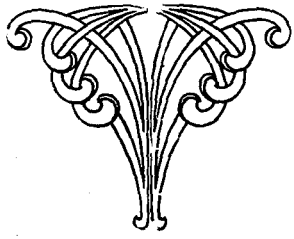
Vol. 2. No. 6. *October, 1947.*

New Zealand Bird Notes



Bulletin of the New Zealand Ornithological Society.
Published Quarterly.

New Zealand Bird Notes

Bulletin of the Ornithological Society of New Zealand.

Edited by R. H. D. STIDOLPH, 114 Cole Street, Masterton.

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CONTENTS.

ILLUSTRATIONS.

CLASSIFIED NOTES IN NEXT ISSUE.—Members are reminded that classified notes will be published in the January issue. These should be sent immediately to the district organisers so that they can be in the hands of the editor not later than November 1.

BANDING OF TASMANIAN MUTTON-BIRDS.—In the course of a population study of the Tasmanian mutton-bird or short-tailed shearwater **(Puffinus tenuirostris)** conducted jointly by the Council for Industrial and Scientific Research and Tasmanian Fauna Board last March at Flinders Island area, a considerable number of birds was banded. The rings are of copper and bear the following inscription with a serial number: "Notify Fauna Board, Hobart, Tasmania, Australia." Remains of this species commonly occur on east Australian beaches between September and January and members in a position to do so are asked to keep a careful watch out for marked birds during the coming season. New Zealand ornithologists are also asked to keep a look-out. Recovered bands should be returned to the C.S.I.R., 314 Albert Street, East Melbourne, C.2, Victoria; or Fauna Board, Police Department, Hobart, Tasmania.

BIRDS NEAR CROMWELL, OTAGO.

By J. Middleditch, Cromwell.

During the last breeding season there was a small colony of black-billed gulls **(Larus bulleri)** at the Lindus River where it flows into the Clutha. The nests were on a low gravelly delta that is covered by water in flood-time. Eggs were seen on October 20, 1946. Some eggs had hatched on December 8 and half a dozen chicks were on foot. When disturbed these immediately took to the water.

Pied oystercatcher **(Haematopus finschi)**, stilts **(Himantopus himantopus)** and banded dotterel **(Charadrius bicinctus)** appeared to be breeding in the same area, but I could not find any nests. A few terns (probably black-fronted **Chlidonias albistriata**) also were present, but I could not identify them. By their behaviour, they, too, seemed to have nests nearby.

A harrier **(Circus approximans)** had a nest with four young, about 50 yards away. There was no sign of anything but the remains of young rabbits near the nest.

Early in January, 1947, all the gulls' eggs had hatched and the young, still on foot, ran into the long tussock with the old birds hovering around and making a great noise. The young seemed to be in all stages of growth. Some appeared to have been hatched only a few days while others were much older.

I counted 150 nests, eight dead young in nests, and one egg unhatched. I could only count 50 young birds on foot but others may have been in the tussocks.

I have seen altogether six bitterns **(Botaurus poiciloptilus)** on the Clutha flats this year. This is much more than usual. For three years one lone bird stayed in the same little swamp but it has disappeared this year.

Pied fantails **(Rhipidura fuliginosa)** arrived on the flats about May 5, 1946. Their arrival seems to coincide with bad weather in the high country. White-eyes **(Zosterops lateralis)** appear to arrive about the same time as the fantails but they do not stay.

I found the nest of a pipit **(Anthus novaeseelandiae)** on January 20, 1947, on the flats in the Lindus Valley. It was lined with cow hair and had four eggs. There are quite a number of these birds on the Lindus.

I did not observe the arrival of the banded dotterel in the spring but the earliest chick seen was on 23/10/46. This chick was hatched near the Cromwell-Lowburn Road over which I passed every morning. I think the birds left as soon as the chicks could fly strongly enough, which was early in February.

BIRD BEHAVIOUR.—The difference in the behaviour of blackbirds **(Turdus merula)** and thrushes **(T. ericetorum)** when they manage to find their way into a net-covered strawberry garden is notable. When the blackbird is chased, it always makes for the edges or the corners of the garden, and is easily captured. A thrush, on the other hand, will make for the centre of the strawberry garden and cannot be caught. The cover has to be opened to allow it to escape.—W. Davidson, Dunedin Naturalists' Field Club.

BLACKBIRD STUDY.

By Bruce Robertson, Form II., Hakataramea School.

This study of the blackbird **(Turdus merula)** covers the 1946 breeding season:—

When was the nest started and where?—October 8, on a clay bank near a prunus tree, about 7 feet from ground level, about a chain from the main school doors.

When was the nest finished?—On October 11. Mud was placed in the nest on October 10 and grass over the mud on October 11. The cock bird appeared to do most of the nest building.

Size, shape and material of nest; give description.—Cup-shaped; inside diameter about 4 inches; made of dry grass, grass roots, straw, mud and yarrow stalks.

When were the eggs laid?—First egg laid 14/10/46. Bird on nest 45 minutes. Hen accompanied by cock bird to nest. Cock bird stayed close to the nest. Second egg 15/10/46. Bird on nest 9.35 to 10.15. Third egg, 16/10/46; fourth egg, 17/10/46.

Number and Description of Eggs.—Four eggs, greenish-blue with reddish-brown spots; about three-quarters of an inch long.

Time of incubation.—Three eggs hatched 30/10/46 (13 days).

Time fledglings were in the nest.—Birds left nest 11/11/46 (12 days). The hen bird kept the nest clean and cleared out most of the droppings.

Food of young and adults.—Worms, insects, grubs, etc. By using field glasses we established that the birds definitely help to control insect pests. Large numbers of caterpillars were eaten.

How often were they fed?—Forty times in four hours (both birds). Hours observed: 10 a.m. to noon and 1 to 3 p.m.

Part taken by cock bird: One, in building the nest?—Appeared to do most of the building. Two: Incubation?—No part taken. Three: Care and feeding of young?—Fed both young and hen bird while she was on the nest. Both birds fed nestlings.

Was the nest used for a second brood in the same season?—No second brood. A pair inspected the nest but did not use it. Another nest was built close by apparently by the same pair.

From your observations give reasons for saying the bird is harmful or otherwise.—Useful in helping to control insect pests.

BIRD OBSERVATION IN WELLINGTON.—In the middle of May, 1947, a harrier **(Circus approximans)** soared over my house in Beauchamp Street, Karori. It appeared to have come from the direction of Makara, and turned south-east over Karori. It was being constantly attacked by three magpies **(Gymnorhina hypoleuca)** which seemed to have no trouble in flying much faster than the harrier. One magpie left the group when the harrier turned south; but the two remaining magpies kept up their attacks and disappeared with the harrier.—W. J. Phillipps, Wellington.

Dr. W. R. B. Oliver, who retired recently from the position of Director of the Dominion Museum, Wellington, has been appointed Acting-Director of the Canterbury Museum, Christchurch.

CONTRIBUTIONS TO THE GANNET CENSUS.

VI.—MAHUKI GANNETRY, GREAT BARRIER.

By W. M. Hamilton.

On December 27, 1946, a party of five (Drs. C. P. McMeekan and H. Morrison and Messrs. N. Hamilton, A. Trotter and the writer) visited the gannetry at Great Barrier. The gannetry is situated on the north-west point of the island known locally as Gannet Island and shown on the Admiralty Chart as Mahuki, the most south-westerly of the Broken or Pig Islands. Anvil Island is a large stack lying close to the south-west of Mahuki. The latter is 180 acres in extent and rises to an estimated height of 400 feet. It is stated to be Native land without individual title. A small flock of sheep and one or two head of cattle are grazed on the island.

Owing to strong westerly winds the party landed on the eastern side of the island and proceeded overland to the gannetry. As soon as we appeared in sight of the colony, at a distance of 300-400 yards, the birds (estimated at 600-700) took to the wing, only twenty or so remaining on nests. A small number of sheep and lambs, startled by our approach, also ran out on to the gannetry, so we sat on the ridge and waited until the sheep left the colony and the majority of the gannets **(Morus serrator)** gradually returned (perhaps 30 minutes).

As soon as we started down the slope towards the colony the gannets again took flight only some twenty remaining and a number of these flew off as we approached. The birds were obviously very scared and quite abnormal in behaviour. The birds would not return while we remained on the colony and since none of the ridges command the whole colony a count could not be made. The numbers were estimated at 300-350 breeding pairs. This estimate was later confirmed by Mr. R. Cooper, of Port Fitzroy, who estimated the normal population at 300 pairs (not based on count).

The gannetry contained one chick (partly feathered) and 50 new-laid eggs. In view of this very discontinuous distribution of eggs and chicks and particularly in view of the very peculiar behaviour of the gannets themselves it appeared to us that the colony had been raided, probably between December 20-23, and all eggs and chicks removed.

One member of the party (N.H.) made a further visit to the colony approximately a month later and found only one egg (being incubated) and no chicks at all.

The colony could easily be fenced to prevent the ingress of stock and this would probably suffice to deter casual visitors from entering the colony. Less than one chain of fencing would be necessary but some means would have to be devised to permit the young gannets to reach the grassy slopes of the island which normally form their exercise ground. There may be legal difficulties in declaring the area a sanctuary and fencing as suggested, but it is urged that some such steps are necessary if the colony is to be preserved.

VII.—NEW GANNETRY OFF KARAKA POINT.

By G. A. Buddle.

