970), 'Kermadec Islands expedition reports: a general account of birdlife', *Notornis* **17**, 147–199.

Moore, J.L. (1999), 'Norfolk Island bird notes, 1977 to 1997', *Notornis* **46**, 354–364.

Murphy, R.C. & Irving, S. (1951), 'A review of the frigate-petrels *(Pelagodroma)*', *American Museum Novitiates* **1506**, 1–17.

OSNZ (1990), *Checklist of the Birds of New Zealand and the Ross Dependency, Antarctica*, 3rd edn, Ornithological Society of New Zealand Inc./Random Century New Zealand Ltd, Auckland.

Rich, P., van Tets, G., Orth, K., Meredith, C. & Davidson, P. (1983), 'Prehistory of the Norfolk Island biota', pp. 6–29 in Schodde, R., Fullagar, P. & Hermes, N. (Eds), *A Review of Norfolk Island Birds: Past and Present*, ANPWS Special Publication **8**, Australian National Parks and Wildlife Service, Canberra.

Schodde, R., Fullagar, P. & Hermes, N. (1983), *A Review of Norfolk Island Birds: Past and Present*, ANPWS Special Publication **8**, Australian National Parks and Wildlife Service, Canberra.

Tennyson, A., Taylor, G. & Scofield, P. (1989), 'Another visit to Macauley Island', *OSNZ News* **52**, 4–5.

Veitch, C.R., Miskelly, C.M., Harper, G.A., Taylor, G.A. & Tennyson, A.J.D. (2004), 'Birds of the Kermadec Islands, south-west Pacific', *Notornis* **51**, 61–90.

Received 3 June 2005 ■