

THE HERALD PETREL *PTERODROMA ARMINJONIANA HERALDICA* BREEDING ON RAINE ISLAND, QLD.

The first Australian observations on *P. a. arminjoniana* were made at Raine Island in February 1959 by Warham (1959) who captured a single adult and found an unaccompanied egg. No further observations were made there until June 1980 when D. Seton recorded three, possibly four, pairs. Additional records have since been made at Raine Island in June 1981 (BK), July 1982 (BK and D. Carter), and in April and July of 1983 (BK) and in April 1984 (BK and A. Taplin). This communication reports a new breeding record from Raine Island, which confirms Warham's finding.

Raine Island (11°36'S, 144°01'E) is a vegetated large sand cay situated about 10 km outside the far northern Great Barrier Reef and 100 km offshore. A description of the cay and its natural history has been published by Stoddart *et al.* (1981). Raine is an important breeding site for a number of seabird species found throughout the Great Barrier Reef Province and also some oceanic seabirds not commonly found in Australian waters, including Great and Least Frigatebirds *Fregata minor* and *F. ariel*, Red-footed and Masked Boobies *Sula sula* and *S. dactylatra*, Red-tailed Tropicbirds *Phaethon rubricauda* and Herald Petrels *P. arminjoniana*.

BREEDING RECORD

On 25 July 1982, an adult and a large downy chick were found together on the ground beneath the vegetation canopy of the western end of the southern vegetated ridge of Raine Island. Two days later a second adult was captured at the same site.

The nest site was on gently sloping ground on the south-western corner of a vegetated sand ridge that runs round the island. The ridge is higher (up to 10 m above low water level) along its southern portion and all records at Raine have been made there. The vegetation of the ridge is a low, dense mat of shrubs, grasses and other species that rarely exceeds 0.5 m in height. The main plant species are shrubs *Achyranthes aspera*, *Abutilon indicum*, *Amaranthus leptostachys* and *Sesbania cannabina*, a creeper *Tribulus cistoides*, and a grass *Lepturus repens*. The site was partly concealed by a sparsely-foliaged *Abutilon* and some *Achyranthes* shrubs. There was no sign of any nest or scrape in the sand. The adult and chick were sitting on the sand about 25 cm apart.

OTHER POSSIBLE BREEDING SITES

Previously, the nearest reported breeding site to

Australia was the Chesterfield Islets (Serventy *et al.* 1971; Harrison 1983). Warham suggested that *P. a. heraldica* might also breed on other outer Great Barrier Reef cays. However, this has not yet been supported by my observations since 1979 on the outer reef cays Pandora, MacLennan, Sandbank No. 8, Sandbank No. 7, Davie, Tydeman, or Sandbank No. 1, nor on over forty of the inner reef cays and islands lying between Cairns and Cape York.

STATUS IN AUSTRALIA

There are four specimens of *P. arminjoniana* in museum collections in Australia, i.e. two in the Queensland Museum (018017 female: Raine Island, Qld; 011534 female: Burleigh Heads, Qld), one in the Australian Museum (056024 male: Henderson Island, South Pacific Ocean) and one in the National Museum of Victoria (B7850 male: Oeno Island, South Pacific Ocean). The plumage of all birds captured or observed at Raine agrees with that of the light phase of *P. a. heraldica*. This identification was confirmed by Mr. D.P. Vernon of the Queensland Museum for specimen 018017. A description of the three colour phases of *P. arminjoniana* with illustrations is given by Harrison (1983).

There are six Australian records from localities other than Raine Island, all from eastern waters. These are: 300 km SE of Nowra, NSW (36°40'S, 154°16'E to 36°23'S, 153°50'E) (Norris 1965); Burleigh Heads, Qld (28°05'S, 153°27'E) (Vernon & McKean 1972); 30 km E of Ballina, NSW (approx. 28°40'S, 154°00'E) (Izzard & Watson 1980); Coral Sea (22°45'S, 155°15'E and Turtle Islet, Lihou Reef (17°10'S, 152°05'E)) (C. Corben, pers. comm.); and 36 km E of Sydney, NSW (approx. 34°00'S, 151°50'E) (A. McBride and D. Hobcroft, pers. comm.). Details of these records are shown in Figure 1.

Herald Petrels regularly visit Raine Island as indicated by records since June 1980. In addition, two birds I banded on Raine were recaptured there in July 1983, both less than 10 m from their original banding sites. One bird (071-52501), banded as one of a pair of breeding adults with a chick in July 1982, was with a new bird (now 071-74700). The other (061-36302), banded in June 1981, was in company with a new bird that was not captured. On 23 April 1984, 071-52501 was again recaptured. On the same day, 081-74698, banded in July 1983, was also recaptured. Both birds were again within 10 m of their original banding sites. Therefore, some birds not only return to Raine, but also show a

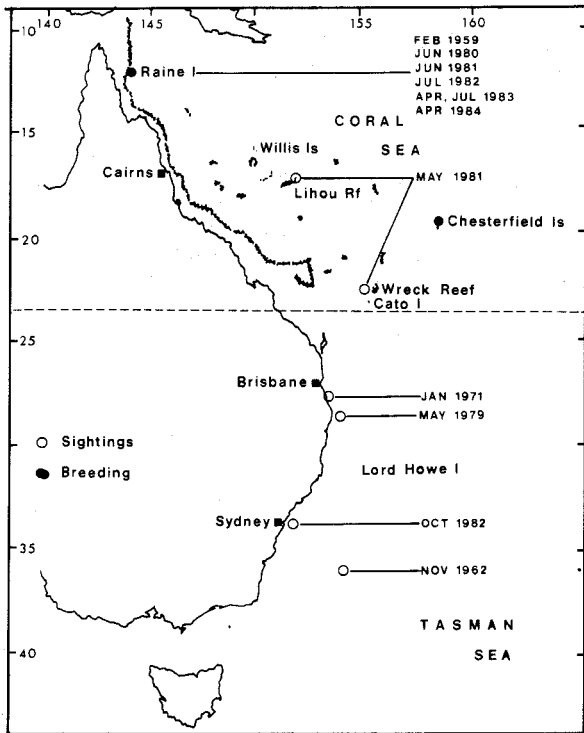


Figure 1. Records of *P. arminjoniana* in Australia, 1959-1984.

degree of fidelity to a particular part of the island, though not always to their mates of previous years.

Serventy *et al* (1971) refer to residence of *P. a. heraldica* "on breeding islands" as being year-round, with eggs being recorded at any time between September and March. At Raine, however, no birds of this species have ever been recorded in November and December (my observations) or in January (C.J. Limpus, pers. comm.). This suggests that residence and breeding at Raine is in late summer, autumn and winter (February to at least August), followed by a post-breeding seaward dispersal

in early and mid-summer. During this period, some individuals could stray to waters off the south-eastern coast of Australia. The possibility of there being more breeding islands in the Coral Sea, as suggested by Warham's original account, is strongly supported by C. Corben's (pers. comm.) two records for May 1981 (Figure 1), as these were made at a time when the species would have been present on Raine.

In the Central Pacific, sightings at sea have also been made that suggest a northward dispersal (Gould & King 1967). The southerly records from Australia suggest that the species may be much more wide-ranging at sea than was previously thought.

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