A new gannetry has been discovered off Karaka Point, south of Hohoura and north of Doubtless Bay, North Auckland. Gannets **(Morus serrator)** were nesting on two small rocks about a mile off Karaka Point

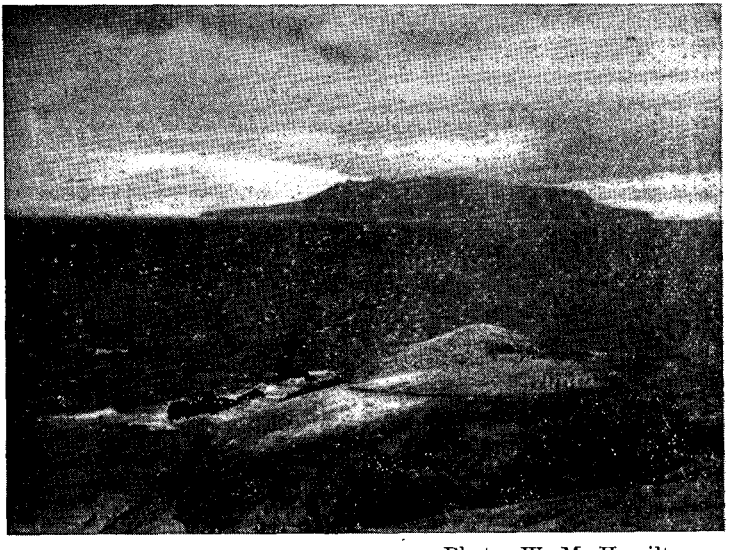

Photo. W. M. Hamilton.

Birds leaving colony on approach of observers.
Little Barrier Island sanctuary on skyline.

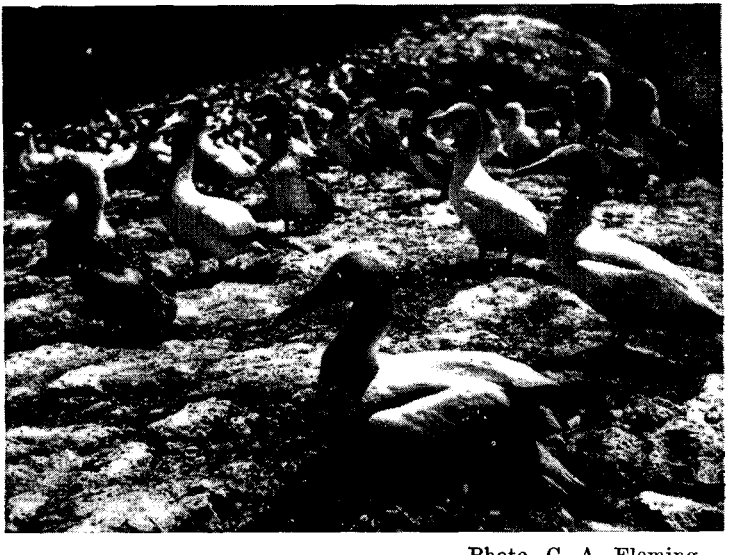

Photo. C. A. Fleming.

Gannetry, 28/11/1934. Contrast conditions described in 1946-47 season.

MOHUKI GANNETRY, GREAT BARRIER.

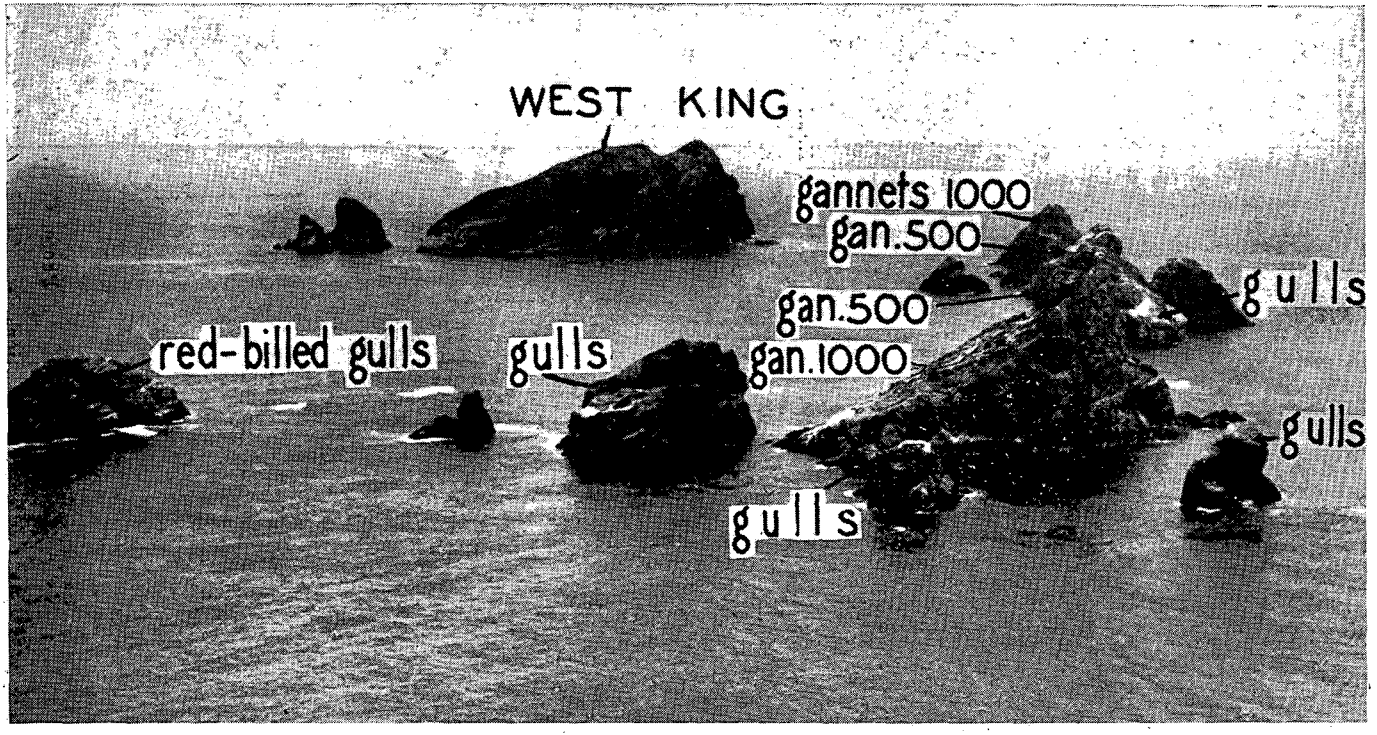

Photo. G. A. Buddle.

PRINCES ISLAND and WEST KING from summit of South-West King, showing location of some of the Three Kings Gannetries and Red-Billed Gull Colonies, 3/1/1947.

in January, 1947; according to local fishermen this is the first season they have actually nested there. Landing was not possible owing to a heavy swell but I counted about 30 birds sitting

VIII.—GANNETS OF THE THREE KINGS.

By G. A. Buddle.

This report is a preliminary estimate of the gannet **(Morus serrator)** population of the Three Kings group made during a short visit from January 3 to 6, 1947. An accurate census as outlined in the instructions for 1946-47 census would entail an elaborate and costly expedition. At least five landings on separate islands or rocks would be necessary. These landings in all cases would be hazardous, not to say dangerous, and would be limited to certain combinations of weather and tide; while it is probable that not more than one landing a day would be feasible. Therefore an expedition with a mother ship would probably have to lay off the group for at least a fortnight to complete the task. Any proposal to base a camp on Great Island and make use of a dinghy and outboard for visiting the various gannetries would be inviting disaster and should not be considered.

South-West King.—This island is roughly triangular in shape, rising to a height of 607 feet at the north and west end, with precipitous cliffs sloping gradually to a low point about 50 feet in height at the southern end. Here a reasonable landing can be made under suitable conditions of tide and weather, and the cliffs climbed to the commencement of the gradual slope, the lower parts of which are covered by a large colony of red-billed gulls **(Larus novaehollandiae)**; the slope is bounded on the east by a cliff along the edge of which the gannet colony is situated. It comprises a bare strip of sloping rock 5 to 20 yards in width, with dense scrub of karamu and ngaio, kawakawa, etc., at the back. It is split into four sections by intrusions of the scrub to the cliff edge; the lower one contained ten nests, the second 20, and the third and fourth together about 150, making a total of 180 nests or eggs.

In this colony (3/1/47) there was one young with a few mottled feathers and six downy young. A good number of nests or eggs appeared to have been destroyed or deserted. I considered that, in view of the number of birds circling in the area, there should have been a much greater number of occupied nests.

Some distance round the cliffs to the west was another small colony of about 20 nests, and still further to the north-west, high up on a cliff ledge (both inaccessible) was another of the same size. This makes a total of 220 nests, but I should put the gannet population of the island at a minimum of 750 birds, considering the number wheeling and circling in the area. This colony has the appearance of being on the increase. In the upper sections the birds are gradually increasing the nesting area by working back from the scrub, some of the occupied nests being at least 15 feet in from the edge of the cover, which is, in this area, mostly kawakawa and karamu.

Princes Islands.—This group of rocks presents great difficulty even in making an estimate. There are at least four colonies on isolated rocks, and in all cases they are intermingled or at least adjoining red-billed gull colonies, and in normal weather it is difficult to approach close enough to determine the areas even with the aid of field glasses.

