THE SNARES ISLANDS EXPEDITION, 1947.

In November and December, 1947, a party of 10 spent 12 days at the Snares Islands, 62 miles south of the South Cape of Stewart Island. The expedition was organised and led by Dr. R. A. Falla, and its members included Dr. Robert Cushman Murphy (American Museum of Natural History), Mrs. Murphy, and four members of the Ornithological Society of New Zealand: Messrs. E. F. Stead, R. A. Wilson, F. L. Newcombe, and C. A. Fleming. This quite unofficial narrative of the expedition may be of interest to readers of "New Zealand Bird Notes."*

The expedition travelled in the 73ft. twin-screw motor launch "Alert" (known in the ports of New Zealand as the "Sea Scout launch"), with a crew of three under Captain A. J. Black, on whose skilful and confident handling of the vessel much of the success of the venture depended. "Alert" left Bluff early in the afternoon of November 21st, crossed to Half Moon Bay, and then to Port Pegasus. Weather-bound for two days at Pegasus, the party made profitable excursions by land and water. Ashore, kiwi "prods" in the moss were plentiful and red-fronted parrakeets **(Cyanoramphus novaeseelandiae)** were seen; Nelly Island (of Guthrie Smith) justified its name with a single half-grown giant petrel **(Macronectes giganteus)** chick; black oystercatchers **(Haematopus unicolor)** in pairs were seen at several points; and blue shags **(Stictocarbo punctatus steadi)** dived on the calm waters of the harbour. In the evenings mottled petrels **(Pterodroma inexpectata)** flew overhead uttering their cry of "te-te-te-te-te-te." With the ship's searchlight we could see them circling, often in pairs, and others, apparently engaged in some courtship display, were disturbed on the surface of the water. On Noble Island, breeding crested penguins **(Eudyptes pachyrhynchus pachyrynchus)** were visited, and, there and elsewhere, on the exposed outer cliffs, scattered inaccessible nests of the blue shag were located, perhaps for the first time since this shag was described as distinct.

After a night passage, "Alert" made the Snares at dawn on November 24, regular flights of diving petrels **(Pelecanoides urinatrix)** from the island indicating the direction of land before it was definitely sighted. We approached the rugged Western Reef in a rising northerly; angry seas boiled round sunken crags and cascaded from the kelp-fringed precipices of the chain of islets which old-time sealers called a "reef," even though they rise to heights of over 200ft. Rows of nesting molly-mawks decorated the ledges and summits of some of the islets, and flocks of 30 or more, settled upon the heaving waters, rose at the vessel's approach. They belong to a race of the white-capped molly-mawk **(Diomedea cauta)** which was thus confirmed as a breeding species at the Snares. Circling the reef, "Alert" made for the south-western cape of the main Snares Island, some three and a half miles away, through myriads of muttonbirds **(Puffinus griseus)** which darkened a horizon already indistinct with driving rain squalls. Passing south about the island and its smaller outliers, we made northward toward the boatharbour, but wind and sea had veered east of north, making the landing there unworkable, so the pick was dropped in 22 fathoms close

* The editor is grateful to Dr. R. A. Falla for permission to publish this account in "Bird Notes."

under the towering cliffs of the south-western headland, where most of the day was spent. Fur seals, hauled out on the talus made the rocks re-echo with their barking calls; Antarctic terns **(Sterna vittata)** had a small colony from which they called loudly to attack visiting skua **(Catharacta skua lonnbergi)** and black-backed gulls **(Larus dominicanus)**; cape pigeons **(Daption capensis)** circled the cliffs and some entered crannies in them: later, sitting birds were clearly seen from the boat. From the **Olearia lyalli** scrub capping the summit plateau, 600 feet above song of thrush **(Turdus ericetorum)** and fernbird **(Bowdleria punctata caudata)** drifted down. By afternoon, the sea had eased, and by backing into the boatharbour and making fast to trees and rocks, "Alert" was able to land the party and all its gear before dark. The night was spent dodging rain drips in the leaky castaway depot to the accompaniment of a muttonbird chorus, but next day, providentially fine, saw the erection of a comfortable camp: five sleeping tents linked by muddy trails with the depot, and a mess tent, constructed under the experienced direction of Major R. A. Wilson. "Alert" left the island that morning and the expedition settled down to its work. Fine weather was slow in coming, but much could be done in the rain, and the few days of sun were used to full advantage.

