

Smaller species with which a Ruff might be confused were discounted for the following reasons apart from size: Buff-breasted Sandpiper (*Tryngites subruficollis*) because of the longer bill, whitish underparts and white sides to rump; Sharp-tailed Sandpiper (*C. acuminata*) because of the long, yellowish legs, different proportions of head and bill, and the absence of a rufous cap. Compared with the Pectoral Sandpiper, the Ruff was larger and more upright with a comparatively shorter bill. Also, the gorget on the breast was much paler on the Ruff, being formed only by feather shafts.

This bird was probably a juvenile because it had a yellowish rather than white fore-face, the latter being typical of adults (Cramp & Simmons 1983). By the yellowish base to its bill, the bird may have been a male.

Ruff breed in northern Asia and Europe, mainly migrating to India and eastern Africa. As a few are recorded from Australia in most summers (Blakers *et al.* 1984), more New Zealand records are to be expected.

We thank John Fennell and Paul Sagar for criticising this note.

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### Pursuit Diving by Northern Giant Petrels at the Chatham Islands

On 29 November 1984, while we were working on the west coast of South East Island, we saw a Northern Giant Petrel (*Macronectes halli*) on the sea surface 80-100 metres offshore struggling with a long (60-70 cm) animate object. Given a flat sea, excellent weather conditions and an elevated viewing position some 150 metres a.s.l., we were able to follow the contest fairly well with binoculars. A second giant petrel was also on the surface nearby, and the activity attracted a Southern Great Skua (*Stercorarius skua lonnbergi*), Black-backed Gull (*Larus dominicanus*) and Sooty Shearwater (*Puffinus griseus*).

The giant petrel had great difficulty retaining the animal and, in an apparent attempt to lift it completely clear of the water, beat its wings on several occasions. When it lost its hold on the animal and it 'sank' — we were not sure whether it actively swam away or merely sank when released — the giant petrel dived after it from the surface and completely disappeared underwater. We could see the bird make several beats with half-folded wings to propel itself underwater, and we estimated that it went down about 2 metres to retrieve the animal. We are unable to see whether it used its feet.

After some further struggling with the animal on the surface by the first bird, the second giant petrel moved in. The first bird released the animal, which promptly 'sank' again. The second bird dived after it in exactly the same manner as the first — surface dive, beats with half-opened wings underwater — and retrieved it. Over the next 15 minutes or so, the birds contested the prize on several more occasions and each bird was involved in several dives of this sort to recover the prey, all to about 2 metres in depth, before the prey finally sank or escaped.

We believe the prey to have been a hagfish (family Eptatretidae) from its size, shape and behaviour. The copious production of mucus usual with hagfish would have made it a slippery customer indeed and may account for the difficulty both giant petrels had in handling it. Hagfishes are common around the Chathams and often foul fishing gear. We considered the possibility that the giant petrels had picked up an animal discarded by a fisherman clearing his tackle. However, we had been on that side of the island all day without seeing any fishing vessels and believe, therefore, that this was a natural encounter.

Giant petrels are usually characterised as 'surface seizers' and 'scavengers' at sea (Ashmole 1971, Johnstone 1977, Croxall & Prince 1980). How giant petrels and albatrosses catch active prey such as fish and squid has not been determined, although it has been assumed that this might happen at night when these animals have migrated to the surface. Diving after prey in the manner we observed, termed 'pursuit diving' by Ashmole (1971), has not been reported for giant petrels, as far as we are aware. Voisin & Shaughnessy (1980) reported *M. halli* diving and swimming underwater to avoid capture and *M. giganteus* diving through incoming waves near the shore, although the birds used their feet rather than wings for propulsion. However, wing-propelled underwater swimming has been recorded in albatrosses (Nicholls 1979, Oatley 1979). Some albatrosses have been seen 'plunge diving' (Prince 1980) ('surface plunging' of Ashmole 1971), but without swimming underwater, the birds being taken below the surface by the momentum of their aerial dive alone.

Our observations show that giant petrels can, at least under some circumstances, make shallow dives in pursuit of prey.

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