

FURTHER NOTES OF SOME BIRDS SEEN UPON ISLANDS OF THE EYRE PENINSULA COASTS, SOUTH AUSTRALIA, WITH REMARKS ON THE SOIL EROSION OF NORTH GAMBIER ISLAND

By H. H. FINLAYSON

The following observations were incidental to enquiry into mammals and cover probably only a small proportion of the birds which occur.

THE HUMMOCKS: FEBRUARY 3, 1949.

Landed and spent two hours upon the island lying to the north of the lighthouse island, which is the most southerly of the chain of four. An almost bare granite dome, it is probably covered by spray in heavy westerly weather, and many saturated brine pools were found on the summit. There are no trees, but towards the south-eastern end there is a patch of peaty sand supporting small Salsolaceous vegetation and *Nitraria schoberi*. This area is riddled with small burrows, about the entrances of which mummies of the White-faced Storm Petrel (*Pelagodroma marina*) were seen. This species has been recorded from the lighthouse island to the south, by Wood Jones.

Noted also: Starlings (*Sturnus vulgaris*), 9 Cape Barren Geese (*Cereopsis novae-hollandiae*), many Silvereyes (*Zosterops lateralis*), Rock Parrot (*Neophema petrophila*), Sooty Oyster-catcher (*Haematopus unicolor*), Silver Gull (*Larus novae-hollandiae*), Pacific Gull (*Gabianus pacificus*), and a bird thought to be the Skua (*Stercorarius parasiticus*).

BLACK ROCKS: AVOID BAY: FEBRUARY 7, 1949.

Landed on the larger mass to the south of the crag, which appears to be a soft dune rock, which is rapidly disintegrating, forming steep floury drifts on the bay side, which have to be negotiated to gain the travertine cap. Fairy Penguin "roads" are prominent on the edges of these drifts, and on the sparsely vegetated top saw a small party of the Rock Parrot (*Neophema petrophila*).

LIGUANIA ISLAND: FEBRUARY 7, 1949.

Could not land here owing to the swell, but at sunset, off the south-eastern end, saw at a distance (as on November 21, 1947, at

the same place) a large flock of Petrels over the water—probably *Puffinus tenuirostris*.

NORTH NEPTUNES: FEBRUARY 8, 1949.

Landed on the main island and spent some hours on the south-eastern portion, which is vegetated rather densely with knee-high currant bush and *Nitraria*, with a coarse tussock grass in places and much pelargonium in semi-dead mats. This area is closely honeycombed with burrows of mutton birds (*P. tenuirostris*), several mummies of which were seen, and several large bloated nestlings were accidentally dislodged from burrows when walking (or scrambling) about.

Only one snake was seen, but if ubiquitous tracks and numerous dejecta are a safe guide they heavily infest all this part of the island, where rats are their occasional victims also.

Cape Barren Geese, Silver Gulls (both adult and immature), a single Osprey (*Pandion haliaetus*), and many tracks of Fairy Penguins were also noticed.

WEDGE ISLAND, FEBRUARY 10, 1949.

Landed before dawn, and in a complete circuit of the island during the day noted Starlings in large numbers, Silvereyes ditto, Spur-winged Plover (*Lobibyx novae-hollandiae*), Welcome Swallow (*Hirundo neoxena*), Rock Parrot, an accipitrine thought to be either the Black-shouldered or Letter-winged Kite (*Elanus axillaris* or *E. scriptus*), Sooty Oyster-Catcher, Silver Gull, Pacific Gull, and a Sooty Albatross (*Phoebetria fusca*). The last was seen at quite close quarters on the beach, half a mile south of the homestead, and again momentarily on North Gambier Island, 1½ miles away (probably the same bird).

The present owner of the island, Mr. D. F. Cooper, states that Quail (sp. ?) are very plentiful at times and that wild duck nest there in small numbers. He has also seen

Curlews (*Burhinus magnirostris*), Bronze-wing Pigeons (*Phaps chalcoptera*), "Wood" Pigeon (sp. ?), Black Swan (*Cygnus atratus*), Banded Land Rail (*Hypotaenidia philippensis*), and Cape Barren Geese.

With regard to the latter, Mr. Andrew Golley (a former owner) informs me that an attempt was made to domesticate this bird. Fledglings were taken from North Gambier Island, where the species breeds, and were kept about the homestead after pinioning, but never became reconciled to the place.

Wood Jones (S.A. Ornithologist, XIII, Pt. 8, 1936, p. 227) states that he has seen evidence of former rookeries of the Mutton Bird (*P. tenuirostris*) on Wedge Island in the shape of bones exposed in washaways, and evidently considers that the extinction of the colony was due to completion of an erosion cycle begun by destruction of vegetation by goats. Evidence derived from the adjacent island (infra) throws some doubt on this explanation, as Mr. Golley's testimony (derived from his own experience and that of his father as recounted to him) is to the effect that there have been no Mutton Birds breeding on the island as far back as 1878, and at that time the original vegetation was scarcely disturbed either by goats or agriculture.*

It is possible that this and other bone deposits on the islands are much more ancient than is supposed.