Major Johnson and myself landed for a couple of hours on the second large rock counting from the West Island end of the chain (the one with a large hole in the wall). There is a little stunted karamu and grass, flax and tussock, but otherwise bare rock. Red-billed gull colonies are on the lower north-west slopes and also all over the south-east slopes, while the gannets occupy the bulk of the top plateau. There are very few nests, most of the eggs being laid in depressions on the bare rock. A complete count was impossible owing to part of the colony being inaccessible and out of sight. By count of the accessible area and an estimate of the small hidden area we made 250 nests, eggs and young (3 p.m., 5/1/47). Of the young, two were showing pin feathers and 12 were small downy chicks. Red-billed gulls nesting on this island outnumbered gannets by four or five to one, and the nesting areas overlapped, therefore I would suggest that any count from aerial photographs, unless the two species can be differentiated, should be treated with grave suspicion, and this applies to the whole of the colonies in the group, including S.W. Island. Taking the whole group into account, red-billed gulls probably outnumber gannets by 20 to 1. Unfortunately, owing to weather conditions, it was not possible to land on any other of the Princes rocks, but an estimate was made by comparison with the count made on Hole-in-the-wall Island, and approximate figures are given on the attached photograph, but again, even sailing by as close as practicable, it was difficult to accurately delimit the gannet areas from the gulls, and the figures are likely to be high.

West King, North-East King and Great King.—Made a close circuit of the islands, but saw no nesting colonies of either gannets or gulls.

Summary of total gannet population of Three Kings group:—

S.W. Island	750	birds
No. 1 Princes Island	1000	,,
No. 2 Princes Island	500	,,
No. 3 Princes Island	500	,,
No. 4 Princes Island	1000	,,
Total	3750	birds

General.—No birds of this year were seen on the wing in the area; not more than 20 live young were counted, but the remains of a considerable number of dead birds were noted. Nests were in the majority of cases non-existent, and those seen were much less substantial than is usual, probably owing to a lack of suitable seaweed in the area. The eggs were usually laid in a depression on the bare rock, and my impression is that there would be a very low percentage of successful rearing of young in this area.

Gannets at Sea.—The following table gives the number of gannets counted at sea on the trip to the Three Kings and return to Auckland:

	No. of Gannets.	
27/12/46—Auckland to Leigh	150	Fresh S.W.; overcast.
28/12/46—Leigh to Deep Water Cove	1	Strong westerly; overcast.
29/12/46—Deep Water Cove to Cavalli Island	80	Light N.W.; overcast.
30/12/46—Cavalli Island to Mangonui	5	Light N.W.; overcast.
2/1/47 —Mangonui to Tom Bowling Bay	50	Light S.S.W.; clear.
7/1/47 —Waikuku to Hohoura	—	S.W.; clear.
8/1/47 —Hohoura to Mangonui	45	Light N.E.; hazy.
11/1/47 —Mangonui to Whangaroa	3	Light N.; clear.
12/1/47 —Whangaroa to Russell	30	Light N.; variable.
13/1/47 —Russell to Deep Water Cove	12	Light E.
14/1/47 —Deep Water Cove to Whangaruru	—	Strong S.E.; overcast.
17/1/47 —Whangaruru to Kawau	17	Light S.E.; clear; changing to S.W.
18/1/47 —Kawau to Auckland	—	

TUI NESTING AT CLEVEDON, 1946-47.

By Fraser Murray, Clevedon.

Mr. A. E. Blundell, North Road, Clevedon, on November 11, 1946, saw a tui (**Prosthemadera novaeseelandiae**) carrying nesting material into a pine tree by his house. He climbed the tree on November 17, and found the nest with two eggs. It was well concealed and could not be seen from the ground.

The nest was visited on November 20 by Mr. H. R. McKenzie (H.R.McK.) and myself. It contained two eggs and no more were laid. The height of the nest was measured and found to be 35ft. from the ground. The tui was very tame and it was difficult to get her to leave the nest. The male did not appear, but Mrs. Blundell reported that he sang frequently from the top of a tall Norfolk pine. On the opposite side of the nesting tree I found another tui's nest, which was unlined. It was certainly one of the season as it had hardly any pine needles in it. On the 21st we put a sheathing of tin round the trunk of the tree to keep vermin from climbing it.

The tree was climbed again on December 3 by Mr. Blundell, when he found one chick apparently two or three days old and the other egg addled. With H.R.McK. I visited the nest on December 4. The tui left it very reluctantly, scolded me from a few feet away, flew into a gum tree at 15ft. and carried out a demonstration to lead me from the nest. She fluttered feebly about the outer branchlets of the gum tree with her feathers ruffled, but made only a few guttural squawks. She had done this with Mr. Blundell also. It was noted that some feathers were missing from her tail. Mr. Blundell reported that the chick had left the nest on December 15.

Mr. Blundell saw the bird again building on 5/11/1947 in another pine tree. He climbed the tree on January 18, and found the nest with one egg. She did not lay any more. I measured the height with H.R.McK. and found it to be 48ft. This nest, like the previous one, was lined with the scale of young punga leaves and the egg lay on a solitary piece of wool. On January 21 the bird was still sitting. She had now lost all of her tail feathers, no doubt owing to moult. On January 24 she was not sitting but returned to the tree before I left. On January 29 and 31 and February 3 she was absent, though it was noted on January 31 that the position of the egg had been changed. Apparently the nest had been deserted.

OCCURRENCE OF TREE MARTIN (**Hylochelidon nigricans**) IN WAIRARAPA.—An Australian species of swallow, a tree martin, was seen in this district in 1946. First noted by neighbours in May, I saw the bird on September 9 and 10. It was about the size of a sparrow, light fawn-grey in colour, with a black mantle, black head, black wings and black tip to the tail. The black may have been a steel blue but it appeared black to me. There was a light fawn-grey area almost right round the neck, also a small patch of the same colour on the forehead. The tail was slightly forked. When the bird was at rest the wings extended to the length of the tail or longer. The bill was like that of a fantail.—I. E. Barton, Whareroto, Featherston.

NOTES.

The eminent American ornithologist, Dr. Robert Cushman Murphy, is due to arrive in New Zealand early in November. He intends to visit the Snares with a party of New Zealand scientists.

BREEDING OF WHITE-EYE **(Zosterops lateralis).**—During the past season in my fruit garden in Leith Valley, Dunedin, four or five pairs of white-eyes have nested among the raspberry canes. The last nest found was as late as at least the third week in February. Four eggs were laid and during the incubation period one side of the nest began to sag. By the time the young were hatched, the nest was so perilously tilted that two of the young fell out and perished. The parents managed to rear the remaining two though the nest was tilted almost completely sideways by the time the young vacated it.—W. Davidson, Dunedin Naturalists' Field Club.

BREEDING HABITS OF BLACKBIRD.—Strange behaviour probably connected with shifts from original song-posts was seen among a garden population of blackbirds **(Turdus merula)** at Karori during September, 1946. Three young were found on September 22 in a karamu bush. On September 28 fierce fighting continued all day in the vicinity of this nest, and loud "tsup" notes were heard. Three male birds were observed, one of which was unmarked, and until its appearance threat displays were uncommon and no abnormal disturbance was seen. The brooding female rapidly became exhausted as her flight-line lay across a lawn beside a hedge in which a second nest was placed several metres from the original one. Birds fought in this hedge until noon on September 29 when two decapitated young were found and the second nest was deserted.—H. Secker, Wellington.

NOTES OF BLACKBIRD.—On August 20, 1946, at 7.45 a.m., a pair of blackbirds **(Turdus merula)** was seen flying swiftly round a hedge of ngaio trees; when the male ceased pursuit it uttered high-pitched clucking noises similar to those heard when birds are fighting. To my ear these notes are similar to those which are heard in sub-song, and a male which wished to roost in a small yew tree at 1745 on August 1, while making these noises seemed to be verging on sub-song. This type of call occurs also in the autumn from single birds, one record existing in my notes being for March 7, 1947.—H. Secker, Wellington.

BIRDS AT ARTHUR'S PASS, CANTERBURY.—On 10-11/11/1945 keas **(Nestor notabilis)** were apparently mating; groups of 3, 2 and 6 were flying about excitedly and chasing one another. Two black-backed gulls **(Larus dominicanus)** were circling over Avalanche Peak at over 6,000ft. A long-tailed cuckoo **(Eudynamis taitensis)** was seen at the edge of the bush line. Black-billed gulls **(Larus bulleri)** seen on river-beds of Bealey and Upper Waimakariri. On 24-25/11/45 three solitary keas were seen. A pair of paradise duck **(Tadorna variegata)** on Upper Bealey and many warblers **(Pseudogerygone igata)** seen and heard singing in the bush. Occasional chaffinches **(Fringilla coelebs)**, blackbirds **(Turdus merula)** and starlings **(Sturnus vulgaris)** seen in lower fringe of bush.—G. Guy, Christchurch.

NOTES.

PIGEON'S DEATH ON LITTLE BARRIER ISLAND.—On 5/7/1947 I picked up a sick pigeon **(Hemiphaga novaeseelandiae)** from the ground and brought it home. It seemed to recover after a couple of hours so I put it on the lawn where there is a growth of young clover and left it. Young clover leaves are one of staple foods of the pigeon on the island. Shortly afterwards I heard a cooing and on investigating found a trail of feathers right across the lawn to a clump of cannas. Another pigeon flew out from the cannas and I discovered the sick bird with a hole pecked in the top of its head. It died shortly afterwards. There was nothing else around that could have attacked the bird, and I am wondering what the reason was.—C. H. Parkin, Little Barrier Island.

FOOD OF SEA LEOPARD.—A sea leopard spent a night on the beach at Shag Rock, Sumner, on 3/11/1945. Its faeces were packed with the feathers of the white-flippered penguin **(Eudyptua albosignata).**

BLACK-BACKED GULLS ATTACKING PRION.—On 3/2/1946, at Sumner, Christchurch, when a stiff easterly was blowing, at about 8 p.m., I saw a solitary prion **(Pachyptila spp.)** fly suddenly into a group of black-backed gulls **(Larus dominicanus)** hovering about 300 feet over the sea and just off the cliffs. After a chase of over a minute, during which the gulls surrounded the prion, one gull seized the prion in its beak and immediately flew down to the sea with its prey.—G. Guy, Christchurch.

