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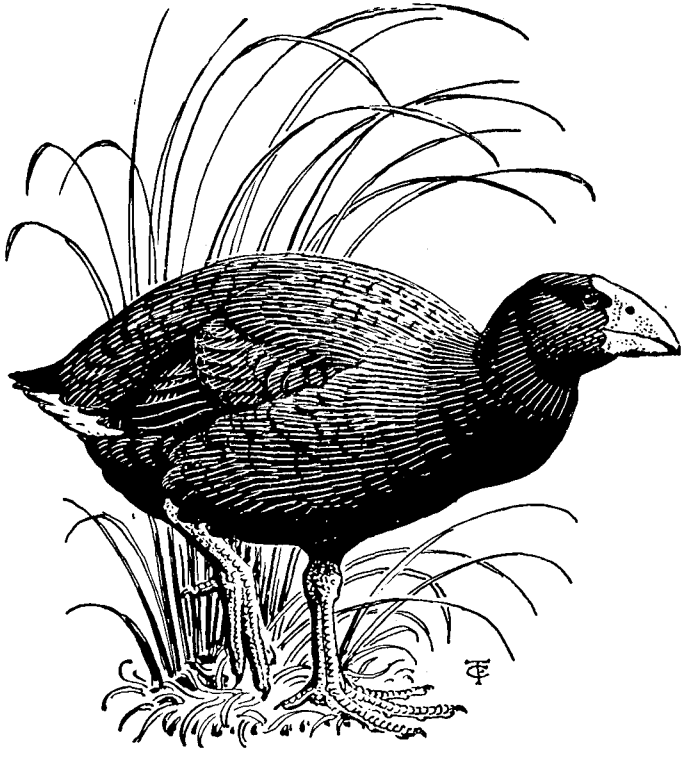
NOTORNIS



BULLETIN OF THE ORNITHOLOGICAL SOCIETY
OF NEW ZEALAND.

PUBLISHED QUARTERLY.

NOTORNIS

In continuation of New Zealand Bird Notes.

Bulletin of the Ornithological Society of New Zealand.

(Incorporated.)

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CONTENTS.

NEW SECRETARY.—The resignation of the hon. secretary, Mr. J. M. Cunningham, which was announced at the last annual meeting, takes effect on October 1. In his place, the council has appointed Mr. F. M. Brookfield, 22 Benbow Street, St. Heliers, Auckland E.1. Mr. Cunningham wishes to thank members of the society for their help and encouragement since his election on May 25, 1946, and expresses the hope that his successor will meet with the same ready spirit of co-operation in society matters. Members are reminded that all matters relating to subscriptions should be addressed to the hon. treasurer, Miss N. Macdonald, "Keppoch Lodge," Sale Street, Howick, Auckland.

CLASSIFIED NOTES.—Members are reminded that classified notes for the January issue must be in the hands of the editor not later than October 16. They should be forwarded per medium of district organisers.

KOKAKO NEST, 1952.

By H. R. McKenzie, Clevedon.

A pair of North Island kokako (**Callaeas cinerea wilsoni**) was found building a nest at Moumoukai on December 2 1952, by a party of O.S.N.Z. members: J. D. Mitchell, F. G. Milner and the writer. The site was only seventy yards or so from that of the nest found on Dec. 2, 1950 ("Breeding of Kokako," Notornis, Vol. 4, No. 4, p. 70), so was probably selected by the same pair. Twenty-eight feet up in a tawa tree the nest was precariously placed between some twigs on an upright side-branch and a clump of astelia on the main trunk. F. Murray later wired the branch to the trunk for safety. Again the birds were not shy. During our watching the female carried and arranged the nesting material, making visits as follows: 6.3 a.m., 6.10, 6.15, 6.18, 6.23, 6.26.5, 6.34, 6.41.5. The male was not seen to help with the building. Twice he fed his mate while she was busy at the nest. The food on one occasion was a green berry. He sang only a little at times. The mewing note was heard rather frequently. No attempt was made to view the nest at this early stage for fear of disturbing the birds.

