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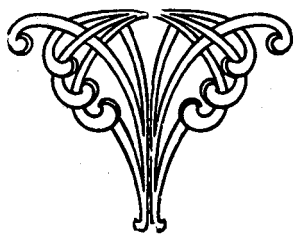
New Zealand Bird Notes



Bulletin of the Ornithological Society of New Zealand.
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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THE ANNUAL MEETING.

The annual general meeting of the Ornithological Society of New Zealand was held in the Dominion Museum, Wellington, on May 28, 1948, at 8 p.m. Dr. R. A. Falla presided over an attendance of about 30 members, the president (Professor B. J. Marples) having sent an apology for his absence.

The minutes of the last annual general meeting, held on May 23, 1947, were taken as read, having been published in "New Zealand Bird Notes," and confirmed.

As no other nominations had been received, the officers, as detailed above, were declared elected.

The committee's report and audited financial statement were read and approved. In reply to a question, the chairman stated that the committee had the matter of a new constitution in view for action at a favourable opportunity.

The annual report for the year, 1947-48, stated: Your committee is pleased to report that the society has continued to make progress

throughout the year, the net increase of members (after allowing for deaths, resignations, etc.) bringing the total from 340 to 370. As in past years, many members prefer to pay several years' subscriptions in advance, and we now have 20 life members. Volume 2 of New Zealand Bird Notes is now completed with eight issues totalling 200 pages, and supplement, and we were able this year to include illustrations on art paper. A number of members have asked that we issue larger numbers of Bird Notes containing more illustrations. Such illustrations, which undoubtedly enhance the bulletins, are, however, extremely costly, a group of four pages costing the equivalent of 16 pages of type. An examination of the income and expenditure account shows that after providing for sundry normal expenses, our current income allows for four issues of Bird Notes, each of 24 to 28 pages.

INCOME AND EXPENDITURE ACCOUNT for year Ended 31/3/1948

INCOME	£	s.	d.	EXPENDITURE	£	s.	d.
Subs., 1947, and Arrears	89	0	0	N.Z. Bird Notes—			
Donations	2	13	9	Vol. 2, Nos. 5 to 7	83	0	9
Sales (Back Numbers)	11	4	0	Reprint., Vol. 1, No. 1	5	5	0
Interest, P.O.S.B.	3	16	0	Envelopes	5	2	6
Sundry		8	11	Stationery	2	17	3
				Postages	5	14	6
				Subscription, R.A.O.U.	1	1	2
				Annual Meeting and Field Trip, 1947	2	17	6
				Excess of Income over Expenditure, transferred to General Reserve	1	4	0
	£107	2	8		£107	2	8

BALANCE SHEET as at 31st MARCH, 1948.

LIABILITIES.	£	s.	d.	ASSETS.	£	s.	d.
Subs. paid in Advance	105	10	0	Subs. in arrears, estimated to realise	2	0	0
Extra Copies Reserve	4	10	0	Stationery on Hand	5	15	6
General Reserve	113	17	4	Cash	5	0	0
				Bank of New Zealand	54	11	8
				P.O. Savings Bank	156	10	2
	£223	17	4		£223	17	4

Audited and found correct.—F. E. WELLS, 27/4/48.

(A more detailed audited statement of the accounts was presented to the annual general meeting and copies may be obtained on application.)

It is pleasing to note, the report continues, that donations amounting to £5 15s. to both the general fund and illustrations fund have been received, and it is hoped that members will respond similarly this year. New members have continued to require copies of the earlier issues of Bird Notes. Volume 1 (of 12 issues) is available at 15s., and Volume 2 at 10s. At the time an appeal was made for donations to a fund for sending food parcels through an American organisation to European ornithologists, it appeared that the forwarding of the money could be arranged. However, owing to currency restrictions, this has not been possible, and the money has been returned to the donors. The committee expresses its appreciation and thanks to Mr. F. E. Wells, A.R.A.N.Z., for kindly auditing the books of the secretary-treasurer. The latter reports that subscriptions for 1948 are coming in well, only about 130 not yet having been received. This prompt remittance is appreciated, as it saves a great deal of secretarial work in preparing further accounts.

The report of the Ringing Committee was read and approved. Dr. Falla gave some details of the steps being taken in the establishment of a ringing scheme.

The report of the Ringing Committee, May, 1948, presented by the convener (Mr. J. M. Cunningham) stated: During the year further inquiries have been made regarding sources of supply, and cost of rings, and it has been decided to launch a ringing scheme. It is hoped that the financing of this will be done through a grant, and application for this

has been made. It is not intended to ring all birds haphazardly, but to concentrate on such species as white-fronted tern, banded dotterel, ducks, gannets, etc. Details of administration and the method of keeping the records have been approved, and once the scheme is well under way it is planned that the Dominion Museum will handle the records. It is also proposed to publish a summary of ringing work to date, and all members who have ringed birds of any species are requested to inform the secretary at their earliest convenience. A synopsis of numbers ringed, with localities, dates (not necessarily of individual birds), is required to make this as complete as possible, together with records of retraps or outside records.

Mr. C. A. Fleming, in nominating Dr. Robert Cushman Murphy as an honorary member of the society, spoke of the valuable stimulus he had given to New Zealand ornithology during his recent visit to the country. Dr. Murphy was declared elected.

Following on a statement by the honorary editor that considerable material for publication was on hand, a discussion took place on possible methods of financing the publication of larger issues of "Bird Notes," as the present expenditure absorbed the whole current revenue. It was pointed out that the present high standard of "Bird Notes" was dependent to some extent on donations, and Mr. Fleming asked that greater publicity be given to the existence of the Publications and Illustration funds. Authority was given to make the next two numbers each of 36 pages, and the incoming committee was instructed to explore methods of increasing the annual revenue. It was suggested that members be asked, by means of a circular, for an expression of opinion regarding an increased subscription.

Dr. K. A. Wodzicki suggested that the practice of overseas societies be followed in the reading of ornithological papers at future annual general meetings.

Dr. Falla, leader of a recent expedition to the Snares Islands, gave an address on the expedition, illustrated by slides and films taken by members of the party.

Supper was served at the conclusion of the meeting.

The following day a field trip for members was held at the eastern bays of Wellington. After a walk along the coast, tea was provided by Mrs. Bird. The party then walked through the bush in Muritai Park, reassembling at Dr. Falla's residence, Day's Bay, for afternoon tea. Some interesting birds were observed and members had good views of riflemen and whiteheads.

The committee held a meeting during the day and it was decided to take steps to increase the current revenue. Members were reluctant to increase the subscription above 5s., but it was thought that the provision of an endowment membership class with a subscription of 10s might meet the position. This would give members the opportunity of showing in a practical form their appreciation of larger issues of "Bird Notes." As it would take some time to put into effect an endowment membership class, members were invited meantime to make donations to cover the increased cost of larger issues of "Bird Notes." A circular explaining this is enclosed in this issue.

VISITATION OF FANTAILS.—We had an extraordinary visitation of fantails **(Rhipidura fuliginosa)** on February 26, 1947, when some 40 or 50 of them spent the day in a clump of gum trees near our stable. The number given is fairly correct as two of my sons counted them twice over. There has been a great increase in fantails during the last two or three years.—E. C. Studholme, Waimate.

LITTLE BARRIER ISLAND BIRDS IN WINTER.

By H. R. McKenzie, Clevedon.

Accounts of the birds on Little Barrier Island have mostly been made in spring and summer. This is, of course, owing to the advantages of the breeding season and the better weather conditions. I therefore considered a winter record to be desirable, so, having obtained the necessary permission from the Tourist Department, made a visit from June 23 to June 30, 1947, with my friend Mr. J. W. St. Paul. The weather in June was rough indeed, and we were fortunate to make the passage to and from the island in moderate seas, only one day late each way. No landing can be made on the boulders of the shore in heavy weather, or even in fine weather when the wind is strong. Mr. Norman Warren runs the fortnightly launch and special trips, and his co-operation and kindly consideration for our comfort were much appreciated.

The birds seen during the crossing will be described under a separate heading so that they will not be confused with those seen on the island, or from its shores.

It is not considered necessary to set out a description of the general characteristics of the island. This has already been very well done recently by Hamilton ("The Little Barrier Island," 1937) and to a considerable extent from the ornithological viewpoint by Turbott (N.Z. Bird Notes, Vol. 2, No. 5, July, 1947, "Birds of Little Barrier Island"). It is fully realised that some of my conclusions will probably be corrected in the future, but it is hoped that the work done will be useful in aiding those making further investigations.

At the landing we were cordially received by Mr. and Mrs. C. H. Parkin. I had already come to know and appreciate their great hospitality and their ready help in bird work when I stayed there on the Island in December, 1946, as a member of Mr. R. B. Sibson's party. As guardians of this island sanctuary they are not only conscientious and efficient, but are keenly interested in the birds and very appreciative of the motives of visitors who wish to study and protect the rich avifauna of this ornithological oasis.

The short time available, the limited daylight of the winter days and the prospect of some wet weather made it necessary to plan and work methodically.. Mr. St. Paul, an expert bushman and keen and efficient bird observer, worked the rougher country. He made two trips to the Summit, observing the distribution of the birds according to height. He also diligently patrolled the flat and the steep faces and ridges at either end of it. Mr. and Mrs. Parkin noted all the birds they saw in the period and also gave us much valuable information from their diaries and their island knowledge.

I worked the nearby gullies and ridges and the flat, also watching the sea. Each evening, by a great log fire, all notes were pooled and written up. On the last evening a special effort was made to estimate as closely as possible the population numbers of each species of bird in the areas worked. I feel that this system was a distinct success.

For what value it may have, this report depends largely on the accounts of Mr. E. G. Turbott and Mr. R. B. Sibson of their visits of October, 1945, and December, 1946, respectively, for making seasonal comparisons. This help is gratefully acknowledged.

NATIVE BIRDS OF THE ISLAND.

Kiwi **(Apteryx australis)**.—Several calls were heard at night but very few in relation to the number of birds on the island. The borings and droppings were so plentiful everywhere that a large population was quite evident. Fresh signs were seen in every gully and on every ridge and track. Mr. St. Paul found borings in plenty up to 2,000 feet. It had been considered previously that the high country was too hard for them, the ground being so rocky, but it now appears that there could quite easily be a population covering the whole island. The fact that they have

not been heard on the outer side means little, few people ever having been there at night to hear their calls. In any case, I know that many birds can be present without any calls being heard at all. I consider that birds could now be taken from the island to stock selected areas elsewhere. No attempt was made to look for kiwis at night, but a very fine large bird was found in a hollow log about half a mile up the Summit track.

Little Blue Penguin **(Eudyptula minor).**—None was seen or heard on or near the island. They had been ashore in great numbers for the first three weeks of June when the weather was rough. It is their habit to flock ashore with great noise at the approach of heavy easterly weather. —(C.H.P.)

Black Petrel **(Procellaria parkinsoni).**—On June 25 and 28, Mr. St. Paul made trips to the Summit. He found two cat-eaten remains on the track between the Thumb and the Summit. Exploring a ridge leading south from near the Summit, he found several dozen burrows, none of which had been used for some time. Here, eaten remains of six more birds were found. These fragments were very greasy and oily, which may indicate that they were young birds. This should have been the case owing to the season. Two birds still smelled considerably. No heads could be found but the wings and bones left no doubt as to the identity of the dead birds. One pair of wings brought down measured 34 c.m. The feathers were complete and beautifully glossy as of a young bird. Fragments of an egg which had apparently hatched were found at the mouth of a burrow.

Grey-faced Petrel **(Pterodroma macroptera).**—The nesting area about Parihakoakoa Pa at the west end of the flat was explored by Mr. St. Paul. He found many burrows being used, and the characteristic strong musky smell at two burrows indicated sitting birds. On June 29, a bird newly eaten by a cat was found on the flat at the western end of the old sea-cliffs; wing 31 cm., bill 3.6. The plumage on the wings was perfect. On June 30, Mr. St. Paul found five cat-eaten remains about the top of the old sea-cliffs. One had only just been eaten. It had contained an egg which was broken and still wet on the inside. It is, therefore, evident that the wretched cats attack adult birds as they scramble to or from their burrows. They also take the young as they leave the nests in the summer. (Sibson, 1947.) This gives the species little chance and it must soon vanish from the island if the cat menace is not tackled on a large scale.

Sooty Shearwater or Muttonbird **(Puffinus griseus).**—Mr. Parkin picked up a dead bird on the shore on approximately 20/5/47, and he kept it pending our visit. It was practically fresh when found. The measurements were:—Length, 44; wing, 31; bill, 4.6; tarsus, 5.2; tail, 10. The silver-white area under the wings was of maximum size for the species and it had been a fine specimen in life.

Fluttering Shearwater **(Puffinus gavia).**—On three occasions these were seen off shore, once in hundreds, but they were not seen at all at other times.

Cook's Petrel **(Pterodroma cookii).**—Only old remains were found on the nesting areas. (J.W.St.P.) No calls were heard and no living birds were seen.