NEW MEMBERS.

Anniss, Miss Y. P., c/o Post Office, The Mount, Tauranga.
Burden, P. M., Te Awanga, R.D., Napier.
Coop, H. V., 9 Renfrew Avenue, Mt. Albert, Auckland.
Edwards, John, 61 Watling Street, Epsom, Auckland.
Fenton, Rev. R. J., Clevedon.
Howie, J. J., Box 65, Papakura.
Jackson, Miss J. S., Box 34, Oamaru.
Knight, Mrs. K. M., 29 Hillsborough Road, Mt. Roskill, Auckland S3.
Milner, F. G., District School, Whatitiri, R.D., Whangarei.
Mothes, Lieut.-Col. F. W., Whangarei Heads.
McKenzie, G. K., North Road, Clevedon.

CORPORATE BODIES.

Hakataramea School, South Canterbury.
Swannanoa School, Mid-Canterbury.

OVERSEAS MEMBER.

Douglas, Gordon, Edenside, Great Bookham, Surrey, England.

EXCHANGES.—Members are reminded that the society receives publications and reprints from many quarters, and that these are on loan (temporarily) from the secretary. The society subscribes to the "Emu," and other organisations on a regular exchange basis are:—American Museum of Natural History, New York, U.S.A.; Cleveland Museum of Natural History, Cleveland, U.S.A.; Edward Grey Institute (British Trust) Oxford, England; Museum of Comparative Zoology at Harvard College, Cambridge, U.S.A.; South Australian Ornithological Assn., (S.A. Ornithologist), Adelaide, S. Australia; Wilson Ornithological Club (Wilson Bulletin), U.S.A. Other publications gratefully received recently are from Mr. P. C. Bull (Breeding of Thrush and Blackbird); Dr. R. A. Falla (An undescribed form of the Black Petrel); Mr. E. G. Turbott (A Survey of Grey Duck Foods) and Ernst Mayr.

The Society has also benefited by the gift of two reams of duplicating paper from Dr. K. A. Wodzicki.

A VISIT TO LITTLE BARRIER ISLAND.

By R. B. Sibson, Auckland.

Through the courtesy of the Government Tourist Department, seven members of the King's College Bird Club spent a week on Little Barrier Island just before Christmas, 1946. The party consisted of J. P. Davey, M. R. Houghton, W. F. I. Hunt, W. N. Tucker, D. A. Urquhart, R. B. Sibson; and we were very pleased to have with us Mr H. R. McKenzie, who often in the past has been associated with our less ambitious trips. The weather throughout was kind. We arrived on December 16, and were able to get away to plan on December 23. During our week's stay the rainfall was only .06 of an inch; so that as the bush was dry bird watching was easy and comfortable.

The S.-W. sector, to which our activities were confined, differs in three important respects from the rest of the island: (a) in the possession of the only extensive area of open flat country on the island; (b) in the possession of the warden's house and garden, where the honeyeaters, kakas and even kiwis can and do find artificial feeding; (c) in the fact that much of it was once cleared and is now covered with second growth. During our stay the pohutukawas were in bloom and the sugar trough was not in use. As an experiment it was filled one day, but the interest shown in it by the birds was negligible. The garden, nevertheless, was alive with bellbirds, attracted by such introduced plants as arbutillon, sweet-pea, fuchsia, trumpet-flower, etc.

Two visits were made to the Thumb and Summit; and three of the party spent Midsummer Eve near the Summit. The flat (Marae-roa) and the adjacent bush, particularly the gullies, were explored with some thoroughness, the stream beds being used for access. On the flat and along the coast we looked in vain for pipits **(Anthus novaeseelandiae)**; nor could we find goldfinch **(Carduelis carduelis)**, greenfinch **(Chloris chloris)** or yellowhammer **(Emberiza citrinella)** which evidently are only visitors or irregular breeders. According to Mr. and Mrs. Parkin, brown quail **(Synoicus ypsilophorus)** had again appeared on the flat in November, 1946, when they were seen and heard several times, but they did not stay. In the spring Mr. Parkin had found the emaciated body of a white-backed magpie. It seems that when it reached the island it was so exhausted that it quickly succumbed. The latest addition (February, 1947) to the island's list of birds is a pied stilt **(Himantopus himantopus)** which was seen sitting with gulls on Te Titoki Point by Mr. Parkin.

Whilst we were on Little Barrier, thousands of petrels and shearwaters of at least four species were visible every day off the south and west coasts; Te Titoki Point being an excellent observation post. No such concentration was noted by the Museum party when they visited the island during October, 1945.

From Mr. and Mrs. Parkin we received every kindness. Not only did they make us warmly welcome, but their knowledge of the island and the birds was unreservedly put at our disposal; and such success as attended our searches is largely theirs.

In writing this paper the notes made by Mr. McKenzie have been invaluable, and I am especially indebted to him for his helpful criticism.

Kiwi **(Apteryx australis)**.—These were heard calling at night near the flat and the east paddock, and on the night of December 20, one was heard not far below the Summit. On two evenings an immature bird with bill about 4 inches long and plumage typical of the North Island race was caught. Tunnels bored into thick grass and pohuehue **(Muehlenbeckia complexa)** may be the work of kiwis. On one occasion the bird caught was hiding in one of these holes.

Little blue penguin **(Eudyptula minor)**.—A few were seen on the crossing. All round the flat the melancholy—to human ears—noise of their coming ashore was a daily occurrence at dusk. Nests were found in a variety of situations, both natural and artificial. One was about 10 feet above a creek bed in a hollow pohutukawa that grew out at an angle from the bank; others were under the old pig-sty, the cowshed, the woodstore and the homestead kitchen. Some nests were hundreds of yards inland and a considerable height above sea level, the birds commonly using the creek-beds as thoroughfares. The nests mostly contained downy young, just feathering. There were many addled eggs.

White-faced storm petrel **(Pelagodroma marina)**.—On December 16, a day of light northerly airs, c. 100 were seen during the crossing, most of them being within the last three miles. From the island itself none was noted on subsequent days.

Giant petrel **(Macronectes giganteus)**.—Two appeared during the crossing.

Flesh-footed shearwater **(Puffinus carneipes)**.—These were visible every day off the south coast. The numbers often ran into hundreds, but they were not as plentiful as **P. bulleri** and **P. gavia**.

Buller's shearwater **(Puffinus bulleri)**.—These could be seen every day off the south coast, and it was noted that they came close inshore more often than the other petrels. Long lines of them were often sitting on the water.

Fluttering shearwater **(Puffinus gavia)**.—Their numbers must have run into some thousands. They generally kept rather further out than **P. carneipes and P. bulleri.** We found no evidence that they breed on Little Barrier, although Reischek (1886) and Falla (1934) state that they do. A single desiccated body was found on the boulder bank.

Black petrel **(Procellaria parkinsoni)**.—None could be identified at sea. With its light-coloured bill this species would be hard to distinguish from **P. carneipes** at a distance. On Midsummer Eve it was observed on the Summit by Hunt, Sibson and Urquhart. The sun set behind a wall of black cloud, above which the sky glowed pale yellow and green. Later the stars shone brightly from a cloudless sky. There was no moon. The first black petrel was seen at 8.26 p.m. and in the next half-hour more than fifty circled the Summit like great black bats. Most of them seemed to come in from the north and to use the Summit to get their bearings. Some flew round it two or three times, and we could see that they were capable of slow, almost hovering, flight. When the first bird appeared, it was still sufficiently light for us to see it lower its feet before dropping silently down into the bush. The most remarkable thing about the incoming birds was their silence. There was not a single

note or call which we could certainly ascribe to them, although we watched many flying within a few yards of us. In this connection it is interesting to note that Falla, writing of a new form of the black petrel recently discovered in Westland (Rec. Cant. Mus., Vol. 5, No. 2) says "Their calls in the air were subdued and included a metallic rattling sequence."

We next spent about an hour along the ridge track below the Summit, but heard neither the thud of birds landing nor the scurry of birds making for their burrows. From several directions, however, there came a staccato, rapidly-reiterated, angry-sounding "Clack, clack, clack, clack, clack," and twice we traced it to its origin, a black petrel sitting at the entrance of its burrow. We gained the impression that the birds which were making these insistent calls were impatiently waiting for their mates to come and take their turn of duty. Murphy (Oceanic Birds of South America, p. 642) discussing a closely related species, the white-chinned petrel **(P. aequinoctialis)**, mentions its "shrill chattering" and adds, "During the active courtship season, in November, the peculiarly penetrating cries of the shoemaker (white-chinned petrel) make the night air ring, and sound at a distance like a chorus of frogs." How far the night air was ringing with the cries of black petrels we could not tell, owing to the babel of noises uttered by the multitudinous Cook's petrels, which share their nesting ground and far outnumber them.

At 10.30 p.m. we returned to the Summit, when it was still possible to see the dim shapes of black petrels in the air. We were particularly anxious to ascertain the origin of a call which we had repeatedly heard high over the homestead and which could now be heard over the Summit. It sounds like a burst of distant heavy machine-gun fire, a "borrr," with quite well-rolled "r's", and on the flat it usually came some time after the first typical cries of Cook's petrel were heard. Oliver says that the black petrel's cry is a "whistling note which has been likened to a combination of a soft whistle and a deep whirr." If this whirring "borrr" was the cry mentioned by Oliver, the implication was that many black petrels flew in to the heights of the island from the south. As it turned out, we were unable to prove anything. We could never definitely connect this call with the black petrel; for whenever we heard it at all near, all we could see in the air above us were Cook's petrels, their under surface gleaming white in the light of our torches. Yet Major Buddle and Messrs. Turbott and Bull, who visited Little Barrier in October, 1945, cannot remember hearing any such call uttered by Cook's petrels. Its origin, therefore, remains a problem for future solution.

