

The area is in swampy country north of the Okarito Lagoon and conditions there many years ago are described in published records of Mueller, Potts and other observers.

The object of the recent visit was to determine the position of the nesting colony, to estimate the nesting requirements of the birds, so that these might be taken into account when milling and other industrial claims in the district were being regulated. Full details of these matters have been submitted to the Government and measures for the proper protection of the herons are likely to be taken. The present communication therefore deals only with the general status of the colony and the habits of the birds as observed.

On the day of our visit, 11th December, 1941, no White Herons were observed at Okarito township nor at such parts of the lagoon as we could see on the journey northward. There were, however, in the neighbourhood of Okarito township several White-faced Herons (*Notophox novaehollandiae*). After careful enquiry from a number of residents I am satisfied that the common "Blue Crane" of South Westland is not *Demigretta sacra*, which is practically unknown, but *Notophox novaehollandiae*. It seems likely that it has been a common breeding species there during the whole period of European settlement, and before, and that it has somewhat similar winter dispersal habits to those of the White Heron. Local observers consider that it has always been a much more plentiful bird than the White Heron.

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The nesting place of the White Heron was found by our party on the banks of the stream on which earlier observers have found heronries. The present site is, however, somewhat lower downstream than the earlier records. As seems invariably the case, the herons are associated with and outnumbered by nesting shags of the small species (White-throated and little Pied Shags, *Phalacrocorax brevirostris* and *P. melanoleucus* which may be considered as one species). Of the latter there were some 11 nests in use and of the herons four nests. The creek is wide at this point and all the nests were in low trees, the shags in kamahi and kowhai and the herons on the crown of tree ferns (black and silver punga) overhanging the water and well sheltered from wind by the tall stands of kahikatea behind and around them. The nesting season was much further advanced than we had expected to find it. Eight adult birds in ornamental nesting plumes were present, two young from one nest were already flying strongly, two more were able to fly but not well, another was able to leave the nest and scramble about, and only one, in down, was still in the nest. The first eggs in this colony must therefore have been laid in September. The shags had well-grown young nearly able to fly. It is evident that the main nesting requirements are suitable trees adjacent to open space over water and high permanent shelter from wind. Food can be brought from a distance by both shags and herons.

There is little doubt that a few more herons may nest wherever the small shags form an undisturbed colony in sheltered places, and I was reliably informed of one heron nest about four years ago with shags at Canoe Point on the Okarito. However, such conditions are now rare in the district and the present area must be considered the only suitable place.

BIRDS ON ISLANDS AROUND STEWART ISLAND. By E. Stead.

(Notes made during visit between November 28 and December 3, 1941.)

GREEN ISLAND.

FANTAIL (Pied) (*Rhipidura flabellifera*). Not plentiful. Broods of young seen late November, 1941.

GREY WARBLER (*Pseudogerygone igata*). Not plentiful.

WAX-EYE (*Zosterops halmaturina*). Not plentiful.

YELLOWHEAD PARRAKEET (*Cyanoramphus auriceps*). A few dozens.

REDHEAD PARRAKEET (*C. novaeseelandiae*). Only two or three seen.

BROWN CREEPER (*Finschia novaeseelandiae*). Very plentiful. Nesting latter half of November, 1941. Egg clutch 2 or 3.

PIED TIT (*Petroica macrocephala*). Egg clutch 3 or 4, usually 4. Plentiful.

SOUTH ISLAND ROBIN (*Miro australis*). Plentiful, egg clutch 2 or 3.

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BELLBIRD (*Anthornis melanura*). Plentiful, clutch 3.

TUI (*Prothemadera novaeseelandiae*). A party of them came occasionally from Ruapuke Island. None breeding on Green Island.

PIGEONS (*Hemiphaga novaeseelandiae*). A party of six came on several occasions from Ruapuke. Did not nest on island.

HARRIER HAWK (*Circus approximans*). Several birds came regularly from Ruapuke to feed on Dove Petrels. We found two nests, both deserted; probably the result of interference by skuas.

WEKA (*Gallirallus australis*). Plentiful. Probably mainland type. Saw one "black" one which was not the usual Stewart Island black.

BANDED RAIL (*Hypotaenidia philippensis*). Had been plentiful, according to reports, but we saw none. Probably destroyed by weka.

GREY DUCK (*Anas superciliosa*). Saw three flying over the swamp in the centre of the island.

BLUE PENGUIN (*Eudyptula minor*). Plentiful.

YELLOW-CROWNED PENGUIN (*Megadyptes antipodes*). Plentiful.

BLACK-BACKED GULL (*Larus dominicanus*). Two or three pairs resident.

SOUTHERN SKUA (*Catharacta lonnbergii*). About 12 pairs nesting.

MUTTON-BIRD (*Puffinus griseus*). Not very numerous; probably only a few thousand on the island.