Pied Shag **(Phalacrocorax varius).**—The colony near Tirikakawa was well populated. No tally was obtained during the visit, but Mr. Parkin stated that the number had increased. Mr. Parkin has since advised that on 24/7/47 they had not commenced nesting, but on that day he had seen the whole party in circling flight. This he presumed to indicate a breeding tendency. Then on 1/8/47 some were sitting on nests and others carrying nesting material.

Gannet **(Moris serrator).**—From the shore at my look-out post in front of the house, birds were seen on June 24, 25 and 27. They did not exceed three in number on any of these days.

Black-backed Gull **(Larus dominicanus)**.—The greatest number seen at once was four, one of which was immature. The population is certainly a small one.

Red-billed Gull **(Larus novaehollandiae)**.—Small flocks were seen flying past as follows: June 24, c. 20; June 29, 5; June 30, c. 30.

Pigeon **(Hemiphaga novaeseelandiae)**.—The numbers seen were greater than in December, 1946. (Sibson, 1947.) On June 25, one was seen at 1,600 feet on the Thumb Track, five along the top ridges, and one low on the Summit track. (J.W.St.P.) Three of these were feeding on miro. On June 28, five were seen on the Summit Track between 600 feet and 2,000 feet. (J.W.St.P.) Small flocks were scattered along the flat, feeding on white clover and pohuehue **(Muehlenbeckia australis)**. The population estimate of the flat and adjacent area was c. 60, with more in the gullies and on the higher country.

Harrier **(Circus approximans)**.—Single birds were seen on June 23 and 24. It is probable that they visit from the mainland and return in the one day. Against this probability, however, is the fact that one of these was sitting at dusk on the top of a green pohutukawa, (J.W.St.P.) as if intending to roost for the night.

Morepork **(Ninox novaeseelandiae)**.—A few calls were heard and one bird was seen on a punga in a gully.

Kaka **(Nestor meridionalis)**.—Seen and heard as follows:—June 23, none; 24th, one heard on Summit Track up to 650 feet, two seen from house; 25th, five to Summit via Thumb, none down Summit track (J. W. St. Paul), one heard at dawn and one at dusk behind house; 26th, one seen in manuka on Shag Track, one seen and one heard from house; 27th, three heard about house area; 28th, five to Summit via Summit Track (J.W.St.P.); 30th, one called at dawn near house. It was concluded that there were very few about the house area compared with December, 1946 (Sibson) and that they were scattered throughout the bush right to the highest point.

Red-fronted Parrakeet **(Cyanoramphus novaeseelandiae)**.—A few birds were seen and heard each day. Like the kaka, they were scattered everywhere right to the tops. Mr. St. Paul saw or heard three on the track to the Summit on June 25th, and on June 28 he saw ten and heard others high up. The old remains of one bird were found low down on the Summit Track. Two at this point approached closely and one chatted sociably.. It was so tame that it was at first thought to be "Sammy," the pet bird which roamed free from the house. However, Mrs. Parkin noticed that it had a full tail, whereas "Sammy" was short of one tail feather.

Kingfisher **(Halcyon sanctus)**.—At least one seen each day. Two together were seen at the house and single birds at Waipawa Stream and the east paddock. Mr. St. Paul saw none on his two trips to the Summit.

Rifleman **(Acanthisitta chloris)**.—Mr. St. Paul saw one at c 1,800 feet and two at c 1,200 feet on the Summit Track.

Grey Warbler **(Pseudogerygone igata)**.—Birds were seen and songs heard at all points about the flat and lower ridges and gullies. Strangely enough, Mr. St. Paul saw none on either of his two trips to the Summit. It was estimated that they were more plentiful than in December, 1946 (Sibson, 1947), but were on the whole less plentiful than on the mainland. Mr. Parkin had noted that there were a great many more in the spring of 1945 than at the same season in 1946.

White-breasted Tit **(Petroica macrocephala toitoi)**.—From the house garden to c. 2,000 feet some were seen and heard each day. It was noted that songs were heard at the fringe of the bush but not farther in. They are doubtless plentiful throughout the island.

Robin **(Miro australis)**.—Only two robins were seen and it would seem that they had retired to the shelter of the thick bush owing to the cold weather. In December, 1946, quite a few were seen in the fairly open lower parts of the gullies. Mr. St. Paul saw one near the Summit

on June 25. In "Grafton Gully" I saw one which I took to be a juvenile. The lower parts of its legs were flesh-coloured. It sang a little sub-song of three or four thin peeps and a canary-like trill, audible at only a few feet. It came within four feet of me but sang several times at six to eight feet. This was a truly delightful experience.

Fantail **(Rhipidura fuliginosa)**.—For the flat area, including the boulder bank and the fringe of the trees on the inland side, an estimate of 150 plus was agreed upon. This is a heavy population for sixty-odd acres. It would have been more readily understood if the rest of the island had been denuded of fantails, but this was not so. Mr. St. Paul saw eight up to 2,000 feet on the Summit Track in one trip, and they were equally plentiful at all other parts visited. In December, 1946, they were not at all plentiful. It would seem that they must at that time have been breeding in the gullies. In the June sunlight it was pretty to see such numbers of them hawking for flies over the shore boulders and even working out over the sea a little way.

Whitehead **(Mohoua ochrocephala albicilla)**.—These busy little creatures were everywhere from Titoki Point to the Summit and doubtless over the whole island. They were in small flocks of three to twelve, no larger groups being seen. Their varied songs and calls were heard all the time. One, probably owing to anger or alarm, made a call like a parrakeet.

Silvereye **(Zosterops lateralis)**.—Only a very few were to be found in the parts searched. It was agreed that the total would be 12 to 15.

Tui **(Prosthemadera novaeseelandiae)**.—From the shore to the highest tops the distribution was very even. The pohutukawa causes large numbers to assemble at the coast in summer, but the smaller and less profuse flowers of June cause them to scatter widely through the bush. A few fed at the syrup trough at the house but less than usual for the time of year. (C.H.P.)

Bellbird **(Anthornis melanura)**.—The distribution was practically the same as for the tui, except that a considerable number stayed about the house and fed eagerly on syrup provided for them. When replete, they loved to sun themselves on nearby branches and on a ladder which leaned against the house. One hardcase old cock would come into the porch and help himself from the main supply of syrup in a bucket. When the feeding trough became empty they all sang a certain song in request of more. Songs and calls of the daytime variety were plentiful but there was no dawn chorus of the gentle bells.

Stitchbird **(Notiomystis cincta)**.—No special effort was made to see stitchbirds but they were heard every day near the house, Mr. and Mrs. Parkin being adept at picking up their calls in the medley of bird sounds. Mr. St. Paul twice saw birds at c. 700 feet and one at c. 1,800 feet. A male in quite good plumage often visited a kohekohe tree near the house. This tree had lately been in full bloom and had attracted many stitchbirds.

INTRODUCED BIRDS ON THE ISLAND.

Chaffinch **(Fringilla coelebs)**.—The absence of song made it rather difficult to make a tally. Three single birds were seen, so they were certainly scarce. Mr. Parkin had noted more earlier. Mr. and Mrs. Parkin have never seen this species at any distance into the bush. This is odd in comparison with the mainland.

Sparrow **(Passer domesticus)**.—Fifty to sixty were constantly about the house. I once counted a flock of 35 feeding on the front lawn. Two birds were always to be seen near the grave along the flat.

Yellowhammer **(Emberiza citrinella)**.—It was estimated that the population of the flat, the only suitable area, would be c. 8. Mrs. Parkin saw a party of 14 on 17/7/47.

Thrush **(Turdus ericetorum)**.—Estimated number on flat c. 25. A party of eight seen flying by cowshed. Occasional song.

Blackbird **(Turdus merula)**.—Estimated number on flat c. 30. None singing.

Hedge Sparrow **(Prunella modularis).** — Estimated number about homestead 10/12. No song. Mrs. Parkin noted a party of five in the garden.

Skylark **(Alauda arvensis).**—Estimated number up to 15. On 23/6/47 three were seen flying low over the water from the direction of Little Barrier Island. They were about three miles from the mainland to which they were heading.

Starling **(Sturnus vulgaris).**—Flocks were frequently seen from six to fifty or so strong. The total was about sixty to seventy about the flat area, but starlings would be more likely to be all round the island than other introduced birds so there may have been more. Mr. St. Paul saw a single bird fly from the shore toward Leigh until lost to sight with binoculars. There is no doubt that they and the other small introduced birds cross the fifteen miles of sea readily. Mr. Parkin later reported flock of several hundreds on 22/7/47, evidently a strong flight from the mainland.

BIRDS RECORDED ON TWO RECENT VISITS (Turbott, October, 1945, and Sibson, December, 1946), BUT NOT FOUND IN JUNE, 1947.

Banded Rail **(Hypotaenidia philippensis).**
Shining Cuckoo **(Chalcites lucidus).**
Long-tailed Cuckoo **(Eudynamis taitensis).**
Yellow-fronted Parrakeet **(Cyanoramphus auriceps).**
Diving Petrel **(Pelecanoides urinatrix).**
White-fronted Tern **(Sterna striata).**
Greenfinch **(Chloris chloris).**
Goldfinch **(Carduelis carduelis).**—Mrs. Parkin saw two on 20/7/47, three weeks after the June, 1947, visit.
Pipit **(Anthus novaeseelandiae).**

BIRDS SEEN FROM THE SHORES OF THE ISLAND IN OCTOBER, 1945, and DECEMBER, 1946, BUT NOT IN JUNE, 1947.

Giant Petrel (**Macronectes giganteus).**
Flesh-footed Shearwater **(Puffinus carneipes).**
Buller's Shearwater **(Puffinus bulleri).**

BIRDS SEEN DURING THE CROSSINGS IN JUNE.

Giant Petrel **(Macronectes giganteus).**—Four seen at intervals.

Flesh-footed Shearwater **(Puffinus carneipes).**—Two seen quite closely about four miles from the island.

Buller's Shearwater **(Puffinus bulleri).**—One seen somewhat distantly. Identity not quite certain.

Fluttering Shearwater **(Puffinus gavia).**—23/6/47, several thousands extending all the way across. 30/6/47, a few scattered all the way.

Diving Petrel **(Pelecanoides urinatrix).**—Parties of two, five and two were seen close to Little Barrier, flying and also diving. The water was sufficiently rough to make them very active.

Black-browed Mollymawk **(Thalassarche melanophrys).**—23/6/47 five of these fine birds were seen, most of them within fifty yards of the launch. 30/6/47, one seen.

Little Blue Penguin **(Eudyptula minor).**—Not one was seen near the island, the recent heavy westerly weather having apparently driven them towards the mainland. They are usually to be found in what I call the "Penguin belt," a strip of water along the coast and from about two to four miles from it. In this area off the mainland we counted 25 from one side of the launch only.

Gannet **(Moris serrator).**—A few scattered right across.

White-fronted Tern **(Sterna striata).**—23/6/47, c. 100 near the mainland and two half way across.

Red-Billed Gull **(Larus novaehollandiae).**—23/6/47, a few right across. 30/6/47, c. 30 off Titoki Point, and odd ones all the way across.

Black-Backed Gull **(Larus dominicanus).**—Odd ones all the way.

An expedition of this nature often produces doubtful cases. Two are, I believe, worth recording so that they may help future observers.

On 24/6/47, I saw at sea from the island a flock of dark petrels, not visible to the eye, but plainly seen through a good telescope. They were all dark, no white under the wing, and feeding in a very loosely scattered flock, which stretched out of sight. They were certainly not flesh-footed shearwater, nor, if the absence of white under the wing could be taken as certain at such a distance, were they sooty shearwater. Neither of these species should have been present at the time. It seems that they most likely were grey-faced petrel working unusually close to land. Mr. P. C. Bull advises that the flock formation is characteristic. Also the species was nesting on the islands and the coast at the time.

Mr. St. Paul had a tantalising experience with a call which was exactly like that of a blue-wattled crow **(Calleas cinerea wilsoni)** but it was too distant to be sure and it was only heard twice. It came from away on the far side of Tirikakawa Valley, being heard from the old camp-site on the Summit Track. No tui call of this kind was heard during our stay. This call was the one known to us as the "organ and pipe." Mr. St. Paul is one of the best qualified men in New Zealand in regard to knowledge of this bird. As a boy he pelted them with clods as he went to school and except for his service in the 1914-18 war, he has lived among them ever since. Scarcely a week goes by without his seeing and hearing crows and he studies them closely. I may add that he is also a zealous guardian of the species in his district. I would, therefore, ask any future observers on Little Barrier Island who know the blue-wattled crow, to spend some time to find more definite evidence, even though the chances of success are probably poor. (c.f. Turbott, 1947.)

June 30 came all too soon and we sailed away on the "Gunner," sorry to be leaving this very heaven of birds, and sad, indeed, to leave those most wonderful friends, hosts and co-workers, Mr. and Mrs. Parkin of the island.

PIED STILT COLONY.

By Mrs. Olga Sansom, Invercargill.

On November 1, 1947, I visited a section of the Borstal Farm adjacent to the Oreti River, five miles from Invercargill, to see if the pied stilt **(Himantopus himantopus)** was nesting there. The locality is a river mouth with a bank of shingle, an area of rush and stunted silver tussock merging into marshy flats with a covering of shore gentian, a native buttercup (in flower), samolus and cotula (in flower), rush and big red tussock.

