

record of a giant-petrel killing and eating an albatross. This observation is also interesting because the method employed to kill the Albatross was clearly seen. According to Serventy *et al.* (1971, Handb. Aust. Sea-Birds) Black-browed Albatrosses usually are dimensionally larger and of slightly heavier weight than giant-petrels but they and other large seabirds may be killed fairly often by giant-petrels, because, although I was surprised to see the Petrel's attack, in retrospect I believe its actions were deliberate from the time it was first seen. The confident manner in which it immediately

grasped the Albatross's head from behind, pushed it under water, then forced it down with its weight, suggests that this bird and other giant-petrels may have used this method to kill large seabirds on previous occasions. This type of predation may occur only in extreme circumstances. Three weakened giant-petrels were found on nearby beaches during the previous period of strong winds and lack of food could have forced this Petrel to attempt exceptional measures to gain nourishment. The Albatross could also have been weakened but its behaviour seemed no different to that of others nearby.

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SHORT-TAILED SHEARWATERS *Puffinus tenuirostris* IN THE ANDAMAN SEA AREA, INDIAN OCEAN

The Short-tailed Shearwater *Puffinus tenuirostris* is the only Australian petrel that breeds solely within Australian territory, predominantly on islands of the Bass Strait, and is possibly the most abundant Australian bird species (Serventy *et al.* 1971). The fundamental migration route of this bird about the Pacific Ocean has been quite clearly defined, as a result of observations, collections and banding recoveries (Serventy 1956, 1957); records of birds far from the migration area, particularly westward, are rare. Only two individuals have previously been recorded from the Indian Ocean: one obtained near Ormara on the Makran Coast, Pakistan, in May 1989 and another on the southern coast of Sri Lanka in May 1949 (Jouanin 1957; Ali and Ripley 1968). These two birds are considered to have been 'doubtless blown in by SW Monsoon gales' (Ali and Ripley 1968: 13) but Serventy *et al.* (1971) consider them to be 'first-year birds which had "lost" themselves with migrating flocks of the Flesh-footed Shearwater *Puffinus carneipes*' and Bourne (1976) refers to them as 'a clear example of movement north from the Southern Ocean into the wrong ocean'.

On 2 May 1977 two local fishermen brought me a live Short-tailed Shearwater they had taken by hand from the sea, on which it was floating, apparently resting, during the previous night. On 10 May 1977 a second live bird was caught by two different men who snared its foot with a hook and line while fishing. Both birds were taken from very small canoe-like boats close to the shore of Koh My Thon, a small island very close to Phuket Island, western peninsular Thailand (Fig. 1). The first bird (Specimen 1) was collected at about midnight

and the second (Specimen 2) at 02:00. Specimen 1 was a little weak but otherwise both birds were in good condition and health, although weighing proved them to be considerably lighter than breeding birds (Table I). In view of the remarkable and significant distributional record for the species and also because the find added the species to the list of Thai birds (Deignan 1963; Lekagul and Cronin 1974), I made study skins of both individuals. Both were measured and weighed very shortly after being received; these data and other details appear in Table I. Specimen 1 has been presented to the British Museum of Natural History and it is intended that Specimen 2 will be deposited with the CSIRO Division of Wildlife, Canberra.

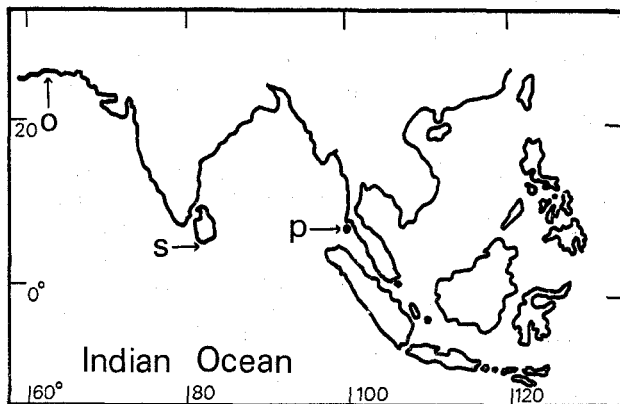


Figure 1. Locations in the Indian Ocean at which *Puffinus tenuirostris* has been recorded. o = Ormara, Pakistan; s = south coast of Sri Lanka; p = Phuket I., Thailand.

TABLE I
Measurements (mm) of *Puffinus tenuirostris*.