No burrows of black petrels were opened by us. Most of them run back from cavernous holes which have been made by the tunnelling of generations of petrels. The excavated soil has slipped away and the roof is held together by a tangle of partly exposed roots. By day no sound was heard coming from the burrows.

On The Thumb, the old remains of two black petrels were found. One had certainly been eaten if not killed by a cat.

Grey-faced petrel **(Pterodroma macroptera)**.—This species seems to suffer badly from the cats. Skeletonic remains were found at the inland

cliffs along the flat, and on December 22 Houghton discovered at Parihakoakoa Pa a young bird, partially eaten by a cat, which had evidently been disturbed at its meal. The head was perfectly feathered, but a little down still remained on the stomach. The cat must have caught it as it was preparing to take to the sea. Falla (B.A.N.Z.A.R.E. Reports, Vol. 11, p. 180) has a picture of a young grey-faced petrel that flew on board the Discovery 30 miles from Kerguelen, and had much more down adhering to it than this bird.

At dusk on December 17, a silent, large, dark petrel, flying high and direct, passed inland over the homestead. It was either of this species or else a black petrel. No grey-faced petrels were seen at sea.

Cook's petrel **(Pterodroma cookii)**.—On the latter part of the crossing many were seen. The sea was calm and some were sitting on the water, riding high and looking, for petrels, rather long in the neck. Every day these gadfly petrels were visible off the south coast of the island, sometimes close inshore with white-fronted terns and shearwaters, particularly **P. bulleri**, at Te Titoki Point.

Towards dusk many could be seen gathering off the coast, and about 8.10 p.m. the first calls of birds flying inland were heard on the flat. These were timed on six evenings:—December 17, 8.9 p.m.; 18, 8.13 p.m.; 19, 8.13 p.m.; 20, 8.15 p.m. (8.6 at Summit); 21, 8.11 p.m.; 22, 8.10 p.m. Individual birds could be watched gaining height before leaving the sea. Very often pairs of birds indulging in what looked like courtship, chasing and calling noisily, would dart along the coast, zig-zagging even between the tops of the pohutukawas. Similar behaviour by Pycroft's petrel has been described by Fleming (Emu, Vol. XLI, p. 78). At the Summit, Hunt, Sibson and Urquhart had excellent views of Cook's petrels flying over their breeding ground. While it was still light, a single bird coming in from the north swept over the Summit with what seemed the speed of an alpine swift and plunged straight into the bush hundreds of feet below. Two birds, the one close on the tail of the other, gave an exhibition of flying that was pretty to watch. The leading bird darted upwards and then down in a sweeping circle, with the other never more than a few feet behind. This kind of flying was very different from the leisurely, butterfly-like drifting that we had witnessed in the light airs at sea on the day of the crossing.

Both along the coast and at the Summit, it was noted that two distinct cries came from pairs of birds flying together; one an excited "whik-kek-kek-kek," the other resembling the bleating of a lamb or goat. To judge by the pandemonium which was let loose around the Summit, many thousands of Cook's petrels must nest on the heights of Little Barrier. As the clamour increased with the arrival of more and more birds from the sea, so did the purring undertone which issued from the burrows on every side. On the night of December 20-21, the calls began at 8.6 p.m.; hundreds of birds were still calling at 3.30 a.m.; then they faded quite suddenly and the last was heard about 3.48 a.m. After 7½ hours' din, the silence which settled upon the Summit seemed unnatural. It was first broken by the screech of a long-tailed cuckoo.

Burrows were plentiful along the Thumb and Summit tracks. Some were new and quite clearly were still being enlarged at night. It was

suggested that these might be "cock-nests," or else the work of non-breeding juveniles. No burrows were deliberately opened, so that nothing was learnt about the state of incubation. When the roof of one burrow on the track collapsed, an adult with neither egg nor chick was found inside. It uttered a purring note and pecked strongly. Reischek says that males sometimes spend the day in a burrow near the sitting female.

Some scores of dead Cook's petrels, with the lower part of the breast-bone chewed away and the back of the skull bitten off, bore witness to the presence of hungry cats. In a petrel colony of such a size as this on Little Barrier, there would be many casualties from natural causes, more especially at the end of the breeding season when young birds would be leaving the burrows and essaying the flight to the sea. Many of the skeletons undoubtedly dated from the previous nesting season. But some were freshly killed. At the beginning of a nesting season, when many birds are searching for soft ground suitable for burrowing, or while they are doing the actual excavation, they would fall easy victims. Among the many dead Cook's petrels we examined were three which, when they died, each contained an egg ready, or almost ready, for laying. In two, large pieces of egg-shell remained, while from the third we removed a cracked, but entire, eggshell. Wing measurements of these three females were 235, 240 and 244mm. Measurements of Cook's petrels given by Fleming (Emu, Vol. XLI, p. 76) seem to show that females are on the average larger than males.

Before we crossed to Little Barrier, two nights were spent on the mainland opposite at Leigh. Here, too, Cook's petrels were heard flying inland after dusk. There may be a colony on Tamahuhu (v. Fleming, Bull. O.S.N.Z., Vol. 1, No. 6).

Pied shag **(Phalacrocorax varius)**.—21 unoccupied nests were counted at the south-western colony. All young had reached the flying stage, although a few were still being fed by their parents. The nesting trees were being used mainly for roosting. By day shags often took a short cut from the colony high over the flat to fish off the west coast.

Gannet **(Morus serrator)**.—Every day odd birds could be seen along the south coast.

White-fronted tern **(Sterna striata)**.—Varying numbers were seen every day, feeding offshore with petrels and shearwaters. A few sometimes rested on Te Titoki Point.

Black-backed gull **(Larus dominicanus)**.—Only three or four pairs and odd juveniles were present between Awaroa Point and the Pinnacles, where a nest was seen.

Red-billed gull **(Larus novaehollandiae)**.—The size of the flocks fishing offshore varied from day to day. Sometimes there were many hundreds.

Arctic skua **(Stercorarius parasiticus)**.—About two miles out from Leigh one was harrying a big flock of white-fronted terns.

Banded rail **(Hypotaenidia philippensis)**.—On December 12, Mr. Parkin watched one at a distance of six feet. On December 17 one was heard by Mr. McKenzie at 3.10 a.m. among cutty-grass at the dry mouth of Waikohare.

Pigeon **(Hemiphaga novaeseelandiae).**—The status of this bird was hard to assess. It did not appear to be abundant. There were always some about the flat, once 11 together. Very few were noted in the gullies and none on the high ridges. Mr. McKenzie, judging from his experience in mainland bush, thinks that some would be in the big valleys, feeding on tawa and breeding.

Harrier **(Circus approximans).**—Single birds were seen several times and once two together at Awaroa.

Morepork **(Ninox novaeseelandiae).**—To judge by the number of calls heard, this species is no commoner than on the mainland. One disturbed by day from a high creek-bank was set upon by a dozen bellbirds and a tui, which chased it back under the bank. At the foot of the old sea cliffs, when a young morepork fluttered out of a rotten tree, a cock bellbird scolded most persistently. Remains found in the nest were: Two black (Maori) rats; 1 whitehead, freshly killed; 1 bellbird; 1 slightly larger bird, unidentified; and 1 large weta **(Deinacrida heteracantha).**

Kaka **(Nestor meridionalis).**—These were surprisingly abundant and well distributed. Three or four were usually present in pohutukawas near the homestead; and others were noted at intervals on the high ridges and about the Summit. A feature of the evenings was the noisy flocking of 8-12 kakas, which would fly from the flat high over the ridges and sometimes out to sea and back. The flights would begin with three or four birds and others would quickly join them, while some stayed behind, raucously calling in the bush.

Old puriris, believed to contain nests if the persistent execrations of a bird in the branches overhead meant anything, were found near the shag track and at Awaroa. A pair obviously had a nest somewhere in Waikohare Gully. Mr. McKenzie twice observed two closely associated, drab-looking young birds, probably of the previous season, and writes, "I once saw these two nibbling each other's faces, evidently in a demonstration of affection. They seemed to feed on kanuka bark, nibbling at the branchlets some inches back from the tips."

Red-fronted parrakeet **(Cyanoramphus novaeseelandiae).**— These were very numerous on the flat and up the gullies, where old puriris and pohutukawas offered a wide choice of nesting holes. Though rather scarce on the high ridges, they were noted near the Summit. They evidently have an extended nesting season, for while some young were flying, in some nests eggs were still being laid, e.g., a nest in a puriri on the flat contained two eggs on 18th December and four on the 20th; and a nest in Tirikakawa Gully had two eggs on December 19 and three on 21st. Mr. McKenzie watched a young bird being fed by its parent, which regurgitated six times. Davy surprised what was evidently a family party of six bathing in a pool in the bed of Waikohare. Along the coast they were observed feeding on pohuehue. (Twice parrakeets were seen which may have been yellow-fronted **(C. auriceps)** but none was identified for certain.)

Shining cuckoo **(Chalcites lucidus).**—Heard only in three places: (a) Persistently near the homestead, (b) once at Waipawa Creek, (c) once near Shag Track. None was noted on two visits to the Thumb

and Summit; nor did we see any 'koreros' such as take place in the evenings at this season in the bush, e.g., around Clevedon, where shining cuckoos are very plentiful. This scarcity of shining cuckoos is certainly to be correlated with the pronouncedly meagre population of grey warblers.