I counted 20 birds; they circled above me, swooped and yelped complainingly. It took me twenty minutes to find the first nest as I was searching amongst the stunted silver tussock, and only by good luck got out on to the shingle to make a detour, and there it was. I found five nests. Each nest was in a hollow in the shingle with hardly any nesting material, on the shore side of a single tussock a foot to 18 inches away from it. There were four eggs in each nest; they were all warm. When I found that the birds were sitting and how much more of an intruder I was than I had first thought, I made some brief and hurried notes and left.

On November 10, I set out from Invercargill to again visit the nests but did not get there owing to the collapse of my bicycle! However, on November 17 the position was: No. 1 nest: Two nestlings (no sign of other 2 eggs); No. 2 nest, ditto. No. 3 nest, 1 nestling (1 egg); No. 4 nest, 4 eggs (warm); No. 5 nest, empty. The perfect colour camouflage of the nestling was interesting. It looked as like the shingle as did the eggs. I counted 16 birds in the air. There may have been other nests, but although I searched I did not see any more. These five were within a radius of twelve yards. During the last two years a few pied stilts at least have been resident here on this estuary during the whole year.

BLACK-FRONTED TERN IN THE NORTH.

By R. B. Sibson, Auckland.

To the southern coast of the North Island the black-fronted tern **(Chlidonias albistriata)** is known as a not uncommon winter visitor (cf. Wodzicki, Birds of the Waikanae Estuary). During recent years it has also been found several times in the province of Auckland; and this has prompted me to collect such information as I can find about the presence of this bird in the north.

In his first edition (1872) of "A History of the Birds of New Zealand," Buller says that he does not remember having ever met with black-fronted terns further north than Wanganui Heads. But the second edition (1888) contains much more information. Once in the spring—the time of year is interesting—at the confluence of the Karapiro and the Waikato, Buller watched "a pair of these birds disporting in the air," and, although elsewhere in his description he says the bill of the black-fronted tern is "bright yellow," he remarks here on "their lovely coral bills." The use of the adjective "coral" prompts the query whether the bills really were "coral" and if so, whether they really were black-fronted terns which he saw. May they not have been perhaps white-winged black terns **(C. leucopterus)** which do have red bills? Stead, much more accurately, in my opinion, gives the colour of the bill of the adult as "rich orange."

On a subsequent occasion Buller watched two of these terns from Hamilton Bridge; and again when travelling in the Lower Waikato he observed a "very considerable flock in a meadow quite close to the railway-line, where several ploughs were at work." Then he adds that he had also met with smaller flocks at Onehunga and Maketu.

In the Supplement (1905) there is a passage under the heading of white-fronted tern **(Sterna striata)** which shows that Buller's identification of terns is not to be accepted without question. Here it is: "On the Taupo Plains, where there are thousands of sterile acres covered with manuka scrub, about five or six miles inland of the lake, I observed two terns, apparently of this species (white-fronted), hovering over the ground, although I find it difficult to imagine what they could find to attract them in such a barren locality. Probably they were in quest of lizards. This species frequents the Taupo Lake, and so does **Sterna albistriata.**" Both the surroundings and the behaviour here described strongly suggest **albistriata**, and it is worth noting that Buller adds as an afterthought that this species frequents Lake Taupo. It must surely be an exaggeration to say that white-fronted terns, an almost entirely marine species of which there are few, if any, proved inland records, "frequent" the lake.

Although not strictly relevant to the present discussion, perhaps Buller's concluding remarks from the passage on the white-fronted tern in the Supplement may be quoted here with one comment: "I found this tern abundant at Tonga. I saw no **Sterna caspia** there, but they are plentiful at Wakaya, in the Fiji group." According to Mayr (Birds of the South-west Pacific) neither species is recorded from those islands.

So much for Buller's evidence. It is unfortunate that he gives no precise dates, and his identification is not always to be trusted.

The next source of information is the Auckland Museum, which contains six skins, locally obtained between 1879 and 1897, four from Manukau by T. F. Cheeseman and his brother, and two from Whakatane by Liardet. Although the data on their labels are not all that could be wished, these skins are valuable in that they provide the first concrete evidence of long northward movement of black-fronted terns and offer a hint that Auckland is annually visited by a few individuals of this predominantly South Island bird. (a) 26/6/1879, Manukau, juv. (b) 3/7/1884, Manukau, female, almost in full plumage. (c) Winter, 1886, Manukau, juv. (d) Winter, 1886, Manukau, ? male, assuming breeding plumage. (e) Winter, 1897, Whakatane, juv., assuming adult plumage.

(f) Winter, 1897, Whakatane, ? ad. in winter plumage, moulting into spring plumage.

Almost a quarter of a century elapses before the next recorded occurrence. Dr. R. A. Falla has informed me that on 10/11/21 he saw a black-fronted tern flying in the Waitemata off North Head.

During recent years an increase in observers around Auckland has led to a corresponding increase in records. These are:— (a) 10/3/40, Muriwai Stream, five; this is the earliest autumn appearance; and also the nearest approach to a flock recorded in recent years.—C. A. Fleming, P. C. Bull and R.B.S. (b) 17/11/40, Muriwai Stream. One juv. This and Dr. Falla's November record suggest that some non-breeding juveniles may linger well to the north of the breeding grounds; as happens with some wrybills and S.I. pied oystercatchers; and mutatis mutandis, with some godwits, knots and possibly Arctic skuas.—C. A. Fleming, W. Ridland and R.B.S. (c) 6/5/41, Pouto, N. Kaipara. One juv. This is the most northerly record. The bird was frequenting a pool tucked away between shifting sand-dunes and the consolidated country. A double note sounding like swit-week or kit-week was heard.—W. Ridland and R.B.S. (d) 5/5/43, Te Henga. One was sitting on the beach among white-fronted terns. It could not be found next day.—H. B. Lusk, Mrs. J. W. Sibson and R.B.S.

In view of Buller's remark that he had seen black-fronted terns at Maketu and Liardet's specimens collected at Whakatane, it is a matter for satisfaction that these birds may still be found on that stretch of the Bay of Plenty coast. On the two occasions when I have visited that area I have seen black-fronted terns. On 8/9/40, W. Ridland and I watched two immature birds flying up and down the estuary of the Rangitaiki River. Again, on 15/5/47, four flew across the Whakatane Road, near Thornton, a few miles from the Rangitaiki River, dipped buoyantly over some sodden pastures and disappeared inland.

The wintering of black-fronted terns in the Bay of Plenty raises the question whether a few pairs may not be breeding in the North Island. Black-billed gulls **(Larus bulleri)**, their associates on the river beds of the South Island, are evidently flourishing on the volcanic plateau, large tracts of which are ornithologically almost unknown. From Buller's account it is clear that black-fronted terns were breeding in the North Island last century. In the second edition there occurs this significant passage: "On the habits of this species far inland Captain Mair has sent me the following interesting note: 'During the calm summer evenings in December, 1879, I observed hundreds of these little birds flying round the clumps of black birch trees which here and there dot the course of the Takiahuru Stream, running through the Murimotu-Karioi Plain on the south-east base of Ruapehu mountain. . . Both in that month and in the preceding one I found numbers of the young of this species lying or squatting on the sandbanks far up the course of the Whangaehu River.'" More recently, Stead, in "The Life Histories of New Zealand Birds," writes: "I have seen it on the Waiouru Plains; and have often wondered that it was not a more plentiful bird in that locality as is the case in similar country in the South Island."

Finally, I should like to make a comment on the taxonomic status of the black-fronted tern, or, as Guthrie-Smith calls it, the inland tern. Its habits, manner of flight and general morphology group it with the marsh terns; and although Alexander (Birds of the Ocean, p. 167) somewhat surprisingly calls it a **Sterna**, Oliver rightly retained it in the genus **Chlidonias**. Across the world there are three recognised marsh terns, the black **(C. niger)**, a West Palaearctic and Nearctic species; the white-winged black **(C. leucopterus)** a Palaearctic species, creeping down into Australia and New Zealand; and the whiskered **(C. hybrida)**, a South Palaearctic, Ethiopian, Oriental and Australian species. Both **C. niger** and **C. leucopterus** are fine-billed species, but **C. hybrida** has a much robuster bill, as has also **albistriata**. It may, indeed, have been its robust bill which led Alexander to place **albistriata** in the genus **Sterna**. The morphological similarity between **hybrida** and **albistriata** is

obvious at a glance in the field, and it is worth noting that the black-fronted tern was called **hybrida** as long ago as 1867 in the Journal fur Ornithologie by Finsch, whose connection with N.Z. ornithology is perpetuated in the name of the South Island riverbed oystercatcher **(H. O. finschi)**. **Hybrida** has an extensive range, and is represented in Australia by the subspecies **fluviatilis**. I would, therefore, suggest that the black-fronted tern be recognised as a subspecies of the whiskered tern, and that its full name is **Chlidonias hybrida albistriata** Gray.

SUMMARY.

1.—The evidence comes from (a) the works of Sir Walter Buller; (b) six skins in the Auckland Museum; (c) recent observations.

2.—Records for the west coast of Auckland and the Bay of Plenty near Whakatane go back into the nineteenth century.

3.—The earliest date is March 10 and the latest November 17.

4.—The majority of birds are juveniles, some of which may summer north of the breeding grounds.

5.—There is evidence that black-fronted terns used to nest in the North Island; and there may still be isolated pairs or small colonies breeding in suitable country.

6.—The suggestion is made that the black-fronted tern is a subspecies of the whiskered tern **(C. hybrida)**.

BIRD LIFE AT PUERUA, SOUTH OTAGO.

By Dunedin Naturalists' Field Club.

On "Jura Place", Puerua, South Otago, about 52 acres of native bush for almost 57 years have been kept as a private bird sanctuary.

Riflemen **(Acanthisitta chloris)**, yellow-breasted tits **(Petroica m. macrocephala)** and fantails **(Rhipidura fuliginosa)** are present in small numbers and are much less numerous than they were several years ago. Two small flocks of brown creepers **(Finschia novaeseelandiae)** frequented the bush four years ago. A few were seen in 1945, and though not again actually seen, in the New Year, 1947, were heard high up in the trees. Bellbirds **(Anthornis melanura)** are particularly numerous and appear to be increasing. In June, 1945, ten at a time were counted singing and playing near the back door where they are fed. Tuis **(Prosthemadera novaeseelandiae)** are holding their own. In the autumn of 1946 they all disappeared for a time, but after a few weeks they returned and were again plentiful. A few wood pigeons **(Hemiphaga novaeseelandiae)** are always about. In March, 1946, seven were seen in flight together.

A parrakeet **(Cyanoramphus sp.)** was heard and seen in flight the same day. On October 21, 1946, a call, believed to be that of a shining cuckoo **(Chalcites lucidus)** was heard. The call was heard definitely on October 28 and not again during the whole season. Records of first calls for previous years are: 1945, October 16; 1944, Oct. 25; 1943, Oct. 28. Moreporks **(Ninox novaeseelandiae)** are heard calling at night; particularly so in October, 1946.

Pukekos **(Porphyrio poliocephalus)** are very numerous in the Otanomomo Swamp. The west end is about half a mile from "Jura Place," and the swamp stretches in an easterly direction for miles towards the sea. Over a year ago, after a flood, 46 pukekos were counted in one paddock.

Thrushes **(Turdus ericetorum)**, blackbirds **(T. merula)** and starlings **(Sturnus vulgaris)** are numerous and increasing. Starlings seem to have little sense. Every year they litter the woolshed with grass, etc. They apparently try to build a nest on a beam high in the shed; the material falls off, but they continue their efforts until there is a great heap on the floor and, of course, nothing on the beam. Redpolls **(Carduelis cabaret)**, chaffinches **(Fringilla coelebs)**, yellowhammers **(Emberiza citrinella)**, greenfinches **(Chloris chloris)**, and goldfinches **(Carduelis carduelis)** are all noted at times, the redpolls being the most plentiful. On March 27, 1944, a goldfinch was seen with three young ones.

RELATIVE ABUNDANCE OF BIRDS ON KAPITI.

By R. H. D. Stidolph, Masterton.

A series of strip census counts of birds on Kapiti Island Bird Sanctuary was made over a ten-day period in November, 1942, with an idea of gaining an indication of the relative abundance of the various species, rather than the actual number. It appears much safer ground to concentrate on known, restricted areas of a particular type of country and try to assess the population of these areas and avoid a multiplication in which the basic factors may have a wide margin of error.