Snares Is. is roughly triangular in plan, with promontories reaching north, south-west and south-east, the greatest length of the island not greatly exceeding 1½ miles. From the summit on the south-west block, 620 feet high, a knife-edge ridge leads to a surface falling gradually east and north, bounded nearly everywhere by cliffs. Deep gulches with vertical walls, outlying stacks, reefs, and islets, all much smaller than the main, diversify the coastal scene. Olive-green **Olearia** clothes the surface of the island, varied locally by yellow-flowered **Senecio stewartii,** with extensive coastal fringes and other irregular patches of tall Subantarctic tussock **(Poa foliosa** and **P. astoni).** None of the browsing animals once liberated as food for castaways has survived at the Snares, and the group is also free from predatory mammals such as rats and mice; indeed, apart from European birds which have colonised, unaided, during the past 75 years, bird life on the island cannot have changed since Kirk, Chapman and Reischek made it known in the eighties of last century, or even since the sealing days more than half a century previously.

Crested penguins **(Eudyptes pachyrhynchus atratus)** were breeding in rookeries of from a dozen to a thousand or more nests, in clearings in scrub or beneath the trees. The north-eastern landing places were thronged with idle birds, including yearlings. Parties of adults landed and departed at intervals through the strong swell which usually swept around the coasts: a fascinating sight from the top of a cliff, and with an added excitement if a hungry fur seal was patrolling the surge. In the rookeries, fat downy chicks nestled, emu-like, with their heads between the guarding parent's legs, or, if more advanced, congregated in a "creche" under the conscientious care of two or three adult birds, "nursemaids" who guided their charges to safety at the approach of danger. The querulous peeping of the chicks scarcely ceased, day and night. Rockhopper penguins **(Eudyptes crestatus)** so abundant at some of the Sub-Antarctic Islands, are extremely rare at The Snares.

Photo: C. A. Fleming.

A typical creche in one of the larger Snares Crested Penguin Colonies. Relatively few adult birds attend a mob of chicks and shepherd them to safety on the approach of skua or man.

Photo: C. A. Fleming.

TWO ADULT SNARES ISLAND CRESTED PENGUINS with a small creche of chicks. Aggressive behaviour from bird on right has been stimulated by the approach of the photographer.

PLATE VI.

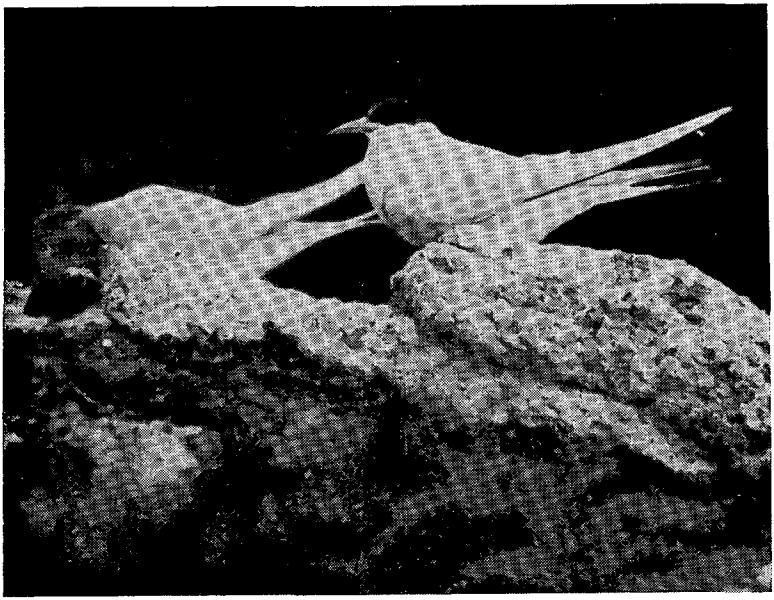

Photo: C. A. Fleming.

A PAIR OF ANTARCTIC TERNS on the nesting rock at the Snares.

Photo: C. A. Fleming.

SNARES ISLAND TOMTIT pausing on a fern frond after delivering food to nestlings.

Over the whole surface of the island, especially in the tussock areas, the Snares fernbird is unbelievably abundant, and its calls are one of the island's characteristic sounds. Nests found in the tussock were in places less than a chain apart, and frequent territorial displays attested the density of the population. The Snares black tomtit **(Petroica macrocephala dannie)** is equally conspicuous, though its territory seems to be at least three times as large as that of the fernbird. Disturbed peat around the camp always attracted down one or more tits which were tame enough to perch on one's boot and to enter the tents. The Snares snipe **(Coenocorypha aucklandica huegeli)** is probably as abundant as the tit but its secretive, semi-nocturnal habits made it less obvious. Its nesting season had just begun, and many pairs were still together, walking quietly through the muddy lanes between tussocks, feeding in the odorous scaps which drained every penguin colony, and occasionally uttering their repeated whistling call. Apart from the European birds (thrush, blackbird **(Turdus merula)**, starling **(Sturnus vulgaris)**, sparrow **(Passer domesticus)**, chaffinch **(Fringilla coelebs)**, goldfinch **(Carduelis carduelis)**, redpoll **(C. cabaret)**, the only other non-marine species at the Snares are the grey duck **(Anas poicilorhyncha)** and the silvereye **(Zosterops lateralis)**: the expected pipit **(Anthus novaeseelandiae)** was never seen, and must be exceedingly rare, if, indeed, its record from the Snares is valid.

