

The Shearwaters of Lion Island

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Lion Island, at the mouth of Broken Bay, New South Wales, has long been known as the closest breeding place to Sydney of the Wedge-tailed Shearwater (*Puffinus pacificus*). The discovery, in February 1947, that the Sooty Shearwater (*P. griseus*) also bred there aroused considerable interest in ornithological circles. Since 1947 no observer is known to have visited the island until February 14, 1954, when thirteen members of the R.A.O.U. landed to investigate the breeding colonies of both species of shearwaters.

The lower slopes of the island are largely formed of huge boulders and great slices of cliff-face that have in past years fallen from above. The highest part, or 'head', faces the east and is almost 300 feet above the sea; it falls away rather steeply to the 'tail' at the western end, close to which, on the southern side, is a small sandy beach, the only suitable landing place on the island.

Little Penguins (*Eudyptula minor*) nest in the cavities and shelters formed by fallen boulders, and occasionally in burrows dug into the steep earth banks on the seaward, or eastern, half of the island. These tussock-covered slopes are the main breeding places of the Wedge-tailed Shearwater.

Several penguins were taken out of their shelters for examination. They appeared to be well-feathered immature birds, somewhat duller in plumage and smaller than adults, also rather weak on their feet. One bird placed near the shore on the sandy beach would not enter the water but made for the shelter afforded by the rocks. Apparently the adult birds were at sea during our visit.

Our party walked right around the island, progress being rather strenuous at times because of the jumble of rocks. Wherever sufficient earth had gathered the Wedge-tailed Shearwaters had their burrows. These were quite numerous and for the most part could be investigated without much trouble. Some under rocks, or among twisted roots, or too extensive, were inaccessible. Most of the burrows appeared fresh and recently 'worked', and although hundreds were searched, not one adult or nestling shearwater was located. Broken egg-shells were often found in the burrows or nearby, and one very young decomposed nestling was found close to the entrance of one burrow. It is worthy of note that neither adult nor young Wedge-tailed Shearwaters were found by the party that visited the island in February 1947. February is the time when nesting should be at its maximum in this species.

Earlier visitors seemed to have little difficulty in 'unearthing' Wedge-tailed Shearwaters. The results of the

two most recent visits, 1947 and 1954, indicate that the rookery has suffered a serious decline. That the island is still used by the species is undoubted. We found numerous freshly-scraped burrows; the distinctive 'aroma' emanating from petrel burrows was clearly present; egg-shells were plentiful; and one very young dead bird was found. Even if the adult birds were at sea, nestlings would be present if the colony was in a flourishing state. Usually young Wedge-tailed Shearwaters do not abandon their burrows until April.

The logical conclusion is that predators have caused the decimation. Many years ago a party visiting the island reported one of the largest 'goannas' they had ever seen. Doubtless it lived on shearwaters in season; one or two smaller ones were also seen. Our party did not observe any 'goannas', but saw numbers of small lizards of the skink type, and a few water-dragons, but none of any unusual size. Snakes may be present, as they could easily swim to the island from the nearest part of the coast, about half a mile away. Presumably a falcon, possibly a Peregrine (*Falco peregrinus*), haunts the island, as we found the leg of a racing pigeon below one of the cliff-faces. Such a bird would have little or no effect on the nocturnal shearwaters. Cats or rats are not present as far as is known. The possibility of human interference cannot be entirely ignored, although the possibility of ravages from such a source at the present time is purely conjecture. The accessibility of the island from the southern, or populated, side of Broken Bay is not entirely easy, but the distance across from the northern, or thinly-inhabited side, is rather short and would present little difficulty in calm weather.

Much of the top part, or plateau, of the island is covered with gnarled forest trees and thick scrub. The rookery of the Sooty Shearwaters is near the highest point. It is somewhat restricted in extent and lies in sandy loam behind a rock platform above the seaward cliffs. This platform is quite open to the sea and provides a suitable launching place for the birds.

Four young birds taken from burrows excavated by our party were covered in greyish down, without any signs of feathers. The largest of the four was a few weeks old, two others were somewhat smaller, whilst the fourth was quite young. No adults were found, but the length of the bill of the oldest bird, 37.5 mm., and the stoutness of the bill in all four nestlings, showed that all were undoubtedly Sooty Shearwaters. It was in this spot, that an adult and a nestling Sooty Shearwater were found in 1947.

It is believed that the rookery is entirely occupied by Sooty Shearwaters; an overflow or offshoot of the main colony is situate on a small slope about thirty feet below

the top of the island. It was reached by a few members who climbed down a fissure or gutter in the rocks. Time did not permit a careful investigation of this section, but the size and length of the burrows, several of which extended under rocks, were similar to those in the main colony. Many burrows were not examined, so as to disturb the rookery as little as possible.

Lion Island is the only definite breeding place of the Sooty Shearwater off the south-eastern Australian coast. An egg of the species was taken on Broughton Island, north of Port Stephens, New South Wales, many years ago, but details of the situation of the burrow and other relevant facts are lacking. It could be assumed that at that time there would be scant consideration that such a common New Zealand breeding sea-bird, so little known then in Australian waters, would breed here also. However, future investigation might eventually prove that the species breeds regularly on Broughton Island as it apparently does on Lion Island. The only other known breeding place in Australia is on Tasman Island, eastern Tasmania; it is on the highest part of that island, as is the case on Lion Island, and is some 900 feet above sea level. It might be mentioned in passing that by some strange *lapsus* the compilers of the 1953 *Checklist of New Zealand Birds* stated, in adding extra-limital breeding distribution of the species—"Also Bass Strait (rare)"!

A dead Short-tailed Shearwater (*P. tenuirostris*) was found on the lower slopes on the northern side of Lion Island. This bird had probably succumbed during migration when countless numbers of its kind pass down the eastern Australian coast during September-November to their breeding grounds in Bass Strait. Its discovery created the interesting fact of three species of dark shearwaters found on the island in the one day.

The only land birds seen were a few Eastern Rosellas (*Platycercus eximius*) and a honeyeater which flew too quickly through the scrubby growth for correct identification.

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