The basis of the respective counts was to take a known distance in chains and include an imaginary line about five chains on either side of the bisecting line, so that every chain in length represented an acre over which the count was made. Hence calculations are made as simple as possible. In order to allow for probable variations in the presence of birds at different times of the day, the counts were likewise varied; usually, for the smaller areas, they occupied half-hour periods at any time of the day. An analysis of counts follows, figures for each species relate to maximum number in one count, total number in all counts and average per 10 acres, given in that order:—

Area A.—Caretaker's house northward to Ngaio Patch, 10 chains, area 10 acres, eight counts: Whitehead, 8, 48, 6; starling, 9, 48, 6; native pigeon, 6, 25, 3; bellbird, 5, 23, 2.8; red-fronted parrakeet, 6, 23, 2.8; tui, 4, 18, 2.2; kaka, 3, 11, 1.8; goldfinch, 2, 7, .8; blackbird, 2, 6, .7; chaffinch, 2, 6, .7; long-tailed cuckoo, 2, 5, .6; pied fantail 2, 5, .6; kingfisher, 2, 4, .5; weka, 2, 4, .5; tomtit, 1, 3, .3; Californian quail, 1, 3, .3; robin, 1, 3, .3; pipit, 2, 2, .2; skylark 1, 2, .2; house sparrow, 1, 1, .1; hedge sparrow, 1, 1, .1. Little blue penguin, 3 nests.

Area B.—Caretaker's house southward to Chappie's Camp, 12 chains, area 12 acres; ten counts: Whitehead, 13, 75, 6.25; bellbird, 8, 47, 3.9; red-fronted parrakeet, 9, 45, 3.75; tui, 7, 31, 2.55; robin, 4, 22, 1.8; pied fantail, 6, 18, 1.5; native pigeon, 4, 16, 1.3; starling, 4, 12, 1; weka, 5, 10, .8; kaka, 3, 8, .65; blackbird, 2, 5, .4; long-tailed cuckoo, 2, 5, .4; goldfinch, 2, 3, .25; Californian quail, 1, 3, .25; house sparrow, 2, 2, .15; white-eye, 1, 2, .15; redpoll, 2, 2, .15; kingfisher, 1, 1, .08; skylark, 1, 1, .08. Little blue penguin, 7 nests alongside track.

Area C.—House to Te Rere, 27 chains; area, 27 acres; two counts: Whitehead, 6, 11, 2; tui, 5, 6, 1.1; red-fronted parrakeet, 2, 3, .5; bellbird, 1, 2, .3; starling, 1, 2, .3; weka, 2, 2, .3; long-tailed cuckoo, 1, 1, .18; blackbird, 1, 1, .18; robin, 1, 1, .18; kaka, 1, 1, .18; native pigeon, 1, 1, .18; kingfisher, 1, 1, .18.

Area D.—Te Rere to Webber's Stream; 92 chains; area, 92 acres. Six counts: Bellbird, 14, 43, .78; whitehead, 11, 40, .73; red-fronted parrakeet, 10, 30, .55; starling, 4, 10, .16; tui, 2, 5, .08; weka, 2, 5, .08; long-tailed cuckoo, 3, 5, .08; yellowhammer, 1, 3, .05; native pigeon, 3, 3, .05; blackbird, 1, 2, .03; kaka, 1, 2, .03; pied fantail, 1, 2, .03; hedge sparrow, 1, 1, .01; robin, 1, 1, .01; Californian quail, 1, 1, .01; kingfisher, 1, 1, .01; goldfinch, 1, 1, .01; tomtit, 1, 1, .01.

Area E.—Webber's Stream to Lake; 50 chains; area, 50 acres. Three counts: Starling, 18, 46, 3; Californian quail, 3, 9, .6; skylark, 4, 9, .6; yellowhammer, 3, 5, .32; red-fronted parrakeet, 3, 5, .32; chaffinch, 3, 5, .32; goldfinch, 3, 4, .26; redpoll, 2, 4, .26; tui, 2, 4, .26; blackbird, 2, 3, .2; song thrush, 3, 3, .2; hedge sparrow 2, 3, .2; pipit, 2, 3, .2; greenfinch, 1, 2, .12; pied fantail, 1, 2, .12; harrier, 1, 2, .12; bellbird, 2, 2, .12; long-tailed cuckoo, 1, 1, .06; house sparrow, 1, 1,, .06; weka, 1, 1, .06.

Area F.—Okupe Lake and neighbourhood. Three counts. (Average in this case for Lake and nearby area): Grey duck, 256, 687, 262.3; paradise duck, 41, 67, 22.3; shoveller, 25, 53, 17.6; pied stilt, 20, 49, 16.3; mallard, 18, 30, 10; banded dotterel, 6, 11, 3.6; black swan, 3, 7, 2.3; black shag, 1, 1, .3.

Area G.—Chappie's Camp to Trig, via Track (portion of return trip was made via old track through considerable area of manuka); 100

chains; area, 100 acres. Two counts (up and down); figures, total and average for 10 acres: Whitehead, 68, 6.8; bellbird, 26, 2.6; robin, 22, 2.2; red-fronted parrakeet, 14, 1.4; yellow-fronted parrakeet, 4, .4; tui, 16, 1.6; weka, 14, 1.4; kaka, 9, .9; long-tailed cuckoo, 6, .6; pied fantail, 5, .5; blackbird, 3, .3; tomtit, 3, .3; native pigeon, 3, .3; kingfisher, 1, .1; more-pork, 1, .1.

Areas A, B. C. and D comprise coastal fringe vegetation with some grass lands; area E is open grass land at the northern end of the island; area F is the Okupe Lake, and area G is nearly all heavily bushed with a belt of manuka on the lower hillsides facing the mainland. In the case of area D the count was made on the eastern side of the ten-chain strip; in all others the count included birds seen on both sides of the bisecting line.

The census showed that the whitehead was undoubtedly the most numerous bird on the sanctuary, there being about twice as many as the bell-bird and about three times more than the parrakeet, robin and tui, all of which were about equal in numbers. Slightly lower down the list were the starling and the weka. Other notable features were the scarcity of the tomtit, the extreme scarcity of the silvereye and the complete absence of the grey warbler, a species, however, that has been recorded on Kapiti. It is noteworthy that out of 48 parrakeets seen during the taking of the census (excluding additional birds heard) only four were the yellow-fronted species: all the others were red-fronted. The yellow-fronted birds were seen over the 1000ft. altitude line.

No attempt was made to assess the numbers of the mutton bird breeding on the island. Mr. A. S. Wilkinson has recorded (see appendix) an increase in the population of this species.

It must be emphasised that since 1924 a vast change has taken place in the conditions on Kapiti; one that has an important bearing on the bird population. In 1924 the sanctuary was overrun with sheep and goats so much so that considerable areas were denuded of undergrowth. Following the destruction of all goats and the removal of the sheep, the bush has regenerated vigorously and is reclothing former grass areas. This, no doubt, has contributed to an increase in the numbers of bush species.

It is more convenient to deal with the counts of the gulls in a separate section. On the shingle bank at the northern spit of the island there has been a black-backed gull colony for many years. A count of nests made in two successive years gave the following details:—

November 6, 1942: Empty, 12; one egg, 4; two eggs, 37; three eggs, 63; one young, 2 eggs, 3; two young, 1 egg, 1; two young, 1; total, 120.

November 9, 1941: Empty, 30; one egg, 12; two eggs, 29; three eggs, 59; one young, 1 egg, 1; total, 129.

Other counts made in 1941 were:—Rangatira Point, 2 nests; south to waterfall, 2; waterfall to Wharekohu, 16; around Wharekohu, 16; between Te Rere and Webber's Stream, 5; Tokomapuna Island, 54 (most of them empty, only five with three eggs and five with one or two eggs). This gives a total of 95 nests on the eastern side of the island and Tokomapuna Island, plus 129 at the northern spit; a grand total of 224.

In November, 1941, a breeding colony of the red-billed gull was located on a rock at Te Rere. A count on November 10, gave a minimum of 203 birds, and at that date there were 21 nests with one egg, and eight with two eggs. The next day there were 20 nests with one egg and 12 with two. On November 17, 39 nests had one egg, 39 two eggs, and two nests had three eggs.

On rocks off the northern end of the island in 1941 both the red-billed gull and the white-fronted tern were breeding. One rock had 26 nests of the tern (12 with one egg, 14 with two eggs), and six nests of the gull (two with two eggs, one with one egg). A second rock had three terns' nests; a third had 52 terns on it, with 14 nests; two con-

tiguous rocks had another 12 terns' nests; a total of 55 terns' nests and six red-billed gulls' nests. There was a single terns' nest at the gull colony at Te Rere, with one egg.

In an appendix I give the leading points of previous references relating to the number of birds on Kapiti and published in reports that may be overlooked.:

APPENDIX I.

In October, 1906, Dr. L. Cockayne (Report on a Botanical Survey of Kapiti Island, 1907) stated: Pigeon, "in great numbers"; tui and bell-bird, "heard everywhere"; robin, "quite numerous"; whitehead, "by no means rare"; muttonbird, "breeds at two places on summit."

All the tuis left Kapiti on March 18, 1918, stated Mr. J. L. Bennett, caretaker (Scenery Preservation, Annual Report, March 31, 1919) and returned on August 24. Though still numerous they were not as plentiful as they were before they left. On May 24, Mr. W. H. Field, M.P., spoke of reappearance of tuis in the Waikanae district. Mr. Bennett said that no doubt they went to Waikanae from Kapiti. After August, it was reported that there were very few at Waikanae. In the following year, Mr. Bennett reported the tuis to be greatly reduced in numbers, also the whitehead and the fantail. A few years ago the robin was seldom seen; at present it was everywhere.

In the 1924 Scenery Preservation report, Mr. Johannes C. Andersen, at one place in Waterfall Valley, in less than half an hour, stated that he saw 20 to 30 whiteheads, six bell-birds, two tuis, one fantail, one kaka and a flight of finches, while other birds were heard. He mentions seeing for the first time on the island the grey warbler, at three localities.

Mr. A. S. Wilkinson, who took up duty on Kapiti Island as caretaker in 1924, has included in his annual reports to the Department of Lands, published in the Scenery Preservation Report, 1925-1941, records which include references to the fluctuations in the numbers of birds on Kapiti. Notable among these is a scarcity of the fantail in the 1930-31 breeding season, when there were only three or four pairs in different parts of the sanctuary, whereas in earlier years he knew of six or eight pairs handy to his house. It increased again each succeeding year until it reached its usual numbers in the 1934-35 season. Similarly, a decrease in the numbers of the tomtit was recorded in the 1935-36 season, a state of affairs that continued until the 1938-39 breeding season, after which it became more numerous again. He recorded during his 18-year period on the island a definite increase in the numbers of the robin, which was to be seen in places where previously there were none, and in his 1939 report he stated that there were "twice as many as in 1924." In January and February, 1933, he saw more grey warblers than during his previous eight years on the island and one was seen with a young shining cuckoo. He recorded many fluctuations in the numbers of the long-tailed cuckoo. Kakas were more numerous in the 1933-34 season than in previous years. He recorded no increase in the numbers of the blue heron (four pairs) except that a pair bred for the first time on Tokomapuna Island in the 1930-31 season and had continued to do so since then. In the Emu, Vol XXVI., 237-258 (1927), Mr. Wilkinson recorded the whiteeye, kaka and pigeon as flying to and from the mainland. Species which he recorded as having increased during his period on the island (Scenery Preservation Report) included the whitehead, robin, kiwi **(Apteryx australis and A. oweni)**, bellbird, red-fronted parrakeet, mutton bird, pigeon, white-fronted tern, red-billed gull and black shag.

APPPENDIX II.

SPECIES BREEDING ON KAPITI.

Brown Kiwi **(Apteryx australis)** and Little Grey Kiwi **(Apteryx oweni)**. Five introduced in 1912; 7 in 1923; species not differentiated; increasing.

Little Blue Penguin **(Eudyptula minor)**.—A common breeding bird.