The next visit was made by members: J. W. St. Paul, F. M. and H.R.McK., on Dec. 6, at 7.50 a.m. F.M. made the difficult climb to the nest and found the body of it fully formed, though with only a small quantity of punga scale as yet in the bottom of the cup. We concluded that it was not complete. The birds were not seen. The nest tree grew in a tangle of other trees with much kie-kie and supplejack, a veritable harbour for rats. It was not practicable to tin the trunk so we set traps a few yards away. Frequent visits were precluded by stormy weather, the long distance and the very difficult road, so we planned to return on Dec. 10, thinking that the nest would be finished by then.

A severe storm on Dec. 10 delayed the next visit until Dec. 11th, when F.G.M., F.M. and H.R.McK. arrived at 6.25 p.m. F.M. climbed up and found the bird on the nest. She regarded him calmly at 12 to 18 inches, then left the nest for a little, revealing three eggs. She returned and sat again while F.M. was only two feet distant. We had been wrong in our conclusions of Dec. 6. No further lining had been added, so the nest was really complete on that date. The eggs had been laid between the morning of Dec. 6 and the evening of Dec. 11. Although pleased to find the eggs we were deeply disappointed at our failure to obtain a laying record. On this visit of twenty minutes the male was not seen. The traps had accounted for a rat and a mouse.

The facilitate the watching of the nest, the versatile F.M. now constructed a light "Jacob's Ladder," and this he fixed to a stout branch a few feet below the nest. The lower part of it was rolled up when not in use. I was, of course, very anxious to see the eggs. F.M. tied a rope under my arms, hitched the other end round a branch at the top and kept it taut as his bulky charge made a toilsome and wobbly ascent of the ladder. "We do some mad things," he said feelingly. With the aid of a mirror on a stick I viewed the precious eggs, so rarely seen these days by man.

It was estimated that the hatching would occur between Christmas and New Year, so plans were made for a close watch by several members. On Dec. 26, Rev. R. J. Fenton made the sad discovery of the eggs having been taken. A stoat which had been newly killed by one of the traps was probably the culprit. It may well be that the breeding losses of the kokako occasioned by vermin are 90% or more.

Some apprehension was felt in case the baited traps may have attracted vermin. It was satisfying, therefore, to have from such an authority as member Logan Bell, Senior Field Officer, Wild Life Division, Internal Affairs Dept., the assurance that in his opinion the right course had been adopted. It is hoped that intensive trapping in the area will make for future nesting success for the kokako.

NOTES ON THE OCCURRENCE OF THE BELLBIRD IN NORTH AUCKLAND.

By E. G. Turbott, Auckland Museum.

The effect of settlement on the bellbird (**Anthornis melanura**) has attracted interest since it suddenly declined almost to extinction, at least in the North Island, in the 1860's. Buller's "History of the Birds of New Zealand" (Ist and 2nd editions, and Supplement: 1873, 1888, 1905) contains much interesting information at the time when numbers were at their lowest, and discussion of the theories advanced in explanation of the decline. Myers, in 1923, in his two excellent papers on the status of New Zealand's bird life, was able to point to a number of records indicating that the bellbird was then established or increasing in many localities in the North Island. In one paper this author (Myers, 1923b) summarises evidence on the decline and marked resurgence of the bellbird. A further statement in the "New Zealand Journal of Agriculture" (Myers, 1923a) sums up the position, stating that the bellbird is "one of those native birds which, after showing a great decline in numbers, are now more than holding their own," and continues: "The bellbird, however, is much less familiar to most people than the tui, partly owing to its quite recent return to settled districts, and largely, no doubt, to its smaller size and less conspicuous colour. . . What has been said of the good work done by the tui in the bush applies almost equally well to that of the bellbird, while in many **Eucalyptus**-planted districts the latter is the commoner bird of the two." Two other sources of brief comment on the bellbird's change of status are Stead's "Life Histories of New Zealand Birds" (1932, p. 145), and the "New Zealand Forest-inhabiting Birds Album" of the Forest & Bird Protection Society of New Zealand.

I have not made the attempt here to assess the bellbird's change of status from locality to locality over the whole of the North Island, but a survey along these lines of the early literature would be of very considerable interest. It is evident from the early accounts that, in at least the more accessible parts of the North Island, the decrease was marked and rather sudden, and all the more apparent as the bird had previously been extremely abundant. It seems probable, however, that it remained in certain districts, even if in reduced numbers. Thus Buller (1878; 1888, p. 87) was informed by Captain Gilbert Mair that between about 1870-80 he had not met with it at all, "except on the island of Mokoia" (in Lake Rotorua), in "a tract of manuka bush covering about a thousand acres of land at the foot of Mt. Edgecumbe," and "in the high scrub at Waitahanui about ten miles from Taupo."