NORTH GAMBIER ISLAND:

FEBRUARY 13, 1949.

This small island lies about $1\frac{1}{2}$ miles from the Wedge, is about 150 ft. high and has an area of about 300 acres. Limestone cliffs invest most of the coast, but can be climbed in several places without difficulty. In moderate weather, boat landings are feasible at several points on the south-western coasts, and doubtless elsewhere also.

All the birds personally noted on Wedge Island were also seen here, with the exception of the Kite, and in addition a fairly large group of Cormorants (sp. not ascertained) were seen on the north coast.

Though small, the island holds much of

* Neither Morgan, S.A. Ornithologist, Vol. II. Pt. 6, 1916, p. 141, nor Mellor, Proc. Roy. Geog. Soc., S. Aust., X, 1907, p. 185, list the bird for Wedge Island.

interest bearing on the interrelation of soil erosion, vegetation and Mutton Bird colonies, both extant and extinct.

The marginal areas, especially on the south, west and east sides of the plateau are well vegetated with knee-high Salsolaceous shrubs with occasional larger bushes of *Nitraria schoberi*. The soil is a light sandy loam and freely undermined, especially towards the south-east angle, with burrows of a petrel. The burrows were not investigated, but numerous carcasses of *P. tenuirostris* were seen about, and there can be little doubt that this species is responsible for the holes. No evidence of snakes was seen, but the area of the Petrel colony also supports a considerable population of a native rat of the *R. greyi* group.

The central portions of the plateau are at present almost completely devegetated, owing to an erosion which has stripped the soil to the underlying travertine. Originally this area was the site of a flourishing *Casuarina stricta* grove and must have been a most attractive spot, but all the trees are now dead, except one moribund specimen, and exposed tree roots, columnar residuals of sand rock, bare limestone pavements and sand drifts now give the place a typically forbidding "bad lands" aspect.

In many of the drifts and at points quite remote from any portion of the living colony, large quantities of bird bones and egg shells (many of the latter perfect) are exposed—the bones represent *P. tenuirostris*, *E. minor*, and a larger species (possibly *Cereopsis*?).

While devastation of this kind is unfortunately common enough, the present example seems worth recording, because it has taken place independently of any human enterprise, and its whole history was witnessed by a single observer, Mr. Andrew Golley, who has known the island for an uninterrupted period of 42 years. To him I am indebted for much of the detail below.

The island has never been used for grazing by domestic stock or agriculture, and is only occasionally visited by fishing cutters to replenish supplies of fresh meat from the goats. These are believed to have been introduced by sealers or other freelance agency in the pre-settlement era of the colony, possibly as early as the 1820's, and have had an uninterrupted tenure to the present day.

Their numbers have fluctuated greatly, reaching a maximum about 1894, when they were estimated at 300 head and falling away rapidly till in 1914 only two females could be found. The cause of this depletion is conjectural, with human exploitation as perhaps the most probable. In 1914 a male was introduced from Wedge Island, and at present I estimate them at about 20 head. As far as is known, there is no surface water on the island and the goats are probably dependent on the vegetation for their water intake.

The Sheoak stands on the plateau were undamaged until 1916, and underneath them there was no bush growth and no Mutton Bird burrows, but a thick growth of a wally grass (*Danthonia* sp.), in which the goats were accustomed to camp in the shade of the trees. The marginal areas were as they are to-day, bushed and honeycombed with burrows. It may be noted that this general distribution of vegetation represents the plant equilibrium as given by Osborne for similar small islands off the South Australian coast in the same region.

In 1916, at a time when the goat population had been at a low ebb for years, a party landed from a cutter and fired the grass under the Sheoaks. Drift began almost at once, and the grass was never re-established. For the next few years, every heavy blow from the south drove large quantities of sand over the north cliffs, and the island (in plain sight from the Wedge) appeared to "smoke." It was some years before the Sheoaks began to die, and in 1936 there were still a good many living, but their destruction is now (1949) almost complete and has obviously been caused by root exposure.

From Mr. Golley's account it would appear that:

- (1) a population of goats (reaching saturation density at one stage) may enjoy the tenure of a small island for a century or more without great damage to either the vegetation or the bulk of its bird colonies, when traffic is not canalised to and from surface waters;

- (2) while it is possible that the bird bone-deposits now exposed in the eroded area represent a colony whose burrows were trampled by the goats

prior to 1878, it seems more likely in view of the large numbers of unbroken egg shells and other factors that they are derived from a much earlier colony, possibly dating back to a time when this area was also bushed and trees still absent.

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