Mutton Bird **(Puffinus griseus)**.—Common on main ridge; increasing.
Black Shag **(Phalacrocorax carbo)**.—In small numbers, increasing.
Paradise Duck **(Tadorna variegata)**.—Introduced in 1930; increasing.
Grey Duck **(Anas poicilorhyncha)**.—In small numbers; many visitors.
Shoveller **(Anas rhynchotis)**.—Bred 1929-30 season. (A. S. Wilkinson.)
Grey Teal **(Anas gibberifrons)**—Bred in 1929-30 season. (A.S.Wilkinson.)
White-fronted Tern **(Sterna striata)**.—Common.
Black-backed Gull **(Larus dominicanus)**.—Common.
Red-billed Gull **(Larus novaehollandiae)**.—Fairly common.
North Island Oystercatcher **(Haematopus reischeki)**.—Bred one year on Tokomapuna Island. (A. S. Wilkinson).
Banded Dotterel **(Charadrius bicinctus)**.—Near Okupe Lake.
Pied Stilt **(Himantopus himantopus)**.—Near Okupe Lake.
Weka **(Gallirallus greyi)**.—Fairly common.
Blue Heron **(Demigretta sacra)**.—Scarce; no increase.
Californian Quail **(Lophortyx californica)**.—Scarce.
Native Pigeon **(Hemiphaga novaeseelandiae)**.—Fairly common.
Harrier **(Circus approximans)**.—Scarce.
Morepork **(Ninox novaeseelandiae)**.—Scarce.
Kaka **(Nestor meridionalis)**.—Scarce.
Red-fronted Parrakeet **(Cyanoramphus novaeseelandiae)**.—Common.
Yellow-fronted Parrakeet **(Cyanoramphus auriceps)**.—Scarce.
(?) Kakapo **(Strigops habroptilus)**.—Three introduced in 1912; last seen 1936. (A. S. Wilkinson.)
Shining Cuckoo **(Chalcites lucidus)**.—Extremely scarce.
Long-tailed Cuckoo **(Eudynamis taitensis)**.—Fairly common; numbers fluctuate.
Kingfisher **(Halcyon sanctus)**.—Scarce.
Pipit **(Anthus novaeseelandiae)**.—Fairly common.
Grey Warbler **(Pseudogerygone igata)**.—Very scarce.
North Island Tomtit **(Petroica m. toitoi)**.—Numbers fluctuate.
Robin **(Miro australis)**.—Common; increasing.
Pied Fantail **(Rhipidura fuliginosa)**.—Common; numbers fluctuate.
Whitehead **(Mohoua o. albicilla)**.—Very common.
Whiteeye **(Zosterops lateralis)**.—Scarce breeder; sometimes very common winter visitor.
Tui **(Prosthemadera novaeseelandiae)**.—Common; numbers fluctuate.
Bellbird **(Anthornis melanura)**.—Common; increasing.
(?) Saddleback **(Creadion carunculatus)**.—Introduced in 1925; bred 1926; last seen 1932. (A. S. Wilkinson).
Greenfinch **(Chloris chloris)**.—Scarce.
Chaffinch **(Fringilla coelebs)**.—Scarce.
Redpoll **(Carduelis cabaret)**.—Fairly common.
Goldfinch **(Carduelis carduelis)**.—Scarce.
House Sparrow **(Passer domesticus)**.—Scarce.
Yellowhammer **(Emberiza citrinella)**.—Rare.
Song Thrush **(Turdus ericetorum)**.—Scarce.
Blackbird **(Turdus merula)**.—Scarce.
Hedge Sparrow **(Prunella modularis)**.—Scarce.
Skylark **(Alauda arvensis)**.—Scarce.
Starling **(Sturnus vulgaris)**.—Fairly common.

OYSTERCATCHER SWIMMING.—Reference is made in this journal (Vol. 2, No. 5, page 124) to the swimming of the oystercatcher. In 1928 I photographed a young black oystercatcher **(Haematopus unicolor)** in its kelp nest on the beach on the south coast of Stewart Island—a perfect example of protective mimicry, for my companions watched me take the photograph, and, though they were not four yards from the bird, they had not seen it, till I lifted it up and showed it to them. When I put it down again it made for the water and swam strongly across the bay with the parent birds screeching above it. This bird was only partially fledged and, of course, lacked the webbed toes of the swimming birds.—(W. Martin, *Dunedin Naturalists' Field Club.*)

BIRD NOTES FROM MAHIA PENINSULA.

By W. J. Phillipps, Wellington.

Mahia Peninsula, Hawke's Bay, has now become largely denuded of native bush. From early settlers I understand that heavy bush was the rule in most regions before the advent of the Europeans. Tawa was one of the main elements in this bush, but also in smaller numbers were totara, hinau and a large variety of other native trees. Bird life was abundant, but has gradually decreased until now birds are relatively rare over the large pastoral areas.

Recently, in November, 1947, I was enabled to visit Mahia and noted the increased pasturage, new roads and settlements since my last visit in 1924. Birds are common only on the block known as Moutere, where Mr. G. E. Ormond has established a small bush reserve on his own property. In this reserve the pigeon **(Hemiphaga novaeseelandiae)** and tui **(Prosthemadera novaeseelandiae)** have become very plentiful. Mr. Ormond tells me that on one occasion in 1946 he counted sixteen pigeons close to his home, which is about half a mile from the bush reserve. On the lawn near the house may be seen at intervals the blackbird **(Turdus merula)**, the thrush **(T. ericetorum)** and the Californian quail **(Lophortyx californicus)**. In the small reserve may also be seen both the long-tailed **(Eudynamis taitensis)** and the shining cuckoo **(Chalcites lucidus)**, as well as numerous pied fantails **(Rhipidura fuliginosa)**. Yellowhammers **(Emberiza citrinella)** and an odd magpie **(Gymnorhina sp.)** occupy trees in the vicinity; but the magpie is generally rare on Mahia. Two of the most common birds in the area are the myna **(Acrodotheres tristis)** and the sparrow **(Passer domesticus)**.

Mr. Ormond tells me that there is no record of the kiwi **(Apteryx australis)** ever having been seen on Mahia. Up to the year 1907 the weka **(Gallirallus greyi)** was particularly abundant in several localities, in particular on the Moutere block. After this date the weka declined in numbers at an alarming rate until now it is generally considered to be extinct. Late last century the peacock **(Pavo cristatus)** said to have been introduced by the early whalers became very common on the Mahia block which includes the site surveyed for Mahia township. In this connection I have lately received a letter from Mr. Guy Ormond, Mahia. He writes, under date January 1, 1948: "Peacocks are now confined to a portion of my property called Te Hoe. They have been here over half a century. At one period, about 25 years ago, they were scattered over a block of more than a thousand acres and were quite plentiful. Now, owing to the depredations of shooters in search of pigs and deer, the numbers would be between ten and twenty. Five years ago they were shot down to one cock and two hens, but I have prevailed on shooters to leave them alone. They are now on the increase again. I notice the following birds still in the bush: Pigeon, tui, kaka **(Nestor meridionalis)** and two small lots of what we used to call 'native quail' —small brown birds, living near Terapikia." [The latter would be the Australian quail **(Synoicus ypsilophorus)**.—Ed.]

In several swampy areas not far from the sea, a few pukeko **(Porphyrio poliocephalus)** may be seen, while on the numerous streams which run to the sea an occasional bittern **(Botaurus poiciloptilus)** is noted; but in general the bittern is said to be relatively rare compared with the condition some years ago. According to Mr. P. H. McKay, the grey duck **(Anas poicilorhyncha)** is fairly common in some localities on the northern side of the peninsula, while the mallard **(A. platyrhynchos)** is much rarer. The same informant tells me that the black shag **(Phalacrocorax carbo)** is numerous, but that the white-throated species **(P. melanoleucos)** is rare. On lagoons near estuaries, Mr. McKay states that the black swan **(Cygnus atratus)** is not uncommon; also the white-headed stilt **(Himantopus himantopus)**, and the red-billed gull **(Larus novaehollandiae)**. The blue heron **(Demigretta sacra)** is also to be seen around the coast.

BIRD LIFE ON WEST COAST, SOUTH ISLAND.

I.—NOTES ON THE BIRDS OF REEFTON.

By W. J. Phillipps, Wellington.

These notes refer to the years 1881-85 (inclusive). They were supplied to me by Mr. J. Patterson, of Wellington, retired. Mr. Patterson has always retained a considerable interest in bird life and his comments are of more than passing interest. The most common birds of the bush areas between Reefton and Greymouth were at this time kaka **(Nestor meridionalis)**, parrakeets (some with red feathers on the head **(Cyanoramphus novaeseelandiae)** and some with yellow **(C. auriceps)**, tui **(Prosthemadera novaeseelandiae)** and pigeons **(Hemiphaga novaeseelandiae)**. The settlers appear in general to have been interested in bird life. This interest was not wholly economic, for many residents kept one or more bush birds in cages in much the same manner as we of today keep imported birds. Some of these bush birds were caged from infancy and many lived for several years.

The leading aviarist of Reefton was Mr. Joe Lawson. He experimented with keeping many of the rarer types of native birds; but the results of his experiments are lost to us. Suffice to say that the fashion of keeping native birds became almost universal in Reefton.

Mr. Patterson tells me that tui, parrakeet, kaka and bush canaries **(Mohoua o. ochrocephala)** were the most common cage birds. Parrakeets were readily taught to talk, while tui were also trained to speak. Bush canaries had a pleasing whistle when trained. Less common in cages were black and white tomtits **(Petroica m macrocephala)**, kingfishers **(Halcyon sanctus)**, robins **(Miro australis)** and bell birds **(Anthornis melanura)**. The cages were made from gin cases (J.D.K.Z.). Battens was usually secured across the front; only a few residents being able to secure wire netting.

This was the coaching period and Reefton was relatively a populous town. The most important stop for coaches prior to entering Reefton was the accommodation house of Mr. G. Baitari, Little Grey (Mawheraiti) approximately 20 miles from Reefton. It was here that the road-weary coach passengers descended daily for a mid-day meal, the chief feature of which was a bird pie of kaka, parrakeet or pigeon. These pies achieved considerable local fame during this period and large numbers of birds must have been shot or trapped to keep up the supply. About this time kaka began to become less abundant. Dr. Thorpe, of Reefton, introduced rabbits and Californian quail **(Lophortyx californicus)** into the district about 1882 and the latter quickly increased in numbers, probably replacing some of the kaka which had found their way into the pies of the early settlers.

The shining cuckoo **(Chalcites lucidus)** was common in the bush in summer. It was called zebra bird or rain bird by the settlers, the latter name being given because of a common belief that when the shining cuckoo whistled at night rain was sure to follow, surely a superfluous prophecy in a rainy area. The slaughter yards of Reefton were situated a little distance from the town near some heavy bush. Here shooting parties would hide in the trees near at hand to pick off the parrakeets. These birds came to feast on the fat off the carcases of animals or their skins hung out in that vicinity.

Common bush birds, apart from those already mentioned, were tomtits, wrens (? species), native thrushes **(Turnagra capensis)**, black and pied fantails **(Rhipidura fuliginosa)** and creeper **(Finschia novaeseelandiae)**. Robins were common and were loved by all because of their trustfulness. Bush hawks **(Falco novaeseelandiae)**, kingfishers and pukeko **(Porphyrio poliocephalus)** were also common, while weka **(Gallirallus australis)** were abundant. Less common were the saddleback **(Creadion carunculatus)** and rifleman **(Acanthisitta chloris)**. Mr. Patterson saw no kea **(Nestor notabilis)**, kiwi **(Apteryx sp.)** or kakapo **(Stripogs habroptilus)**; so the two latter may have been exterminated

before 1881. The native crow **(Calleas c. cinerea)** was also unknown around Reefton during this period. Morepork **(Ninox novaeseelandiae)** were abundant at night. Mention might also be made of the bats (presumably the long-tailed species) which in the evenings at dusk invaded the streets of Reefton feeding on night insects.

II.—BIRDS IN INANGAHUA DISTRICT.

By L. J. Bell, Rotokuhu, Inangahua Valley.

According to my experience, which extends over a period of more than fifty years, as a survey hand, and later as a surveyor, a bushman and a bush farmer with almost every weekend for nearly 60 years spent in the bush, the best time for native birds and native flora is from October 10 to the end of November.

In October the native trees are coming into bloom and the young birds are leaving the nest. The weather is usually very patchy in October with a lot of rain, and September is very wet.

Sixty years ago we had many native birds which are now almost unknown. Kiwis we had in hundreds. They have almost disappeared. Their call, like the note of a tram conductor's pea whistle, could be heard from almost every bush gully in the district. Now one is rarely heard. One of my sons saw one—a large silver-grey bird in April, 1947. We kept one as a pet when I was a lad.

Kakapos were plentiful in the limestone foothills and in the silver pine pakihis. They were seldom seen as they are night birds, as their name implies. We caught them. They are practically extinct in these parts.

The native thrush, the saddleback, the native crow, the teal duck and blue or mountain whistling duck **(Hymenolaimus malacorhynchus)** were here but I have not seen them for many years now. I think it is quite safe to say that stoats and weasels have destroyed them as one sees these pests even at the heads of creeks and on the hill tops.

The birds you can be assured of seeing in the Inangahua district are: Bush robins, tuis, koromakos, grey warblers **(Pseudogerygone igata)**, fantails, pigeons, wekas, tomtit, waxeyes **(Zosterops lateralis)**, kingfishers and black shags **(Phalacrocorax carbo)**.

Birds you may see are: Riflemen, fern birds **(Bowdleria punctata)**, kakas, long-tailed cuckoos **(Eudynamis taitensis)** and shining cuckoos in season.

I have seen many flocks of waxeyes in the dense bush this winter (1947). I counted over 60 in one flock on June 28. They seem to be here all the year round.

III.—BIRDS IN SOUTH WESTLAND AND WESTERN OTAGO.

The following record of bird life was made by Mrs. P. L. Moore, of the Dunedin Naturalists' Field Club while with a tramping party in South Westland and Western Otago:—

Makarora to Haast, December 26 to 31, 1946.—Riflemen, numerous (the commonest native bush bird seen throughout the whole of the tramping trip); grey warblers, a few noted; pipits, noted at Cameron's Flat, Dec. 26; fantails, about two dozen noted, all black; bellbirds, tuis, pigeons and grey ducks **(Anas poicilorhyncha)**, numerous; paradise ducks **(Tadorna variegata)**, adult and young noted; morepork, one seen, but calls heard every night throughout the trip; keas, about four dozen noted going down the Haast on Dec. 27; parrakeets, young yellow-fronted with adults; pukeko, adult and young numerous at Haast, Dec. 27; black oystercatchers **(Haematopus ?sp.)**, going down the Haast about three pairs.