	Spec. 1*	Spec. 2†	Range‡
Wing	251	264	262–290
Tail	80	81	75–86
Culmen	32.4	30.1	29.3–33.8
Tarsus	50.7	49.4	48–53
Culmen tarsus ratio	0.64	0.61	0.62
Middle toe and claw	66.8	66.5	59–66
Middle claw	10.5	9.4	8.8–11.2
Wing span	c.915	932	915–966
Weight (g)	375	417	425–567

* Female, oocytes not enlarged, skull fully ossified. 2 May 1977.

† Female, oocytes not enlarged, skull fully ossified; a bare area of thick skin (brood patch ?) on right pectoral. Ectoparasites collected. 10 May 1977.

‡ Breeding adult females only, except wing span and weight which are for breeding adult males and females, from Serventy *et al.* (1971).

The Short-tailed Shearwater can be confused with the shearwaters *Puffinus pacificus*, *P. carneipes* and, particularly, *P. griseus* at sea. It is, however, easily identified in the hand by size and the colour of the soft parts, noted as follows from the live birds:

Specimen 1: Leg: outer blackish, the inner two toes purplish and outer blackish-purple. Inside tarsus pale purplish-blue. Webs: purplish-grey. Iris: dark brown. Bill: upper mandible matt-black and lower steely grey-blue, tip black. Mouth: pale grey-blue. Nostril tubes and very fine bare orbital skin, matt-black.

Specimen 2: Leg: outer tarsus and toe purplish-black, inner tarsus and two inner toes medium purplish-grey. Outer web purplish-grey, inner web purplish flesh. Iris: very dark brown. Bill: upper mandible and nostril tubes matt-black, but latericorn olive-grey. Lower mandible matt-black, but ramicorn steely blue-grey. Mouth: pale flesh-purplish. Very fine bare orbital skin; matt-black.

The colours of the soft parts, weights and measurements (Table I) leave no doubt as to the identity of the specimens. In addition my tentative identification of Mallophaga, taken from the plumage of Specimen 2, as *Halipeurus diversus* (family Philopteridae) has been kindly confirmed by J. H. Calaby of CSIRO Division of Wildlife Research, Canberra. This ectoparasite commonly infests the plumage of *Puffinus tenuirostris* and its presence on Specimen 2 thus agrees with the host's identification.

The two Koh My Thon birds represent the first authenticated, but not unexpected (see King and Dickinson 1976), record of the species in south-eastern Asian waters. Medway and Wells (1976)

refer only to the earlier record of Allen (1951) with regard to possible *Puffinus* spp: 'Medium-sized, dark shearwaters with graduated tails, tentatively ascribed to *P. pacificus* or *P. carneipes*, were seen on 4 August 1950 at the north end of the Malacca Straits (6° N, 98° E)'. Though the graduated tail, as noted, suggests *P. pacificus*, the shape of the tail of *P. carneipes* is almost identical to that of *P. tenuirostris* but the latter is unlikely to have been seen in 1950 presumably on geographical grounds. In view of the present record of *P. tenuirostris* in the Phuket area, however, this species cannot be completely discounted as a possibility for the earlier record, although at present known to occur only in the Indian Ocean during May. That *P. pacificus* does occur in the Straits of Malacca has, however, been confirmed by P. Buitendijk who collected a specimen on 30 July 1916 (Junge 1941). Moreover, a number of sightings of this species in the Straits of Malacca, Andaman Sea and Bay of Bengal have been made during May, June, July, August and October (Cheke 1966; Bourne 1967; Bourne and Dixon 1973, 1975).

I must record the interesting statements made by the fishermen at the time the Short-tailed Shearwaters were brought to me. Both groups of men separately informed me that the Thai name for this bird is *nam bet* (= sea duck). It is a bird with which they are familiar, they said, which is found on the surface of the sea at night about small islands off Phuket in dispersed groups of about five or six and which occurs in this area for a brief period (which they could not define) at about the same time each year. Several other local fishermen whom I asked about *nam bet* or *bet nam* (which might apply to any or all of the dark shearwaters) gave me much the same information. I have no reason to doubt these men, who fish from small boats about these islands throughout the year. Moreover, the fact that they caught, by hand and by hook and line, two individuals within such a short period suggests that moderate numbers, at least, occur when the species is present. Although I rewarded the men for both birds, neither was solicited. Having received the first, I considered it a stray and at that time I was given no indication of the possibility of more specimens. The statements of local men suggests, however, that dark shearwaters, if not only Short-tailed Shearwaters, are regular, even annual, visitors to waters of western peninsular Thailand. It remains to be discovered if this represents consistent movements of flocks of a single or of several species involving numbers of 'lost' *Puffinus tenuirostris* joining movements of other *Puffinus* species or otherwise.

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