Long-tailed cuckoo **(Eudynamis taitensis)**.—Numerous. One was seen flying along the coast. There were many in the bush, especially up the Thumb Track. Near the Summit one was being chased by a tui. Mr. McKenzie believes that deserted nests of thrush and fantail with one broken egg in each clutch had been visited by long-tailed cuckoos. No young were seen.

Kingfisher **(Halcyon sanctus)**.—Probably three or four pairs between Parihakoakoa and Awaroa Point. A pair had a nest at about 1000 feet in a rotten tree among the kauris on the Thumb Track.

Rifleman **(Acanthisitta chloris)**.—On December 18, Urquhart found a party of six or seven in Waikohare Gully, where they were subsequently seen on several occasions by various observers, but never so many together. None was seen along the track on two visits to the Summit.

Grey warbler **(Pseudogerygone igata)**.—These were thinly distributed in the lower country and only one was seen above 1000 feet. Competition with a dense population of native passerines may be the reason for their scarcity compared with their abundance in mainland bush, e.g., Clevedon or Waitakeres, where such competition is lacking. Their singing was feeble and sporadic. Mr. McKenzie watched a pair feeding a youngster. Two old nests were found, one at 7 feet on a mingi-mingi **(Leucopogon fasciculatus)**, the other at 28 feet in a kanuka on the flat.

White-breasted tit **(Petroica macrocephala toitoi)**.—It was easy to find these in all the gullies; they were noted at intervals on the Thumb and Summit tracks and were present just below the Thumb. Curiosity generally made the male conspicuous, but few females were seen. No nests were found. Mr. McKenzie heard the calls of young in Waipawa Gully. He also watched a male standing in a pool, drinking and bathing vigorously.

Robin **(Miro australis)**.—We had been led to believe that the robin was scarce and elusive, but at the end of our stay we were able to record them as present in all the gullies that we explored with any thoroughness. Usually only one bird was seen at a time, which suggests that the rearing of most first broods was finished, and the juveniles had been left to fend for themselves. The juveniles were quite silent, but on two days in Waipawa Gully Mr. McKenzie and others listened to a female singing at a distance of a few feet. The song had something of the canary and song thrush about it. We found them distributed as follows: Waipawa, 1 male and 2 females; Grafton, 1; Waikohare, 2 juv.; Tirikakawa, 1 male and 1 juv.; Awaroa, 1 male and 1 juv. or female. In the high country a single bird was seen just below the Thumb ridge.

Fantail **(Rhipidura fuliginosa)**.—These were evenly distributed, but scarcely abundant, though they seem at home in all types of country, and were present on the Summit. By the dairy two were seen having a violent quarrel with a bellbird.

Whitehead **(Mohoua ochrocephala albicilla).**—Perhaps the commonest passerine on the island. They were present in all types of country from the kanukas on the flat and the spray-washed pisonias near Awaroa to the Summit scrub, and were seldom out of sight or hearing along the ridge tracks. Many were in family parties, and in the garden we were able to watch the feeding of young which had just left the nest. At Tirikakawa a nest with two eggs was found. It was 12 feet up in a clean young mapou **(Suttonia australis).** Other nests believed to be of this species were seen in the kanuka tops from 30 to 60 feet high. Whiteheads are notorious for the variety of their songs and call-notes. Turbott mentions a "common song very like that of a chaffinch, but without the final rattle." This was heard frequently; and we also noted a song not unlike the opening phrase of a lark's singing. Among their many call-notes is a hard single zit, which could be mistaken for the typical note of the stitchbird. Not once did we see whiteheads having anything to do with long-tailed cuckoos or vice versa.

Silvereye **(Zosterops lateralis).**—These were remarkably scarce. An elusive four or five frequented the garden; and Houghton once saw about a dozen together on the flat. They were not heard singing.

Tui **(Prosthemadera novaeseelandiae).**—Large numbers were concentrated below the 200ft. line, where the pohutukawas were in bloom. In the high country and the Summit Ridge they were thinly distributed. Tuis could be seen flying between the higher forests and the pohutukawa zone, as they came to get the nectar and returned. Some young birds of the season were on the wing. At least six nests were found, of which some details are given: (a) With three eggs. The nest was placed among reversionary growth and **Polypodium diversifolium** on the trunk of a pohutukawa deep in the bush and much frequented by all three honeyeaters. While climbing to the top of the tree in an attempt to photograph stitchbirds, Urquhart actually touched the sitting tui. (b) With one egg; 30ft. up in a mahoe at the foot of the old sea-cliffs. (c) Easily accessible to vermin; 10ft. up in a mahoe, not far from (b). The remains of a tui were underneath and the nest contained broken eggshells. (d) Unfinished? 10ft. up in a young **Mida salicifolia.** (e) 50ft. up in a kanuka; (f) 30ft. up in a kanuka. A tui was seen to join some bellbirds mobbing a morepork. Another near the Summit pursued a long-tailed cuckoo for some hundreds of yards.

Bellbird **(Anthornis melanura).**—This vies with the whitehead for the title of being the commonest bird on the island. On the high ridges it was noted that as a result of feeding on the yellow flax **(Phormium colensoi)** the bellbirds had orange foreheads. Young birds were plentiful, and many of them were learning to sing in the vicinity of the homestead, where we had excellent opportunities for observing them. Their singing was very like a blackbird's tuning-up at the beginning of the season, though with rather less volume, but more sweetness. With regard to the typical dawn chorus, Mr. McKenzie remarks, "This was missing completely. I was up before dawn on several mornings to listen for it. I have heard it in the Rotorua, Bay of Plenty and National Park areas up to November 14, and on and after January 21, but have not been there between those dates to see whether there is a cessation for a few weeks. I expect that the Little Barrier birds will begin it again in January." No occupied nests were found.

Stitchbird **(Notiomystis cincta)**.—It is satisfactory to be able to report that this is a flourishing species, well able to look after itself on Little Barrier. The number we saw and the ease with which we located them probably indicate a considerable increase since the Maori occupation of the island ceased, for the stitchbird was evidently rare there before Reischek's visits. In 1880, according to Buller, "the indefatigable collector remained on Little Barrier three weeks without any sign of it." In 1882, "after five weeks' continuous search, traversing every part of this rugged island and climbing over ranges some 2000 feet above the level of the sea, he was at length rewarded by the sight of a **Pogonornis.**" Again, in 1884, twelve days elapsed before Reischek found one. If they were scarce before Reischek's visits, they were certainly scarcer after, for Buller tells how whole families "fell an easy prey to this insatiable collector."

Guthrie-Smith, who spent ten weeks on the island in 1919, saw stitchbirds on his first day, and eventually found five nests. (*Bird Life* on Island and Shore, pp. 35-62.)

During our stay we found these birds both on the ridges and also in several gullies, sometimes only a few feet above sea-level.

Distribution:—

Ridges.—(a) December 17: Jumble of loose boulders below Thumb. A fine male and 3 juveniles. (See below for reason for believing not a female and 2 juv.). (b) December 20: Lower Thumb Track, c. 300ft. A male which sang well. Possibly one of the Waikohare birds. (c) December 20: Below Thumb. A male in worn plumage. (d) December 21: Below Summit. c. 1800ft. 1 juv. showing yellow at the gape and persistently calling.

Gullies.—(e) Waipawa: Certainly a scattered family here. Three of the party saw a male, and juveniles were noted on several occasions. On the steep slope of the pa, a bird believed to be a juv. male—it showed yellow at the gape—and not a female, was heard to warble softly. (f) Tirikakawa: Two distinct males were seen, one on December 19, in worn plumage, the other on December 22 in bright plumage. At the mouth of this creek the attraction was a profusely flowering pohutukawa, but the first bird also seemed to be feeding on kawa-kawa **(Macropiper)**. What may have been two old nests of stitchbirds were found in holes, both facing south, in two old puriris. One nest was at a height of about 35 feet, the other at about 20 feet. Both nests were deep, one being at least eight inches. It had the appearance of having been added to year by year, the different platforms consisting mainly of tree fern scales, as described by Guthrie-Smith. (g) Awaroa: This gully was only visited once. No stitchbirds were seen; but a nest similar to the two in Tirikakawa Gully, was visible, c. 40ft. up in a puriri. (h) Waikohare: In this gully stitchbirds were found on December 18 and on subsequent days were continually under observation by one or other members of the party. The first birds located were clearly a family party, consisting of both parents and at least three juveniles, all visiting a group of flowering pohutukawas, which were much frequented also by bellbirds, tuis and kakas. The young seemed to be feeding independently, but on another day a female was seen to feed a youngster which showed yellow at the gape; and another female, a smaller and very neat bird, whose

"tzit" constantly came from a new direction, was suspected of having a nest. Subsequently, when Houghton was climbing an old puriri, a female became very agitated and aggressive. The homstead is situated at the seaward end of this gully. Mrs. Parkin saw a male stitchbird in the garden on December 19, and a different one on the 21st. The latter bird sang.

The stitchbird has at least two distinct songs, as well as a variety of notes and calls. Close attention was paid to these, and, whenever possible, syllabification was determined by a consensus of opinion.

Songs.—Buller states that the male bird "utters at short intervals and with startling energy a melodious whistling call of three notes." Only once, or possibly twice, did we hear what was evidently this vigorous song. It began with the typical tzit, and went to tsiu, tsiu, tsiu. It ended quite abruptly and was not repeated.

In October Guthrie-Smith heard a low continuous warble which he believed was a courtship song, but other warblings that he heard seemed to be soliloquies. On December 19 I heard a soft melodious warbling from a solitary male in worn plumage at Tirikakawa. It seemed to me to be a typical sub-song, of the soliloquy type, such as blackbirds, thrushes and silvereyes sing at the end of the nesting season, and sometimes as a prelude to the renewal of full song, after the autumn or rather late summer moult. A similar warbling was also heard coming from a female or more probably a juvenile male in Waipawa Gully.