Haast to Jackson's Bay, Dec. 30.—From Haast to the coast bird life was not plentiful but a few tomtits, pigeons, bellbirds and keas were

noted. At Jackson's Bay many white-fronted terns **(Sterna striata)** and red-billed gulls **(Larus novaehollandiae)** were seen. Moreporks were again heard at night.

Jackson's Bay, Dec. 31, 1946, to Big Bay, Jan. 7, 1947.—Riflemen, again numerous; fantails and bellbirds, numerous; grey warblers, tomtits and grey ducks, a few; paradise ducks, seen but in fewer numbers, one egg found; shining cuckoo, occasional calls; long-tailed cuckoo, frequently heard; pied and black oystercatchers, coast to Martin's Bay, about 10 pairs of each, also two birds believed to be hybrids, were black with white under wings and tail, three oystercatcher's eggs were found. blue or reef heron **(Demigretta sacra)**, about 4; black shags, 2; black-backed gulls **(Larus dominicanus)**, with young.

Big Bay to Martin's Bay, Jan. 8-9.—Gulls, black-backed; oystercatchers, a few black and pied; paradise ducks and tomtits, several; bellbirds, many; moreporks, calls at night; black swans **(Cygnus atratus)**, approximately 200 in one locality.

Martin's Bay to Hollyford, Jan. 10-15.—Tuis, plentiful; bellbirds, in numbers but less noticeable than the tuis; paradise and grey ducks, noted but not numerous; grey warblers, a few; parrakeets, again all identified were yellow-fronted; long-tailed cuckoo, calls heard repeatedly all the way; riflemen and pigeons, very plentiful; yellowheads **(Mohoua o. ochrocephala)** seen in small numbers in several localities; kakas, not seen until near Marion on Jan. 14, were not seen at all at Deadman's on the previous day; two years ago, kakas were common at Deadman's, but at time trampers with rifles were shooting them.

BIRDS OF KAINGAROA FOREST.

By H. R. Ryder, Kaingaroa.

During the course of my work in the Forestry Service, I have gathered the following notes on birds in the Kaingaroa Forest area:—

Black Shag **(Phalacrocorax carbo)**.—Parties of two, three and odd birds noticed along the Rangitaiki River, 15/12/47.

Bittern **(Botaurus poiciloptilus)**.—An odd one to be seen and heard at night in the swamps at Waireka, near the main Te Whaiti-Rotorua Road.

Grey Duck **(Anas poicilorhyncha)**.—Flock of 23 counted on a lagoon in the plantation near Hangowahine Lookout. Several birds were seen along the banks of the Rangitaiki River.

Bush Hawk **(Falco novaeseelandiae)**.—Odd ones to be seen throughout the forest. One made a din whenever we went near a tree on which it was perched. An examination revealed a nest in which were four eggs. I noticed with interest that beside the nest on the ground were the remains of the previous year's nest, still in good shape, giving one the impression that the birds return to nest in the same place each year.

Harrier **(Circus approximans)**.—Large numbers are to be seen in the forest. No doubt this can be explained by the large number of deer and pig carcases left lying about by the deer cullers and private hunters during the winter months.

Californian Quail **(Lophortyx californicus)**.—Flocks of as many as 30 can be seen practically anywhere in the forest.

Pukeko **(Porphyrio poliocephalus)**.—Odd birds and occasional parties of from five to six to be seen along the Rangitaiki River.

Pigeon **(Hemiphaga novaeseelandiae)**.—Odd birds about the edge of the native bush on the foothills of the Urewera Country, along the eastern boundary of the exotic plantation.

Shining cuckoo **(Chalcites lucidus)**.—First of season seen and heard October 2, 1947, at Waireka. At this time it is to be seen along the eastern boundary of the forest near Te Awa.

Long-tailed Cuckoo **(Eudynamis taitensis)**.—First seen at Te Awa on December 15, 1947. Two were seen and heard giving their long drawn-

out whistle on January 9, 1948, along the Wheao River on the eastern boundary.

Morepork **(Ninox novaeseelandiae)**.—Odd birds are to be heard calling from the **P. radiata** trees around the Kaingaroa village.

Kingfisher **(Halcyon sanctus)**.—Two seen sitting on a branch over a small stream at Murupara.

Pipit **(Anthus novaeseelandiae)**.—Plentiful throughout the forest, and to be seen anywhere in parties of two to six.

Fern Bird **(Bowdleria punctata)**.—Odd birds and occasionally two are to be seen and heard around the Pekepeke Lookout. The compartments here were originally planted in **P. radiata**, but through failure in growth and the heavy fern which resulted, it makes an ideal place for this bird.

Grey Warbler **(Pseudogerygone igata)**.—Quite numerous and can be found anywhere in the forest, sometimes in parties of five and six.

Pied Tit **(Petroica macrocephala toitoi)**.—It can be seen frequently in pairs and three's. One hen was found sitting on a nest containing five chicks.

Robin **(Miro australis)**.—From observations I have made, I feel inclined to say this bird is on the increase in certain compartments within a radius of five miles around Kaingaroa. Generally speaking, it is to be found only in the Oregon compartments, but I have found it in **P. muricata** compartments as well. In some Oregon compartments around Kaingaroa it is to be heard early in the morning singing quite lustily.

Fantail **(Rhipidura fuliginosa)**.—Occasionally two's and three's can be seen together and odd ones all over the forest.

Whitehead **(Mohoua ochrocephala albicilla)**.—Found in large numbers, as many as 20 or 30 together.

White-eye **(Zosterops lateralis)**.—During the winter this bird is seen in flocks of varying numbers ranging from two's and three's to as many as 60, feeding on grubs on the branches of the trees. During the summer months it becomes very scarce, although on December 29, 1947, a nest was found containing three chicks and two unhatched eggs.

Tui **(Prosthemadera novaeseelandiae.)**—Quite a number of tuis are to be found around the Pekepeka Lookout and as far down the Rangitaiki River as the Te Awa Camp. No doubt this can be explained by the number of fuchsia trees and native flowering shrubs growing in that area, and its closeness to the native forest.

Bellbird **(Anthornis melanura)**.—Quite plentiful; a number to be seen and heard in the gum trees growing around the village of Kaingaroa.

Greenfinch **(Chloris chloris)**.—About the end of February this bird is found in **P. radiata** compartments feeding on the seed of the trees.

Chaffinch **(Fringilla coelebs)**.—Plentiful all the year, particularly during March, April and May, when it is quite common to see flocks of 400 to 500.

Redpoll **(Carduelis cabaret)**.—During the summer months few of these birds are to be seen, but they come back in March, April and May, and can be seen in large numbers feeding in the firebreaks and in planted areas that have failed.

Goldfinch **(C. carduelis)**.—Appears to depart during the summer, but returns late in February, when it can be seen eating the seeds on the dried thistle heads, dandelion seed and various grass seeds.

House Sparrow **(Passer domesticus)**.—Large numbers are to be seen around the houses at Kaingaroa although their absence is noticeable in the forest itself.

Thrush **(Turdus ericetorum)**.—A number to be seen in the paddocks adjoining the village, around the houses, and throughout the forest.

Blackbirds **(T. merula).**—Plentiful everywhere in this area, and to be found at all times of the year.

Yellowhammer **(Emberiza citrinella).**—Occasional birds are seen around the camps where horses are still used, feeding on the chaff, etc.; otherwise it is very rare.

Hedge Sparrow **(Prunella modularis).**—A few to be seen in Kaingaroa. A nest was found on November 15, 1947 in the hedge surrounding my house. The nest contained three young chicks.

Skylark **(Alauda arvensis).**—A number to be found in all the surrounding paddocks in Kaingaroa and around the outlying camps, etc.

FOOD OF A MOREPORK.

By J. M. Cunningham, Masterton.

On March 20, 1944, the shrubbery at 39 Renall Street, Masterton, echoed all day with the alarm notes of many kinds of birds, the most vociferous of which were, of course, blackbirds **(Turdus merula).** The cause of the disturbance was not long in doubt: a morepork **(Ninox novaeseelandiae)** had taken up residence in the lower fork of a cabbage tree **(Cordyline australis)** and from then on until June, 1945, could be seen from below without difficulty at any time of day. The situation was such that sunlight often fell on the roosting bird. During the winter months, the bird, which left the roost about 5 p.m. (dusk) settled again a few minutes before 7 a.m., and immediately the other birds, just stirring at that time, discovered its presence, they collected round, scolding constantly. They soon grew tired of this, however, and the bird was never seen to be actually mobbed as has been described, or driven away by the blackbirds, thrushes **(Turdus ericetorum),** greenfinches **(Chloris chloris),** chaffinches **(Fringilla coelebs),** fantails **Rhipidura fuliginosa),** silvereyes **(Zosterops lateralis),** and warblers **(Pseudogerygone igata)** which appeared so disturbed. Later on, little notice was taken of it when roosting, though I have frequently seen a morepork being pursued by a blackbird after the roost was left at dusk. The bird did not seem to resent minor interference, peering down if the tree was touched, though it would fly to another part of the shrubbery if disturbed too much. It usually returned to the roost within a few minutes. Occasionally it roosted in an oak tree **(quercus),** and other roosts favoured by this and other birds were in pine trees **(Pinus insignis),** laurels **(Prunus laurocerasus),** Portugal laurels **(P. lustitanica)** and Lawsonianas **(Cupressus lawsoniana).** On some occasions two birds roosted together, their bodies touching.

The situation of the roost made it easy to catch the pellets which the bird ejected each day, and a number was collected in different months and sent to Professor B. J. Marples, who very kindly examined them. I am greatly indebted to him for the time he spent in identifying the constitution of these pellets.

Unfortunately the ejection of the pellet was never witnessed, but it usually took place some time between 12 and 5 p.m. (during the winter months), and as it was nearly always wet when found it seems likely that it was ejected about 3.30 to 4.30 p.m., or later, on most occasions. This time of ejection is in contrast to that for the little owl **(Athene noctua)** (Report of the Little Owl Food Inquiry, 1936-7, A. Hibbert-Ware, Brit. Birds, Vol. XXXI., Nos. 6, 7, 8) which appears to be after the night's feeding and before the bird becomes inert before daylight. The size of the pellet varied from the size of a pea to about 3 cm. long and 1 cm. thick, but the size did not seem to have any effect on the time of ejection.

Professor Marples states that a conspicuous feature was the presence in the pellets of a large number of coiled chitinous tubes often ending in an enlargement. Dr. J. T. Salmon, of the Dominion Museum, kindly confirmed that these were the remains of the vasa deferentia of moths.

In his opinion they belonged to one of the more primitive moths, probably **Hepialis virescens.** In the following, the number of tubes is halved and listed as so many moths. Most of the bird bones are clearly sparrow **(Passer domesticus)**, only the very fragmentary ones being queried, though they are probably sparrow also. One fragment is very small and resembles the bones of a thrush more than those of a sparrow.

The contents of the pellets were:—

May 23, 1944.—Eleven moths; bird fragments. May 25: 3 moths; fragments of beetles and birds. May 27: 13 moths, 1 spider, bird fragments, beak (?) fantail. May 28: 13 moths, 1 spider, 1 small caterpillar. May 29: 3 moths, bird fragments (?) sparrow, 1 large caterpillar. May 30: 5 moths, insect or spider fragments.

June 2—10 moths; 1 spider; 1 sparrow. June 5: 15 (at least) moths; 2 spiders; 1 large, 1 small beetle; 2 sparrows; 1 mouse; a large pellet with feathers. June 27: 8 moths; 1 spider; insect fragments. May 28: 2 moths; 1 mouse.

July 10.—2 moths; 1 sparrow.

August 23.—8 moths. August 30: 5 moths; 1 spider; 1 beetle; 1 sparrow. August 31: 9 moths; 2 spiders; 1 beetle **(Odontria spp.)**; 2 sparrows.

September 4.—22 moths; 1 sparrow; 8 white petals of a flower. Sept. 14: 3 moths; 2 spiders; 1 beetle; fragments (?) sparrow. Sept. 12: 23 moths; fragments (?) thrush. Sept. 24: 36 moths.

Late October and early November, fragments of at least three pellets: c. 50 moths; 1 spider 2 beetles **(1 Odontria spp.)**; 3 sparrows.

February 8, 1945.—8 moths; 4 beetles **(2 Odontria spp.)**; 1 sparrow.

March 6.—One moth; fragments (?) sparrow.

April 5.—Ten moths; 1 spider; 1 mouse. 8-9: 20 moths; 2 spiders. 16-17: 24 moths; 1 spider; fragments (?) sparrow.

May 20.—Ten moths; 1 spider; 1 beetle; 1 sparrow.

April and May.—Three (?) pellets: (a) 4 moths; 5 beetles (2 **Odontria spp.**); fragments bone. (b) 29 moths; 3 beetles (1 **Odontria spp.**). (c), 7 moths; 1 spider; 2 beetles; fragments of bird.