In the South Island a less marked decrease was reported, and it appears to have remained fairly plentiful in certain areas. In Canterbury, according to Stead (1932), bellbirds reached their lowest ebb "around 1910, since when they have increased considerably, being now permanent residents, or regular autumn and winter visitors to districts from which they had been absent for years."

In the works of Buller and Myers, referred to above, there is a good deal of interesting discussion of factors thought to be responsible for the decline. Briefly, it was realised that the decrease was so sudden and well-marked that there must be some explanation other than the early stages of firing and clearing of the bush. The arguments referred mainly to the effect respectively of competition by the newly-introduced honey-bee, and of the destructive effect of rats.* (A difficulty of attempting any explanation was, of course, that the decrease was much more marked in the North than in the South Island, although conditions likely to affect the numbers of bellbirds in both islands were apparently the same.)

During the period of its decrease, the bellbird remained common on various islands offshore (Buller mentions Little Barrier, the Poor Knights

* Buller finally discounts the effect of rats because he found both rats and bellbirds common in 1893 on Motutaiko Island (Lake Taupo). If these were Maori rats (**Rattus exulans**) they would probably have had little effect upon the birds of the island, but, unfortunately, nothing is known of their identity.

and Kapiti); and it is interesting that Buller recorded it as still abundant on Mokoia Island, in Lake Rotorua, and (Buller: 1888; 1895; 1905) on Motutaiko Isand, in Lake Taupo. As the factors causing decrease were evidently absent on these islands, it is of interest that on some offshore islands the bellbird has proved to be capable of existing under conditions of great modification. Thus on Motuihe Island, only 10 miles from Auckland in the Hauraki Gulf, it lives mainly in groves of tall pohutukawa (**Metrosideros excelsa**) scattered over farmland, and with practically no undergrowth.* On Great Island, of the Three Kings group, it was the only species of bird to remain plentiful throughout the period of modification, when the whole vegetation was impoverished because of the presence of goats (Turbott, 1948, and Turbott and Buddle, 1948). A further observation of interest is that on Great Barrier Island, the large outlier of the Hauraki Gulf, the bellbird although abundant in 1868 according to Hutton, appeared to be absent when Reischek visited the island ten years later (Buller, 1888).

Although the above discussions did not give rise to any satisfactory explanation of the bellbird's decrease, the early observations and discussions will continue to be of interest in relation to recent changes in status. As more information is obtained it will be possible for these early records to be re-assessed.

From the mainland of North Auckland the bellbird has been quite absent since 1850-60, although there have been occasional records probably of individuals which have strayed from the neighbouring islands. It has not occurred in the Waitakere Ranges, immediately west of Auckland, apparently since the same period. In 1873, in the "History of the Birds of New Zealand" (1st edition), Buller stated that: "In the Waikato it is comparatively scarce, on the East Coast it is only rarely met with, and from the woods north of Auckland it has disappeared altogether. In my journeys through the Kaipara district, eighteen years ago, I found this bird excessively abundant everywhere; and on the banks of the Wairoa the bush fairly swarmed with them. Dr. Hector, who passed over the same ground in 1866, assures me that he scarcely ever met with it; and a valued correspondent, writing from Whangarei (about 80 miles north of Auckland) says:—'In 1859 this bird was very abundant here, in 1860 it was less numerous, in 1862 it was extremely rare, and from 1863 to 1866 I never saw but one individual. It now seems to be entirely extinct in this district.'" According to Judge Maning, who supplied information to Buller (ibid.), the bellbird was commonly taken in the Hokianga district by Maori fowlers who "not very long ago . . . would come out of the woods with hundreds of Korimakos hung about them in strings . . . now they are well nigh extinct." Buller also says (1888: 2nd edition, p. 90, footnote): "Forty years ago literally thousands of these birds annually frequented the groves of wattle around the old mission-station at Tangiteroria (on the northern Wairoa) . . ."

