

environments. Size is very similar (Taylor 1976, *Notornis* 23: 198-200); behaviour clearly fails to prevent large scale hybridization, and hybrids are clearly successful in the present environments — contrary to Smith's arguments.

Although reafforestation of Mangere Island is being hastened by large scale planting, it will be many decades before forest becomes predominant. Forbes' Parakeets will continue to be at a disadvantage on Mangere Island for a long time; while on Little Mangere Island, we can expect Red-crowned and hybrid forms to further increase as the remaining forest opens up and birds disperse from Mangere.

Parakeets do notably well in captivity, and aviary-bred Red-crowned Parakeets have recently been re-established in the wild elsewhere in New Zealand by the Wildlife Service. It would be valuable to breed Forbes' Parakeets from Mangere stock for the future establishment of a wild population.

The question of management of wild parakeet populations on the Mangere Islands requires a decision on the relative value of the hybrids compared with their threat to the seriously endangered population of Forbes' Parakeets. The present situation could be allowed to take its own course for its scientific interest. On the other hand, in the interests of conservation of a very rare species, the hybrid and Red-crowned Parakeets could be regularly removed from the two islands until forest cover once again favoured the Forbes' Parakeet.

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AERIAL DISPLAYS BY LARGE PETRELS

Although many small to medium-sized procellariiforms perform aerial displays near their breeding places, usually at night, little similar activity has been reported of the larger, diurnally-active petrels. Best known are the loose dual flights of the two Sooty Albatrosses (*Phoebastria* spp.). The performances of Giant Petrels (*Macronectes* spp.) are quite different. The birds rise a few metres on stiff, slightly drooped wings and then descend in a short curve. Meanwhile their necks are stretched, heads raised and waved from side to side to the accompaniment of braying cries. The nape feathers are erected and tails fanned. The whole performance appears to be the aerial equivalent of the upright threat display (Warham, 1962, *Auk*: 79: 139-160).

When I first described this behaviour the existence of two sympatrically breeding species of Giant Petrel (*M. giganteus* and *M. halli*) had not been established. It is now clear that both species use the aerial display. This was often seen in February and March 1969 at Antipodes Island where only *M. halli* breeds, while R. Schlatter (pers. comm.) described similar behaviour in *M. giganteus* flying over nesting grounds in Antarctica. That such activity may be more widespread among fulmars is suggested by brief sightings of similar displays among Northern Fulmars (*Fulmarus glacialis*) recently (Warham, 1975, *Scottish Birds* 8: 319-321). Voisin (1968, *Oiseau Special No.*: 95-122) reported aerial displays by both *Macronectes* spp. and also saw them perform closed-circuit pursuit flights involving two or three birds.

Aerial displays of Northern Giant Petrels at Antipodes Island, where the bird is not particularly abundant, were common and persistent in 1969. Breeding had ended and the chicks recently fledged, but the displays took place above or near the nesting areas. Thus on 10 March four to six petrels circling about a small group of *M. halli* nests made successive individual gliding approaches in the face of a strong breeze and then stiffened and drooped their wings, lowered their feet and rocked their heads from side to side with loud brayings, as they passed over the nests. Usually only one bird performed at a time but some were still displaying two hours later. The function of the activity was not clear. I was too far away for the display to have been aimed at me but it could have been triggered by the close proximity of another flying petrel or perhaps directed at one on the ground hidden in the tussock, but no physical contacts were seen.

Similar aerial performances are used by the two giant albatrosses, the Royal (*Diomedea epomophora*) and the Wanderer (*D. exulans*). These were observed during field work at Campbell Island in January 1969 and at Antipodes Island in February and March of that year. For example, on 13 January a flying Royal Albatross displayed with opened bill and drooped wings when another albatross flew close by, and a braying call seemed to be uttered. As this display was only seen three times during 18 days in the field it is evidently not often used, at least at that season of the year. Similar actions of flying Wanderers at Antipodes Island were also brief, lasting no more than 4 seconds and hence very easily overlooked. The Wanderer displays took place when small groups of albatrosses were wheeling above "gams" of courting birds on the ground. The display began when the bird set its wings in a drooped attitude, arched its neck awkwardly and with uptilted bill appeared to emit a rattling cry. Again no physical contact was made with another bird and it was impossible to determine at what the display was directed.

These aerial displays may be merely extensions into flight of parts of the ground-display repertoire in which several males typically display before a female. The purpose of this note is to draw attention to these aerial displays in the hope that further detailed observations

may be made on the giant albatrosses, on fulmars like the Cape Pigeon (*Daption*) and Snow Petrel (*Pagodroma*), and also on the smaller albatrosses of the genus *Diomedea*.

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1. University of Canterbury Antipodes Island Expedition 1969, paper No. 10.



BLACK-TAILED GODWIT IN THE BAY OF PLENTY

For the past six summers I have kept watch on a small group of sand islands situated inside the northern extremity of the Tauranga Harbour about half a mile from Bowentown Heads (see NZMS 1, Sheet N53, Paeroa, Square 34:58).

On 19 December 1974 I noticed a single godwit in company with a flock of 76 Pied Stilts (*Himantopus leucocephalus*). As I approached the bird flew, displaying the characteristic white rump and black tail of a Black-tailed Godwit, but I was unable to see the underwing pattern. During three subsequent visits, 28 December 1974 and 2 and 9 January 1975, I was unable to find the bird again. Also fruitless were visits to various likely coastal points (Tanners Point, Ongare Point and Kauri Point) where Pied Stilts are known to gather.

It was not until 15 January that I resighted what I believe was the same bird. The weather at 1105 hours was fine and clear, with excellent visibility. About 50 metres away, it was seen through a Bisley telescope at 40X magnification. A flock of 45 Turnstones (*Arenaria interpres*) was feeding between two sand islands on the flats exposed by the falling tide and with this flock was a single godwit which appeared paler and less mottled than a Bar-tailed Godwit. The white upper-tail coverts were particularly obvious. Later a small group of Bar-tailed Godwits alighted near this bird and I was able to make some useful comparisons. It was about the same size as the male Bar-tails, but its upper parts were greyer and less speckled. Having examined the bird carefully for about ten minutes, I decided to flush it; the gleaming white underwing characteristic of an Asiatic Black-tailed Godwit (*Limosa limosa melanuroides*) showed up very clearly (Fig. 1). It landed about 50 metres away and after an hour and a half eventually flew off alone, heading north-east across the bay towards the now exposed mud-flats.

The godwit could not be found on further visits to the islands. Published records indicate that this is the first sighting of an Asiatic Black-tailed Godwit in the Bay of Plenty.

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