A perusal of the above will show that moths were a most important item in the diet of this morepork, some being recorded in every pellet. Spiders and beetles were of lesser importance. Other invertebrates, such as woodlice, slugs, earth worms, caterpillars, earwigs and millepedes (all but the last two being common in the locality) were almost non-existent, but it is of some interest to note the rather large number of bird remains in the pellets at all times of the year. Miss Hibbert-Ware, in England, and Professor Marples (A Study of the Little Owl **(Athene noctua)** in New Zealand, Trans. Royal Soc. of N.Z., Vol 72, pt. 3, 1942) in New Zealand, found that the little owl, the only other owl now commonly found in this country, ate birds chiefly in spring and summer. This morepork may have had a particular preference for birds, of course, but in any case there is no evidence to show that the presence of the moreporks affected the local bird population in any degree. Though the total population which includes a majority of such birds as blackbirds, thrushes and sparrows, certainly declined somewhat during the period; this is attributed to heavy clearance of the tangled growth of the shrubs destroying cover and nesting areas, and there has been no increase since the moreporks' departure. In a neighbouring district, where moreporks were also conspicuous, there appeared to be no diminution in the numbers of the bird population. Fantails, warblers and silvereyes nesting successfully in close proximity to the roost proved there is little disturbance of these species. I have, however, seen a morepork kill canaries through the wires of an aviary, and Mr. E. O. Welch informs me that a morepork, flying down, nearly snatched a silvereye out of his hands as he was placing a ring on its leg. A glance through available literature tends to

show that the morepork will apparently eat almost any small living creature, perhaps according to availability. The catching of insects on the wing is well known, and perhaps this may explain the smaller number of non-flying vertebrates in the pellets. This may possibly prove, on further investigation, to be a significant difference in the diet, and therefore the ecology, of the bird and the little owl (probably spreading in New Zealand), which Miss Hibbert-Ware and Professor Marples have shown to be mainly a ground feeder.

BIRDS IN THE TARARUA RANGES

By A. G. Bagnall, Eastbourne.

The following observations were made during a four-day trip through the Tararua Range from Otaki Forks to Kaitoke by the Main Range from January 1, 1948. The through nature of the trip prevented more detailed notes being made. From the Forks the route taken was the Waitatapia-Saddle Creek Track to the Otaki-Waitewaewae junction, Shoulder Knob and the main range south of Crawford to Maungahuka, the Hector River, Neill, Cone and the Tauherenikau Valley. The weather was fine and windless throughout and bird life seemed a little more plentiful than on other occasions.

Pigeons **(Hemiphaga novaeseelandiae)** were seen in the Waitatapia, Upper Otaki and Tauherenikau valleys (not more than three at one time). Grey warblers **(Pseudogerygone igata)** and shining cuckoos **(Chalcites lucidus)** were heard (former on bush line at 3,000 feet) but not common. Expected, but not seen or heard were the whitehead **(Mohoua o. albicilla)** and long-tailed cuckoo **(Eudynamis taitensis)**. Birds especially noted were:—

Kaka **(Nestor meridionalis)**.—Two at end of tramway, Waitatapia; two c. 3,000 feet on Cone and one half-way down Tauherenikau Valley.

Parrakeet **(Cyanoramphus spp.)**—Four in bush saddle north of Kahiwiroa, 3,300 feet; four on Cone, c. 3,000 feet.

Rifleman **(Acanthisitta chloris)**.—Shoulder Knob, Maungahuka, Neill (six together at 3,600 feet). The most common bird seen or heard on trip.

Pied Tit **(Petroica macrocephala toitoi)**.—One on Cone and one in Tauherenikau Valley. Not common by comparison with Wellington East Harbour bush.

Pipit **(Anthus novaeseelandiae)**.—Several birds put up on open tops, 3,500 feet.

Fantail **(Rhipidura fuliginosa)**.—Young bird seen on ascent of Neill and pair in Tauherenikau.

Bellbird **(Anthornis melanura)**—Occasional bird heard, one approaching to within 20 yards on Neill scrub line.

BIRDS ON A TWELVE-MILE WALK.—On July 22, 1947, Mrs. P. L. Moore and Miss A. S. Edmond, members of the Dunedin Naturalists' Field Club, walked about twelve miles from Port Chalmers via the western slopes of Mopanui to Waitati, and back to Dunedin by the Leith Valley Road. Most of the way led through or near bush or manuka. The following bird life was recorded:—Grey warbler **(Pseudogerygone igata)**, 10; yellow-breasted tit **(Petroica m. macrocephala)**, 15; brown creepers **(Finschia novaeseelandiae)**, about 20 in little flocks near together about Orakanui Stream, Waitati; fantail **(Rhipidura fuliginosa)** 15 pied and five black; bellbird **(Anthornis melanura)**, five; pigeon **(Hemiphaga novaeseelandiae)**, two, Orakanui Stream, Waitati; harrier **(Circus approximans)**, six; pipit **(Anthus novaeseelandiae)**, three on road from Port Chalmers to Mopanui; goldfinch **(Carduelis carduelis)**, about 100 on the slopes of Mopanui.—(Dunedin Naturalists' Field Club.)

BIRD LIFE NEAR LAKE HAUROKO, SOUTHLAND.

By Dunedin Naturalists' Field Club.

On October 25 and 26, 1947, three members of the Dunedin Naturalists' Field Club were in a small party that visited Lake Hauroko, Southland. Mrs. P. L. Moore, a member both of the O.S.N.Z. and the D.N.F.C., kept bird records which she passed on to the bird recorder of the D.N.F.C. and from which this report has been compiled.

From the end of the road in the Lillburn Valley there is a nine miles' walk to the lake. The first five miles of the track passes through more or less open country with scattered patches of scrub, but the last four miles is through beech forest. Most of the bird life was noted when the party stopped for rests or to "boil the billy."

In the Lillburn Valley and during the nine-mile walk to Lake Hauroko, twenty harriers **(Circus approximans)** were counted. At a stream which is crossed at the entrance to the forest, two kingfishers **(Halcyon sanctus)** were noted.

Birds seen in the forest were: Five yellow-breasted tits **(Petroica m. macrocephala)**, one black fantail **(Rhipidura fuliginosa)**, three robins **(Miro australis)**, one pigeon **(Hemiphaga novaeseelandiae)**, and at the lake two keas **(Nestor notabilis)**. Birds heard but not seen were the rifleman **(Acanthisitta chloris)**, grey warbler **(Pseudogerygone igata)**, bellbird **(Anthornis melanura)** and kaka **(Nestor meridionalis)**.

Three blackbirds **(Turdus merula)** were the only introduced birds recorded during the walk.

NOTES ON BLACK-BACKED GULL.

By E. W. Hursthouse, Mahina Bay.

As the common and majestic black-backed gull **(Larus dominicanus)** does not appear to have received much attention the following notes may be of interest and induce others to make a study of this bird. My notes, based on observations extending over several years, are confined almost entirely to two pair—permanent residents of about 100 yards of sandy and rocky beach opposite my home in Mahina Bay. This bay is on the eastern side of Port Nicholson, Wellington. Other birds are about when fishermen are netting or when food is thrown out, otherwise only these two pairs remain.

The cock birds of these two pairs, in a peculiar and interesting action (a similar action has been noted on other beaches) stand opposite each other at a distance of 12 to 18 inches, pick up a pebble or piece of seaweed, cast it down, approach and retire in the manner of a challenge. Of the many times I have seen this, not once has the challenge been taken up. When first noted it was during the courting period and I surmised that it was in some way connected with courtship, but as this action occurs at any time of the year it has the appearance of some form of game. It is not confined to the shore as I have seen it happening well out in the water where the birds dip their bills in the water.

The love-making, as with many other birds, is preceded by much "billing" and "cooing" but in actual coition it may be different for in this case, after crossing bills several times, the hen stands firmly and the cock bird mounts her. In one case a bird remained there for the best part of one minute.

The nearest breeding colony in this district, as far as I am aware, is that in Fraser Bay, near Baring Lighthouse, some ten miles walk from here, or a three-mile walk after a motor trip of some 20 miles down the Wainui Road. I visited this locality many years ago in February and saw a number of young birds.

When the young birds are brought here I have been astonished at the total indifference of the parent bird to feeding them, for on nearly every

occasion when appealed to by the young bird for food the adult quietly walked away. Only on two occasions have I noted a bird giving any food and that I am certain was under protest. In trying to find food, the young bird is forced to experiment, for it will pick up anything that looks likely and in most cases discards it. At what age the young birds begin to recognise food I am unable to say.

As far as I can gather it is not until the second year that they attempt to learn the trick of gathering a shellfish and dropping it on the rocks, as on one occasion only have I seen a young bird pick up a small mussel, fly high, drop it in the water and fly down immediately to find nothing and rest on the water. I wonder what its thoughts were. It would seem that the young are not taught by the parents.

These birds are a constant source of interest and to see a good fight is a thrill. One fight I recall nearly resulted in the death of a bird. Two were fighting in the water near the rocks when one got the better of the other and kept it under water by diving at it, until, thinking this not very sporting I disturbed them. The half-drowned bird took some time to recover before flying away.

Occasionally in the late summer evening a number of birds may be seen high up flying in a large circle, the number gradually being reduced as each bird leaves for its night quarters.

SEA-BIRDS AT BANKS PENINSULA.

By Charles Lindsay, Wellington.

While on a yachting cruise to Akaroa from Lyttelton during late December, 1947, and early January, 1948, opportunity offered to observe marine birds and the following notes are the result:—

White-flippered Penguin **(Eudyptula albosignata).**—Only four penguins, almost certainly this species, were observed, two in Akaroa and two off the south coast of the peninsula near Pompey's Pillar. On one warm, dark night in Akaroa quite a number were heard calling to each other.

Giant Petrel **(Macronectes giganteus).**—This bird was scarce, two being recorded on the south side of the peninsula on January 9, and one off the north coast on the 10th.

Flesh-footed Shearwater **(Puffinus carneipes).**—Three birds believed to be this species were seen off Sleepy Bay on January 9. They were observed in flight from a short distance, when the flesh-coloured webs and light-coloured mandible were most noticeable. Banks Peninsula is south of the normal range of this bird, but specimens have been recorded as far south as Kaikoura.

Sooty Shearwater **(Puffinus griseus).**—Nine mutton birds were noted on January 9 between Akaroa Head and East Head.

Fluttering Shearwater **(Puffinus gavia).**—About 20 individuals were counted on January 9 between Akaroa Head and East Head.

White-capped Mollymawk **(Thalassarche cauta).**—Eight mollymawks of this species were recorded on January 9 on the south coast and one off Okain's Bay on the northern side, on January 10.

Spotted Shag **(Stictocarbo punctatus).**—This was the commonest bird observed round the peninsula, but it is off the northern side where it is present in large numbers. On December 26 a large number was observed in close formation on the water. In extent this group of birds measured about 400 yards long by 50 to 60 yards wide: the number of birds must have been 3,000. At the time weather conditions were severe, with a north-west gale and rough seas. The birds appeared to be just resting, as none was noticed to dive in search of fish. On January 10, in fine weather, large numbers of this shag were observed in several groups from Okain's Bay to Lyttelton Heads; many were busy catching fish. A rough census estimated that 4000 to 5000 birds were present. On the south side of the peninsula only small numbers were noted, with several small breeding colonies near Pompey's Pillar. In Akaroa

Harbour a small nesting colony of five or six nests was observed at the end of Onawe Peninsula. The nests were about ten feet above the water. This is unusual, as a more inaccessible site normally is preferred.

Gannet **(Moris serrator)**.—Although of infrequent occurrence south of Cook Strait, a lone individual was seen in flight off Port Levy on January 10.

White-fronted Tern **(Sterna striata)**.—Except at the Sail Rocks, near Little Akaloa, where there was a nesting colony of about 80 birds, few specimens were seen, only four being noted on Akaroa Harbour.

Black-backed Gull **(Larus dominicanus)**.—This gull was seen in small numbers only round the coast of Banks Peninsula. In Akaroa Harbour about 20 were counted.

Red-billed Gull **(Larus novaehollandiae)**.—About 30 were seen in Akaroa Harbour; present in small numbers round the coast between Akaroa and Lyttelton. A breeding colony of about 100 birds was observed at the entrance to Port Levy.

Black-billed Gull **(Larus bulleri)**.—One individual was seen with a small flock of red-billed gulls in Lyttelton Harbour.

Reef Heron **(Demigretta sacra)**.—One heron was seen in flight near Onawe Peninsula, Akaroa Harbour, on January 7.

Mute Swan **(Cygnus olor)**.—One white swan exists in Akaroa Harbour, this being the last of six or seven which formerly lived there in a semi-wild state. The existing bird is accustomed to being fed from small craft, as almost daily it visited yachts at anchor, and in most cases was successful in getting bread and other scraps of food.

A noticeable feature of the distribution of birds off the coasts of Banks Peninsula is the fact that, as far as my limited observations go, the petrels are concentrated on the southern side, while the spotted shag is present in large numbers on the northern side. The shags have their nesting sites on the cliffs, thus accounting for their presence off this northern shore; but in the case of the petrels it seems that the southern side facing the great southern ocean is preferred, as conditions there more closely resemble the open sea, which is the home of most petrels.

CROMWELL BIRD DIARY.

By J. Middleditch, Cromwell.