It was thus very plentiful in North Auckland, according to Buller's account, up to the early 1860's, but became extinct, or nearly so, shortly afterwards. A further comment after its disappearance is that by Reischek (1887), who wrote that: "At Whangarei Heads, in the North Island, I saw one specimen which was blown in a gale from Morotiri Island. . . I searched all the northern forests from the Mokau to the Bay of Islands, and across from one coast to the other, but never again observed it. I attribute its disappearance to cats, rats, bees and bush-fires."

The following observations on some recent occurrences in North Auckland are thus especially interesting, as it appears that in at least two areas, Warkworth and Whangarei Heads, bellbirds may have again become permanently established.

* In January, 1953, Mr. B. Cranston, keeper at Tiri Lighthouse, 20 miles from Auckland, informed me that bellbirds had been seen recently. Tiri Island is now almost entirely cleared, but there are scattered pohutukawas on the coast and a little bush at the north end. Formerly bellbirds were abundant: several specimens in the Auckland Museum were collected there in 1909.

In the Dome Valley district, Warkworth, a pair of bellbirds was observed in about April, 1951, by Mr. S. G. Gittos, whose property adjoins the State Forest reserve below the prominent peak known as the Dome (1,105 feet). The birds stayed in the garden and nearer trees for some months, and fed on nectar from orchard flowers, but also flew up to windows to take insects and spiders, even coming under the verandah. For the remainder of the summer they were seen at intervals, but only singly and generally not close to the house; and one was seen by Mr. Gittos in the bush behind his farm. Two birds were seen again close to the house in July, 1952; one, in moult, had most of the tail feathers missing. During a visit in March, 1952, when, with Mr. Gittos, I had examined fairly thoroughly the Dome State Forest, and visited the neighbouring forest at the head of Waiwhio Valley, bellbirds were not seen. However, Mr. Gittos reported that there appeared to be quite a number about the area during the following summer of 1952-53.

A recent visit was made on 24th July, 1953, when I was accompanied by Dr. D. S. Farner. On this occasion, with Mr. Gittos, we observed several bellbirds on slopes immediately above the farmland clothed in scrub and second-growth bush. They were apparently feeding on the nectar of native fuchsia (**Fuchsia excorticata**) which was in full flower. Six at least sang fairly close at hand, and we watched closely one male bird **singing** in a tall pine. Another, also a male in fresh plumage, was later observed very closely as it sang in the belt of trees near the house.

Future observation here will be of great interest, and especially confirmation that the birds are established and breeding. It would be interesting further to observe the extent to which these birds are established in the two adjacent forest areas. Mr. Gittos has mentioned to me the interesting point that none have come down to take spiders, etc., from the windows, or come into the house, since the first pair were seen.

In 1951 I also received a record of the bellbird from Mr. Digby Graham, who wrote that "on 20th August I observed a bellbird sipping nectar from the flowers of a flame tree at Manaia Gardens, Whangarei Heads."

On a visit to Peach Cove, on the southern portion of coast beneath the Bream Head range, Whangarei Heads, on 17th August, 1934, I observed several bellbirds which were singing vigorously and chasing in pairs through the open pohutukawa forest. It seems, in view of this and the recent record given above by Mr. Graham, that bellbirds may be established in the fairly extensive forest areas surrounding the peaks of both Mt. Manaia and Bream Head in this area.

Another North Auckland report has recently been received from Miss M. Graham, who observed two bellbirds in early April, 1953, on the property of Mr. J. H. Carter, of Mata Hill, in the Mangapai district. The birds were also seen by Mr. Carter who has not previously seen them in the district. This locality is in hilly country, approximately 15 miles south of Whangarei, and has considerable areas of bush in the neighbourhood. The harsh alarm note was noticed when a cat approached; subsequently the identification was confirmed from specimens at Auckland Museum.

Full details of all these occurrences are given as it is hoped that observers will follow up these reports in these districts and elsewhere in North Auckland. In this region the bellbird is at present found in large numbers on the various offshore islands: The Poor Knights, Hen (Taranga) and Chickens (Morotiri), and Little Barrier Island. There are smaller numbers on the Cavalli Islands and Fanal Island (Mokohinau group). They have evidently crossed to the mainland from the offshore islands, and would be likely to reach Whangarei Heads and Warkworth from the Chickens group and Little Barrier Island respectively.