Call-notes.—According to Buller, the male and the female produce a sharp clicking which has a "fanciful resemblance to the word 'stitch.'" This is Guthrie-Smith's "resonant ypstt." To us it sounded like an explosive "tzit." We heard it both from males and females, but not from juveniles. A male in worn plumage uttered a single much softer "tseet"; and Mr. McKenzie and party watched another male listening through the trees and giving a two-note call like part of the exuberant bubble-song of the bellbird. On another occasion he was watching a rather secretive and agitated female and he believes that besides the typical tzit she also made another call like the alarm call of a bellbird—pek, pek, pek, pek. This must be the "different note sounding like toc, toc, toc, repeated several times" which Reischek says the female has.

The call of the juvenile among the trees is a persistent sit, sit, sit. It is probably a feeding call. On our first day we had excellent views of three juveniles, as they uttered it, along the Thumb Track, and from then on we recognised it as a guide to tracking down stitchbirds. Guthrie-Smith heard it on three occasions in October from birds which were sucking the nectar from the flowers of the **Alseuosmia.** He called it "stit, stit, stit," and thought it a travel call. He notes that some of these birds showed a "thin yellow line about the mouth" which we believe a field characteristic typical of the juveniles. He confesses himself puzzled by these birds. The solution to his problem may be that some stitchbirds nest in September or earlier and get their young away by October.

INTRODUCED BIRDS.

Chaffinch **(Fringilla coelebs).**—Probably 10-12 pairs in the vicinity of the flat and a pair was present at the mouth of Tirikakawa. None

was seen on the ridges and the species does not seem to have penetrated into the bush as elsewhere in New Zealand. Males were in full song. A nest was found on the leaf of a nikau.

Sparrow **(Passer domesticus)**.—Perhaps 30-40 about the homestead. Some were nesting in the tall kanuka trees.

Thrush **(Turdus ericetorum)**.—Found commonly on the flat and a little way into the bush. A nest in the top of a silver tree-fern in Waipawa Gully contained four eggs. Through lack of mud, the nest was lined with a sort of papier-mache of rotten wood mixed with saliva. I have seen a similar nest at c. 700ft. on Rangitoto. Mr. McKenzie found another nest with one broken and two whole eggs, and believes a long-tailed cuckoo was responsible. Away from the flat the only thrush seen was at Tirikakawa. On three occasions thrushes were seen sipping the nectar in pohutukawa flowers just like honey-eaters. No song was heard.

Blackbird **(Turdus merula)**.—Fairly frequent about the flat, where some males were still singing; and noted also at Tirikakawa and Awaroa.

Hedge sparrow **(Prunella modularis)**.—Perhaps four pairs on the flat; but not noted elsewhere. Males were heard singing near Te Titoki Point, in the garden, and the east paddock; and a bird was carrying food near the inland cliffs.

Starling **(Sturnus vulgaris)**.—Flocking had begun, c. 24 being greatest number seen together. Birds were often seen around the sea-cliffs. Does not appear to have spread far inland.

Skylark **(Alauda arvensis)**.—On December 16 four were seen flying along the boulder bank, but after that none was seen or heard by day, though a careful watch was kept. Odd birds were twice flushed on the flat after dark.

White-backed magpie **(Gymnorhina hypoleuca)**. — Earlier in the spring Mr. Parkin found the remains of one. It had evidently reached the island in a weakened condition and had succumbed to hawk or cat.

[Readers should refer to an article by Mr. E. G. Turbott on the Birds of Little Barrier Island (N.Z. Bird Notes, Vol. 2, p. 93) for list of literature relating to the island. The correct scale of the map of the island published with Mr. Turbott's article is 1¼ miles to an inch.]

BIRD LIFE IN DART AND ROUTEBURN VALLEYS.

By *Dunedin Naturalists' Field Club.*

From January 13 to 22, 1947, a party of about 20 members of the Dunedin Naturalists' Field Club spent nine days at the Routeburn Lodge, near the junction of the Routeburn and the Dart rivers, and from their observations the following report has been prepared. There are more or less open river flats along the course of the Dart, occasional open grassy glades in the Routeburn Valley and beech forest in the area under review.

It is about ten miles from Kinloch, at the head of Lake Wakatipu, to the Routeburn Lodge, and observation of the first seven miles of the Dart River flats was made only from a bus going and coming, so consequently was very limited. For several miles in the vicinity of the Lodge one of the streams of the Dart ran swiftly and deeply against the southern bank, preventing any visit being made to the shingle beds

Plate III.

Toanui attempting to rise off the ground, Little Barrier, 11/2/1906. (Photo. and caption copied from G. A. Buddle's album.)

BLACK PETREL ON LITTLE BARRIER ISLAND.

Plate IV.

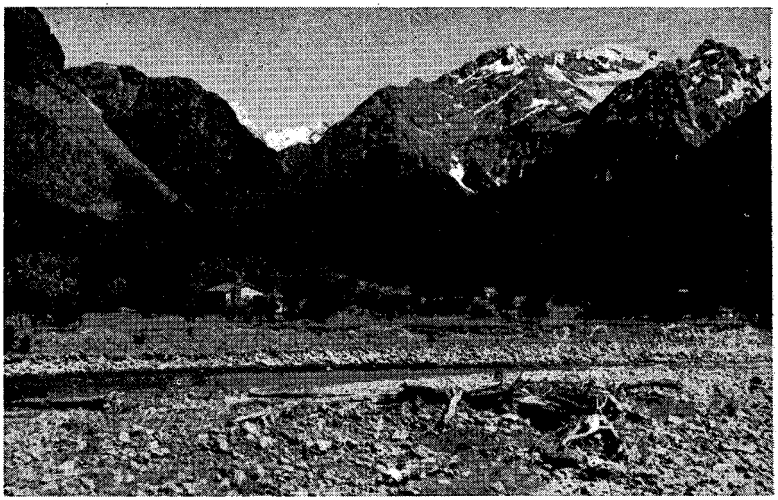

Photo. H. S. Tily.

Routeburn River in foreground, where black-fronted terns patrolled daily. Routeburn Lodge in middle distance, behind which is Routeburn Valley, beech clad on lower slopes, where native forest bird life was most abundant.

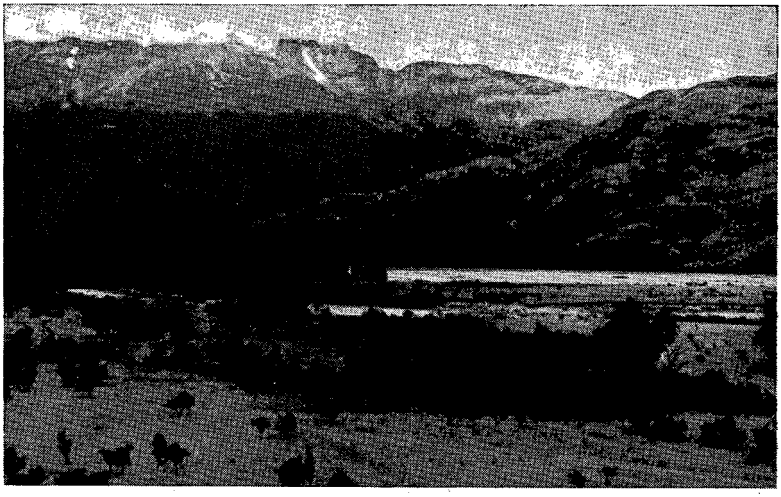

Photo. H. S. Tily.

Beech and matagouri-studded flat on which the Routeburn Lodge is situated near the junction of the Routeburn with the Dart. Mt. Earnslaw (left) and Mt. Alfred (right) in background. It was here when the shadows had fallen on the flats that hundreds of small gulls circled high above in the light of the setting sun, and where black-fronted terns were seen daily.

BIRDS IN DART AND ROUTEBURN VALLEYS.

and grassy islands between the various streams of the Dart, the bed of which in places is a mile or more in width. It was on the comparatively open pasture land on the south bank of the Dart, the cultivated land near the Routeburn Station homestead, and on the open grassy glades in the lower Routeburn Valley that most of the introduced birds were seen.

INTRODUCED BIRDS.

House sparrow **(Passer domesticus)** and starling **(Sturnus vulgaris)**: In numbers chiefly about the homestead area; on one occasion a flock of about 100 starlings was seen.

Hedge sparrow **(Prunella modularis)**: In small numbers. Occasional songs recorded.

Blackbird **(Turdus merula)** and thrush **(T. ericetorum)**: Fairly common, the latter appearing to be the more numerous.

Redpoll **(Carduelis cabaret)**: Very common, song flights being noted repeatedly daily on the flat near the Lodge.

Goldfinch **(Carduelis carduelis)** and greenfinch **(Chloris chloris)**: Heard and seen occasionally.

Yellowhammer **(Emberiza citrinella)**: Heard singing on the matagourie-studded pasture land between the Lodge and the homestead and in open glades in the lower Routeburn Valley, two or three being noted during walks in these areas.

Chaffinch **(Fringilla coelebs)**: Judging by the songs, very common, and heard and seen daily. On January 14 a nest containing four eggs was found in a young Pinus insignis about four feet from the ground. The chaffinch appeared to have penetrated much further up the Routeburn Valley than the other finches.

Little owl **(Athene noctua)**: Heard calling at night in the vicinity of the Lodge, the native morepork being heard at the same time in much the same locality.

NATIVE BIRDS ON THE RIVER FLATS.

At Kinloch, while waiting for the bus to take us to the Lodge, we were entertained by a flock of about 30 black billed gulls **(Larus bulleri)** and the following day we saw a flock of about 40 following a harrow which was drawn by a tractor. That evening at sunset a flock of about 200 or 300 small gulls circled high over the junction of the Routeburn and Dart, and if they were all black-billed their numbers in this area must be considerable.