A pair of banded dotterels **(Charadrius bicinctus)** appeared on the Cromwell Flats on 13/8/47 in a locality that had been used for nesting the previous year. Another bird seen on the same day, about a mile from the first, may have been one of the birds seen earlier.

A pair of pied oystercatchers **(Haematopus finschi)** seen on the morning of 14/8/47 were gone at midday.

18/8/47.—Two dotterels which appeared on 13/8/47 did not stay and have now disappeared.

1/9/47.—A native pigeon **(Hemiphaga novaeseelandiae)** has visited the willow trees on the river bank at Cromwell. It arrived early in August and is feeding on the young buds of the Chinese creepers (local name). I believe a pigeon (possibly the same one) visits this locality every spring.

7/9/47.—Saw several pairs of banded dotterels on the flats. These may be the birds reported earlier.

24/9/47.—Saw a pair of pied stilts **(Himantopus himantopus)** beside an irrigation ditch; new arrivals.

4/10/47.—Banded dotterels seen again in the same place where I saw them on 18/8/47. These have just arrived as I have watched this area daily since the birds departed from there between 13/8/47 and 18/8/47.

4/10/47.—Saw a pair of pied oystercatchers on the Sugar Loaf. This is on a much higher level than I usually see them.

16/10/47.—A pair of banded dotterels were seen with two chicks in the area where birds were reported on 7/9/47.

25/10/47.—Pied oystercatcher on nest with two eggs about 30 yards from the main road. I saw this bird sitting two days ago when passing but did not investigate; only one bird was visible.

31/10/47.—Visited the breeding dotterels. The chicks have grown considerably but still have much of their down left. I had much difficulty in catching one. The parent bird came within two yards of me while I was holding the young one.

2/11/47.—Visited the oystercatcher's nest. I have not yet seen the male (assuming that the sitting bird is the female).

3/11/47.—Visited the oystercatcher at night but there is no sign of the other bird.

5/11/47.—Located another oystercatcher about 500 yards from the nest; it does not seem to have a nest of its own.

9/11/47.—Visited the black-billed gulls **(Larus bulleri)** that I reported breeding last spring. The nesting colony has been shifted slightly. I counted 33 nests and many young birds were on foot. They were in a variety of sizes. There were 15 eggs left. Many nests had one egg only. There seemed to be two different colours of eggs; some were more green and did not have so many spots.

9/11/47.—Found a young pipit **(Anthus novaeseelandiae)** in a hole in the ground (not its nest). It was fully feathered but had signs of down on its head. It was quite healthy and seemed to be sheltering from the wind.

10/11/47.—The pied oystercatcher visited on 2/11/47 has now two young ones, hatched out this morning. The presumed male bird has not appeared yet.

10/11/47 (evening).—The other bird has appeared beside the nest, and the young ones are running about.

12/11/47.—The oystercatchers and chicks have disappeared.

19/11/47.—I have located the oystercatchers and one young one about 500 yards from the nesting place in the locality where I reported seeing the second bird on 5/11/47.

25/11/47.—Saw a pair of dotterels and young where the birds were reported on 4/10/47. The young ones are much the same age as the last one reported on 31/10/47.

19/12/47.—Visited the banded dotterels today. The young ones seem to be able to fly quite well.

20/12/47.—This morning a bird which I believe to be a broad-billed prion **(Pachyptila vittata)** appeared in the dredge pond beside the Austral New Zealand Mining Co.'s dredge. It seemed very tame and quite fit. The shift men fed it biscuits and took it on board the dredge. Its beak was 1.3 inches long and .8 inches wide at its maximum point. The bird seemed to like dark corners. It wandered about my desk pecking at anything coloured red—the labels on the ink bottles and a stump of red pencil. I tried to feed it some slaters but although it seemed keen enough it did not seem to be able to pick them up from the flat desk. It climbed up on my arm using its beak to help it, much the same as a parrot does, but more as a hook than a grip. I returned the prion to the river and it splashed about, apparently enjoying itself, and then crept into a hole in the bank, where I left it.

21/12/47.—The prion disappeared during the night. I hope it reached the sea.

1/1/48.—The banded dotterels seem to have left the locality where I have been watching their nesting. I can see no sign now of the pied oystercatchers and young.

4/1/48.—Saw a single banded dotterel in the Lindus Valley. Found in the Lindus Valley a young pied stilt that had apparently been killed by a stoat.

15/1/48.—At midday today after a dull morning and a brisk shower of rain two pied fantails **(Rhipidura fuliginosa)** appeared in my garden. I do not usually see fantails until after the frosts start.

HABITS OF STARLINGS.

By H. L. Secker, Wellington.

During 1946-47 a study of the starling **(Sturnus vulgaris)** was made at Karori, Wellington, and comparisons made with the habits of English birds. No change in behaviour except adaption to local condition was noted. An absence of low country has caused this species to forage on windy hillsides above 600 feet. There is a persistent dislike of altitudes, however, as birds which crossed high ground in summer at 800 feet alighted on the first tree available. Observations indicated that narrow gullies below 600 feet were disliked except when the elder **(Sambucus nigra)** was fruiting.

As most feeding areas in England are in the lowlands and likewise the roosts, the successful acclimatisation of starlings at Wellington, Waiouru and elsewhere, where they breed, needs explanation.

Reference was made recently to roosting behaviour, but in future breeding areas this was found to be a tendency only. On August 3, 1946, several starlings were visible before nightfall in a plantation, and on July 19, 1947, a few furtive birds remained, but none was present on August 2, although several were seen at dusk about houses. Possibly these were birds with habits of roosting singly but song heard indistinctly because of mechanical noises was in too much volume for this explanation. Mating may begin at this period, for sexual chases were seen on July 9, 1947, and August 3, 1946. It appeared that birds advanced sexually tended to remain in their anticipated territories, and scanty evidence suggested that birds preferring to roost alone in holes occupied them in the breeding season.

Nesting activity began in the plantation on September 27, when starlings were heard at sunset. A single bird hurtled at dusk about the trees and another a few minutes earlier glided in circles making a grating noise before it entered a pine where a second was visible. On October 11 there were no gatherings but two colonies of mated starlings existed, in one case with nests fifteen metres apart. Both sexes were employed in nest construction, ceasing work at 1825 when song increased in volume but declined rapidly at dusk. Unemployed birds were present. Three were observed in chase and at 18.28 there was excitement from two trios. A single bird with material was pursued by a pair, after which it landed on a leading conifer shoot which concealed a nest.

By late November breeding was over except for occasional reconditioning of nests. During these weeks the social instinct did not decline, and numbers seeking food for their young fossicked together in open spaces.

One writer records that starlings depart in a tight flock for their roost with brief halts on the way. Local observations proved that this was true in built-up areas where birds moved among scattered trees until a flock was formed at a favoured point. On June 26, 1947, a compact flock left the plantation and others from Makara were seen until September 27, when groups of 25 passed overhead. These parties passed between hills more than 1000 feet in height at an altitude of 800 feet. All flew rapidly along the contours.

In July starlings from the plantation departed alone or in unconsolidated groups which later united with others to form loose flocks of under 100 birds. A tendency developed to shun contours and to circle restlessly over trees or buildings which recalled migrating flights of swifts **(Apus apus)** seen late in the northern spring. Parties lost sense of direction until obscure forces redirected them to the roost. More leisurely departure occurred with frequent return to assembly perches. On September 27 a bird returning in this way was plucked toward the roost by violent force, but managed to control the emotion and flew back to the pines.

Social roosting continued when breeding commenced. Several pairs departed on October 18 and numbers were greater on November 1, one bird finding difficulty in leaving the plantation. The habit was

persistent throughout November and December, but whether socially roosting birds were mated males or young of the previous season was unknown.

Authorities state that social roosting recommences late in June in southern England. Summer and early autumn roosts are also described by Marples (1934) starlings occupying reed beds or deciduous trees and deserting them before winter. He notes that non-breeding starlings occupy a roost throughout the year.

At Karori on December 6 birds remained at night about their late breeding area in the plantation or flew elsewhere. Two kilometres distant a summer roost existed in late November. Many juveniles were absent from the suburb but had probably retired to Makara where they were abundant on January 2, 1948.

Small groups of non-breeding birds, usually about five, had increased to fifty by November 23 and 30.

Observations on summer roosts are not precisely identical with English records but the writer believes this is caused by the absence of favourable vegetation in the area.

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REVIEWS.

New Zealand Bird Life, by E. G. Turbott; A. H. & A. W. Reed. (101 pages, including 49 illustrations). Price, 17/6.

Attractively printed on art paper, this volume contains authoritative information concerning a number of native birds, with more or less incidental reference to two or three introduced species. Written in popular style, it is intended to interest more particularly youthful readers, though its pages can well be perused and enjoyed by the more mature. Miss Nancy Wilson contributes a fitting preface. A feature of the volume is its profusion of photographs, many of which are the work of Major G. A. Buddle. The photographs generally are of an excellent standard, but a few of stuffed specimens do not stand comparison with those of wild birds. Major Buddle's fine studies testify to his patience and painstaking work in photographing New Zealand's bird life. Perhaps some space could have been devoted to common, introduced birds met with in garden and countryside and captions provided for the photographs introducing the four sections of the book. The volume as a whole is a very fine production and should grace the shelves of all bird lovers.—R.H.D.S.

The Gannet on Cape Kidnappers, by K. A. Wodzicki and C. P. McMeekan; Trans. Royal Soc. of N.Z., Vol. 76, pt. 3, p.p. 429-452, July, 1947.

In view of the gannet census being conducted by the Ornithological Society of New Zealand this paper is of particular interest. In an introductory section is included a table of the breeding colonies of the gannet in N.Z., in which, based on the observations of various authorities, the estimated total is given as 11,777 pairs, though this may not be very accurate as some of the estimates were made over 20 years ago. Dealing more particularly with the Cape Kidnappers colony, the authors give a brief historical survey, a general description of the gannetry, evidence of an extension of the breeding areas to three different colonies in comparatively recent years, a population census (in 1945, 5674 birds), observations on breeding habits and on experiments to study psychological reactions of breeding birds. The authors reached the conclusion that in the 1945-46 season "no more than 16 per cent. of their total numbers have been reared to the stage that the chicks are able to leave

the rock." Notes on the bird life of the area are included and an appendix gives a list of egg measurements. There are a number of illustrations.—(R.H.D.S.)

Notes on the Bird Life of the Porangahau District, N.Z., by John H. Cunningham and K. Wodzicki; Emu, Vol. 47, 177-128; Jan., 1948.

The Porangahau Estuary and its association with some of the field observations of the late Mr. H. Guthrie-Smith make this area of more than passing interest. Following on a general description of the area, the authors give a systematic list of the species recorded in the district. It is difficult to follow the reasoning of the authors in their remarks about the North Island and the South Island oystercatchers. After quoting such an eminent authority as Falla, who includes the east coast of the North Island as within the range of **H. unicolor,** they dismiss all black-plumaged birds as **H. reischeki,** passing over Falla's statement and the fact that it is considered impossible to distinguish in the field wholly black **reischeki** from **unicolor.** One of the most interesting records concerning the area is the breeding of the black-billed gull (in company with the red-billed gull) in a district not hitherto known as a breeding place for this species. Some of the conclusions arrived at differ from those of Fleming (published in the second annual report of the Ornithological Society) and it appears that some of Fleming's observations have been overlooked. These considerations apart, the paper gives much interesting information of the bird life of the district under review.—(R.H.D.S.)

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A supplementary paper to one entitled "Courtship and Allied Behaviour in Penguins" (Emu, 1945, 305-323 and 37-54) relates to a study of a sedentary species, **Megadyptes,** in which the author's evidence and observations are based on ringed birds.

Notes on the Breeding Cycle of the Thrush and Blackbird in N.Z., by P. C. Bull; Emu, Vol 46 (1946) 198-208.

This study was made in a dairy farming area at Mangere, near Auckland, and discusses period of breeding, including winter laying of thrush, size of clutch, fertility of eggs, survival in the nest and population density, with a comparison between the two species.

Method of Silvereye Trapping in N.Z., by J. M. Cunningham. Emu, Vol. 46 (1946), 209-214.

Reprints of this paper have been distributed to members.

Sooty Shearwater in Tasmania, by M. S. R. Sharland. Emu, Vol. 46 (1946) 228-229.

Records Tasman Island (S.E. tip of Tasmania) as a breeding site of this species.

A Note on the Australian Tree Martin in N.Z., by W. J. Phillipps. Emu, Vol 47 (1947), 116.

Records the occurrence of **Hylochelidon nigricans** in Blenheim district on four occasions in last ten years, a bird being shot on 29/3/47.

Field Notes on Waders in South-West Pacific, with Special Reference to the Russell Islands, by P. C. Bull. Emu; Vol. 47 (1948), 165-176.

Gives observations made during a year's war service in this area. Numbers and species observed indicate, says the author, that Solomons are a short backwater from main stream of Northern Hemisphere migrants moving south to Australia. Migrants to and from New Zealand apparently travel further east.

Sooty Shearwater in Australia, by J. A. Kearst and A. R. McGill. Emu; Vol. 47 (1948), 199-202.

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