Across the boatharbour from our camp, Antarctic terns and silver gulls **(Larus novaehollandiae)** had a small but healthy breeding colony, and others were scattered at irregular intervals around the coast. Black-backed gulls at the Snares probably number less than a dozen in all; perhaps they find life difficult with the skua as a neighbour. Of the latter there is a vigorous population; in most nests chicks had hatched and were being reared on daily offerings of kuaka, muttonbird, prion and mottled petrel.

During the day, muttonbirds were always visible out at sea; on land their ubiquitous burrows, the calls that came when we walked over them, and scattered surface-laid eggs reminded us of the existence of incubating troglodytes below, but every evening they proved to us that they alone among Snares Island birds, are to be numbered, not in thousands and in tens of thousands, but in millions. At the Snares, muttonbirds come ashore earlier in the evening than at most breeding colonies. At about 6 p.m., in full daylight, a curtain of flying birds is drawn across the sky above the island; after sunset the circling hosts are so dense that the sound of their pinions in the air rises above the breaking of the swell, and, later still, a chorus of greeting birds comes from all parts of the island. Soon after 10 o'clock the muttonbirds become silent: many, in fact, are asleep on the ground, head under wing, until with the approaching dawn the chorus awakes, and the birds stream seawards. By the time the muttonbirds quieten other petrels are in evidence: kuaka (diving petrel) frequently hit our tent, and their euphonious crooning was our lullaby. Mottled petrels became audible some time before 10, and seemed plentiful enough in the air above, but were not encountered on the ground, though the skuas found them. Fairy prions **(Pachyptila turtur)** nested deep in rock crevices among the vast boulders piled along the shores. Broad-billed whalebirds **(P. vittata)** proved elusive, but had

been captured freely by some skuas. Not a sign was seen of the large race of fluttering shearwater **(Puffinus gavia huttoni)** reported from the Snares. A few nellies frequented the eastern shores (one day two were ashore on the rocks), and royal albatross **(Diomedea epomophora)** also showed interest in the land, but in neither case was breeding proved. The handsome Buller's mollymawk **(Thalassarche bulleri)** which at other seasons is such a conspicuous inhabitant of the Snares, had not yet come ashore, but its nests were found in large numbers above the coastal cliff, and even some distance inside the bush margins.

"Alert" returned on December 4, and on the same day Dr. Falla and Captain Black landed on one of the islets of the Western Reef. This was the highlight of the trip, for there is no record of such a landing since the days of the sealers who handed down the almost legendary report of meeting cape pigeons there: certainly this was the first time a scientist had been ashore on those forbidding rocks. Fur seals dominated the beaches; white-capped mollymawks were nesting nearby on adjacent islets; populous penguin colonies on the bare rocky slopes rivalled those of the Bounty Islands for spectacle; and Dr. Falla was able to settle one of the outstanding problems of seabird distribution by studying at close quarters the cape pigeons which were sitting on eggs in every cranny. Weather prevented a repetition of the landing on the following day; in fact, there are probably few days in an average year when conditions of wind and swell would allow the approach of a boat.

On December 6 camp was broken, "Alert" bore the party back to Stewart Island in perfect weather—oily swell and brilliant sunshine—and reached Bluff on Sunday, December 7.—C.A.F., 27/12/47.

IDENTIFICATION OF BIRDS BY RADAR.

By C. A. FLEMING, Wellington.

During the war, Dr. Elizabeth Alexander (Radio Div. Lab., Department of Scientific and Industrial Research) engaged on secret radar research in the Cook Strait area, inquired as to the probable identity of birds which caused characteristic effect on the radar screen at night. One, relatively small, fed on the surface of the water in large flocks, and rose in characteristic fashion in front of advancing vessels, "peeling off" the surface of the sea and settling again behind after the disturbance passed. Another larger bird seemed more solitary, and flew in wide sweeps over the surface.

Gulls and terns roost at night, but petrels are known to be active at night, so, in view of the limited number of petrel species abounding in Cook Strait, it was suggested that the flocks of small birds were fluttering shearwaters **(Puffinus gavia)** whose daytime feeding habits closely resemble the description given. The larger solitary birds might be anything from sooty shearwater **(P. griseus,** the muttonbird) to albatrosses. These birds were observed at night from land some 10 miles away—surely a record, even for a tentative identification.

Birds and fish give characteristic disturbances on the radar screen, and failure to distinguish a breaching whale from a surfacing "sub.", or a low-flying frigate-bird from a periscope caused a number of false alarms on merchant vessels during the war.