A bird often seen with the black-billed gull was the black-fronted tern **(Chlidonias albistriata)** and there were ten among the flock of gulls following the harrow. Some of them were carrying grubs and worms towards the riverbed to an area which it was impossible to investigate. Along the stretch of the Routeburn near the Lodge, three to six were seen daily patrolling the river.

Four pairs of pied oystercatchers **(Haematopus finschi)** were seen, the first pair from the bus on our way to the Lodge, and another pair was with the gulls and terns in the field where the tractor was working. Black oystercatchers (see note, page 147) were also seen, two small flocks united giving a count of 28.

Two pairs of banded dotterel **(Charadrius bicinctus)** were recorded, and possibly there were others nesting on the inaccessible shingle flats between the streams of the Dart.

Grey ducks **(Anas poicilorhyncha)** were seen in small numbers, four young being recorded with their parents at Kinloch.

Paradise ducks **(Tadorna variegata)** were seen daily, usually in pairs. In three different localities females feigned injury when approached. Four small young ones were seen with their parents on the Dart River, and also a flight of seven full grown young. On January 22, from the Lodge to Kinloch, over 12 were counted, chiefly in pairs, male and female. Two blue ducks **(Hymenolaimus malacorhynchus)** weer seen at Sylvan Lake.

Only a few black-backed gulls **(Larus dominicanus)** were seen, and at a lagoon near Kinloch three or four pied stilts **(Himantopus himantopus)** and one pukeko **(Porphyrio poliocephalus)** were seen.

A solitary black shag **(Phalacrocorax carbo)** flew up and down the Routeburn, and a dead and headless one lay beside Sylvan Lake. A harrier **(Circus approximans)** circled daily over the flat at the Lodge, and between the Lodge and Kinloch three were counted on the day of our departure. These, with three pipits **(Anthus novaeseelandiae)** complete the record of the native birds of the more open spaces.

FOREST BIRDS.

No walk was taken through the beech forest without seeing at least a few riflemen **(Acanthisitta chloris)**. The largest number seen at any one time was eight. On one side of the road two parents were feeding three young, and on the other side another pair was feeding one young. One day when the party was sitting in the forest beside the Routeburn a pair of riflemen dropped from the beeches to the ground fighting. On the way to Lake Harris a few of the larger bush wrens **(Xenicus longipes)** were noted, and above the bush line one or two rock wrens **(X. gilviventris)**.

Only a few songs of the grey warbler **(Pseudogerygone igata)** were heard, but if time were taken to sit down and call, always one or two pairs appeared. Silver-eyes **(Zosterops lateralis)** were seen in small numbers only.

The yellow-breasted tit **(Petroica macrocephala)** was a common bird, numbers being seen daily and songs repeatedly heard, but the birds recorded were chiefly males. Possibly not more than half a dozen females were noted during the nine days. Around the Lodge two or three males were seen daily, singing and chasing, but a female was seen only once or twice.

Yellowheads **(Mohoua ochrocephala)** were frequently seen in small numbers of twos or threes to small flocks up to about 12, but one flock of about 20 appeared in response to calls. Of these many were young birds still being fed by their parents. One day a young bird able to make a very short flight fluttered across our track. Adults were seen to use their feet in a manner similar to the use of a hand—to put a caterpillar in the bill, to change the position of a caterpillar held in the bill, and to remove bark from a tree when searching for food. Usually parrakeets were noted where a flock of yellowheads was present.

The fantail **(Rhipidura fuliginosa)** was seen only in small numbers, probably not more than about a dozen altogether during the nine days. Of these, three were black, two of them being in company with a pied, and the third also being with a pied.

Several robins **(Miro australis)** were seen daily, often in pairs, two pairs being recorded near the Lodge on the evening of our arrival, and a pair was frequently at the back door for crumbs. On one occasion two adults were watched feeding a young one. When one parent lay down to sun bathe, spreading its wings and tail and turning from side to side, the young one lay down a few inches from and facing its parent and imitated its movements. The robins were very trusting, and on more than one occasion alighted on members of the party. One tried to pull a red thread out of a tweed skirt. During the day short trills of song were heard, but in the early morning a long trilling song.

The calls of the shining cuckoo **(Chalcites lucidus)** were heard at Sylvan Lake on January 19 and in the Routeburn Valley on January 21. The long-tailed cuckoo **(Eudynamis taitensis)** was heard much more often. On January 16 it was heard repeatedly near the Routeburn Huts, also during the night, and on the morning of January 17 in the forest above the huts where one was seen. One was also seen the previous day in the lower Routeburn.

Bellbirds **(Anthornis melanura)** were fairly common. Several songs differed from those heard about Dunedin, but one song heard at Purakanui (12 miles N.E. from Dunedin) but not at Dunedin, was heard at the Routeburn. Tuis **(Prosthemadera novaeseelandiae)** were seen in small numbers of about three to five in a day. One came to the back door for egg shells. One or two wood pigeons **(Hemiphaga novaeseelandiae)** were noted daily. Parrakeets were seen in flight in numbers up to five, but it was impossible to estimate the numbers among the beech trees. Usually the birds were too high for identification, but in the three or four different localities where the birds were low in the trees, all noted were yellow-fronted **(Cyanoramphus auriceps)**. Where seen in numbers, yellowheads were also present. At twilight the calls of kakas **(Nestor meridionalis)** were once heard from the forest but only one or two were seen in the Routeburn Valley. Morepork **(Ninox novaeseelandiae)** calls were heard at dusk near the Lodge. One morning parrakeets were making a great chattering in some beech trees, and presently out flew an owl chased by some small birds. Only a glimpse was caught of the owl, but it appeared to be the darker native bird. The calls of keas **(Nestor notabilis)** were heard from the Harris Saddle, but mist prevented the birds from being seen.

[The report of the black oystercatcher being seen in this inland locality was referred to Mrs. I. Tily, president of the Dunedin Naturalists' Field Club, for confirmation. Miss C. White, a club member, when shown illustrations of pied and black oystercatchers, instantly put her finger on the black one as the bird she had seen. She said that when standing the bird showed no white, but in flight a V-shaped white area was seen on the undersurface. Miss White says she has noted birds with similar markings at Waitati. If the bird showed white markings it could hardly be **unicolor**. Is it **reischeki**? If it is, this record is a considerable extension southward of its known range. Mrs. P. L. Moore, another club member, also reports birds which she took to be "hybrids."—Ed.]

REVIEWS.

Avian Evolution in New Zealand and Australia, by W. R. B. Oliver. The Emu, 45, pp. 55-77 and 119-152.

The present journal is not the place in which to review in detail a long technical paper dealing with the osteology, phylogeny and relationships of the various groups of birds, though its publication should not be allowed to pass without notice in these pages as a notable addition to the ornithological literature of Australasia. The argument appears to be based upon the idea of evolution by orthogenesis. In comparing birds of simple structure with those of complex structure it is found that the changes involved are increase in size, increase in ossification and the development of more prominent projecting portions of the skeleton. In this way an evolutionary scale for each character of the skeleton, such for example as the shape of the vomer, is arrived at and used as a basis for classification. This procedure may be objected to by taxonomists with different views on the nature of the evolutionary process. It is interesting to notice that Lowe's theory of the descent of the Ratite birds from a flightless cursorial ancestor is supported, though it has received adverse criticism from other authors, but his similar theory with respect to the penguins is rejected.—B.J.M.

Podgy, the Penguin, by L. E. Richdale, 23 Skibo Street, Kew, Dunedin. 16 pages, 7 illustrations. Price, 2/6.

For several years Mr. Richdale has been bringing out at intervals booklets on native birds illustrated by his excellent photographs. These are intended to provide accurate information for adult readers in an easily accessible form. He has now extended this project by bringing out his first bird book for children, and with his long experience in the schools he is well qualified to do so. It tells quite simply the story of a pair of yellow-eyed penguins from the winter season, through egg-laying, until the chicks enter the water. It is told in a way which will be interesting to children but in which the facts are correct even to the changes in weight of the birds and the periods each spends on shore at the nest. This information is woven into the story in a way which adds to its interest. Six of the pen and ink illustrations are drawn from photographs and show the birds in authentic attitudes. Penguins have been the subject of more distorted representation both in pictures and writing than probably any other familiar bird, and Mr. Richdale is to be congratulated for having given New Zealand children a true story of one of the most attractive of our native birds.—B.J.M.

Letters from Skokholm, by R. M. Lockley (J. M. Dent & Sons, London, 1947.)

This is a book that should get a good reception from New Zealand ornithologists. The intensive study of the living bird and of island communities by this writer are well known, and the happy results of his field work and the collaboration of many other British ornithologists have been some important advances in our accurate knowledge and understanding of bird behaviour. This book is based on letters written between September, 1939, and September, 1940, to a friend serving in the Army in Norway and subsequently a prisoner of war. It covers in essay form all Lockley's earlier researches on the gannets, shearwaters, and storm petrels along with admirable accounts of practically all the other birds of the island, the rest of the animals, and the weather. I must confess to having found "The Way to an Island" and some of his earlier books disappointing in patches, as if the author had been groping for a style. Not everybody would agree with that opinion, but all would agree that "Letters from Skokholm" is different. Its consistency of style combined with accuracy seem to me to make it his best popular book. Admirers of the art of C. F. Tunnicliffe will be delighted with a wealth of illustration, vignettes happy in design and subject which are something more than just another picture of a bird.—R.A.Falla.

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The Masterton Printing Co., Ltd., Lincoln Road, Masterton.