BROADBILLED PRION (Whalebird) (*Pachyptila vittata*). Many thousands of these were nesting on the island, but any reliable estimate of their numbers was difficult to arrive at owing to their similarity to the Dove Petrels. Nor could any reliance be placed on the relative numbers of the skeletons in the skuas' middens, as the Whalebirds begin to nest early in September, and the Dove Petrels not until the middle of November. The Skuas had, therefore, at the beginning of December, been killing Whalebirds for four months, and Dove Petrels for only two. Moreover, from instances in which, among fresh skeletons there were almost equal numbers of the two species (which was certainly not the case over the whole population); it seems that the skuas have a preference for Whalebirds, or find them easier to catch.

DOVE PETREL (*Pachyptila turtur*). These can be no doubt that Green Island is the chief home of this species in the Stewart Island area. With a reasonable knowledge of the outlying islets with the exception of Bench Island, I should say that there are probably more Dove Petrels and Whalebirds on Green Island than on all the others put together. The Whalebirds begin laying in the second week in November.* At the end of November the earliest Whalebird chicks were beginning to get their feathers while the Dove Petrels were still laying. We found many cases where the Dove Petrels had cleaned out burrows deserted by Whalebirds, scratching the addled eggs on to the surface of the ground outside. By the checks we were able to make it seems certain that the number of these two birds on Green Island is of the order of millions. There were large areas of the island where the average density of the burrows was over one per square yard. Two hundred acres so populated gives about a million nests.

[*This should be September.]

Twice we saw huge aggregations of these birds in the late afternoon. On calm evening just before sunset they came from the open sea into the channel between Green Island and Ruapuke. They swept past the point below our hut in a stream a quarter of a mile wide and so dense that we estimated that from fifty to one hundred birds were passing per second. This flight lasted for half an hour, by which time there were great rafts of birds scattered over the channel. Later, in the dusk when these flocks took flight it was like huge clouds of smoke drifting over the sea. Through field glasses each flight was an indescribable jumble of flashing white underparts and darker backs.

On another afternoon when a heavy wind got up suddenly, the birds again traded round this point, the nearest of them not twenty yards from the shore. Here we could separate the two species, and we arrived at the conclusion that there were about twenty-five dove petrels for every whalebird. But there is no certainty that this is the proportion in which the two species nest on the island. Actually I came away with the idea that there were probably about twelve dove petrels' nests for every whalebird's.

(I have used throughout the name "Whale bird" for *P. vittatus* as I have no doubt that it was the profile view of its head that gave this bird its very appropriate trivial name, and not its association with whales. The Dove Petrel (*P. turtur*) too, received its trivial name from its appearance and not from any association with doves.)

RARE WADERS IN THE FIRTH OF THAMES. By R. B. SIBSON.

On October 27, 1941, on the west side of the Firth of Thames, I was able to visit at full tide, a shingle bank where waders were known to assemble. To my surprise, since it was the middle of their breeding season in Canterbury, a party of Wrybills (*Anarhynchus frontalis*) (22) was still present. They behaved with the tameness which they customarily show at their high tide roosts and so I was enabled to view at a distance of a few yards a Curlew Sandpiper (*Calidris testacea*) and four Red-necked Stints (*Calidris ruficollis*) which were associating with them.

Although of much the same size as the Wrybills, the Curlew Sandpiper stood out at once by reason of its decurved beak, longer legs and browner grey. It was a pale bird, almost white underneath and brownish grey above, with no outstanding plumage features except a white eye stripe. When it flew among the Wrybills it was not easily picked out, and I found it difficult to see the diagnostic white rump. Judging from its colourless plumage I should say it was a bird of the year. This would seem to be the first record of Curlew Sandpiper for the North Island.

Of the Stints, two showed distinct traces of red about the neck, and were, I imagine, adults not completely moulted out of breeding plumage. The other two were much paler and were probably birds of the year. In size they were midgets, even beside wrybills.

On November 9, Messrs. H. R. McKenzie, J. St. Paul and I visited the same shingle bank again at full tide and found eighteen Wrybills and presumably the same four Red-necked Stints present. The Curlew Sandpiper had gone.

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At Easter, 1942, Messrs. H. R. McKenzie, P. H. Wood and I camped at Miranda for the purpose of observing waders. On April 6 full tide found us strategically placed on the shingle bank mentioned above. At one end were about 130 South Island Pied Oystercatchers (*Haematopus ostralegus finschi*)—among which was an albino—at the other a flock of Wrybills, estimated at 700 on the average of three independent counts, and with them two Red-necked Stints. Both of these were in almost full breeding plumage with richly mottled backs and wings and well developed red neck bands. Excellent views were obtained at less than ten yards, and a thin, weak note "chit-chit" was heard.