I am grateful to Dr. W. M. Hamilton for the information that on several occasions since c. 1920 bellbirds have been seen in gardens in the Mahurangi district, not far from Warkworth. These were doubtless stray birds, and would be quite likely to have come from Little Barrier Island. Mr. G. R. Hutchinson informs me that he has recorded bellbirds occasionally in this district near the coast to the south of Leigh. A further record

at Ti Point (Omaha Bay), in the same district, was made some two years ago by Mr. A. H. Hooper, who has kindly handed on the information to me.

There have been occasional reports of bellbirds in Auckland city. In October-November, 1931, a bellbird was seen for several days feeding in flowering kowhai (**Edwardsia microphylla**) at St. Heliers (report received from Mr. W. J. Rutherford). Recently, on 6th March, 1953, Mr. B. Knight observed one feeding on fruiting karamu (**Coprosma lucida**) in a garden in Symonds Street, adjacent to Grafton Gully. These visiting birds may have come from Motuihe Island, approximately 10 miles away, or possibly from the Hunua forest area to the south-east.

The following notes are added in order to record an attempt made by members of the Auckland Zoological Society to introduce bellbirds to the Waitakere Ranges (see also reference by Stead: 1932, p. 146). Although the birds were observed after their release, there have been no reports since 1946 when the last record was made by Mr. K. Thompson, caretaker of Huia Dam, so that there is some considerable doubt as to whether they finally became established. They had been seen at various points in the Huia and Karekare areas by Mr. Thompson up to this date, and also close to the point of release at the Dam.

According to a brief statement in the Annual Report of the Auckland Zoological Society for 1933, the liberation was made on 3rd February, 1932; and "subsequent reports have shown that the birds liberated have not disappeared. The caretaker at Huia Dam, Mr. K. Thompson, reports having seen bellbirds several times some few miles from the Dam.* The reports indicate that even last winter the birds were obtaining a little nectar from bluegums. . ."

I am informed by Mr. A. T. Pycroft, one of the party which visited Little Barrier Island to obtain the birds, that a total of 15 were released.

LITERATURE

Buller, W. L., 1873—A History of the Birds of New Zealand· 1st Edition.
1875—On the Ornithology of New Zealand.—Trans. N.Z. Institute, 7, 197-211.
1877—On the Ornithology of New Zealand.—Trans. N.Z. Institute, 9, 327-337.
1878—On the Disappearance of the Korimako (**Anthornis melanura**) from the North Island.—Trans. N.Z. Institute, 10, 209-211.
1888—A History of the Birds of New Zealand, 2nd Edition.
1895—Notes on the Ornithology of New Zealand.— Trans. N.Z. Institute, 27, 104-126.
1905—Supplement to the Birds of New Zealand.

Hutton, F. W., 1869—Notes on the Birds of the Great Barrier Island.—Trans. N.Z. Institute, 1, 160-161.

Myers, J. G., 1923, a.—The Relation of Birds to Agriculture in New Zealand. III. The Larger Fruit and Insect-Eating Perching Birds (Passeres).—N.Z. Journal of Agriculture, 27, 13-19.

Myers, J. G., 1923, b.—The Present Position of the Endemic Birds of New Zealand.—N.Z. Journal of Science and Technology, 6 (2), 65-99.

Reischek, A., 1887.—Notes on Ornithology.—Trans N.Z. Institute, 19, 184-188.

Stead, E. F., 1932.—The Life Histories of New Zealand Birds.

Turbott, E. G., 1948.—Effect of Goats on Great Island, Three Kings, with Descriptions of Vegetation Quadrats.—Records Auck. Inst. and Museum, 3, 253-272.

Turbott, E. G. and Buddle, G. A., 1948.—Birds of the Three Kings Islands. —Records Auck. Inst. and Museum, 3, 319-336.

* Mr. Thompson informs me that they were observed soon after release at a homestead in the Karekare Valley, approximately four miles from the Dam. This has also been mentioned to me by Mr. A. H. Hooper, who received information that they came about the house and took honey put out to feed bees. It was suggested that as the birds had been captured at the homestead at Little Barrier Island they were accustomed to being fed, and thus came down to the house. The attraction of the bellbirds to Mr. Gittos' homestead when they were first seen at Warkworth might also be noted.

FURTHER NOTES ON CHARADRIUS LESCHENAULTI.

By R. B. Sibson, Auckland.

The large sand dotterel, also called Geoffroy's sandplover, which several observers watched at Miranda, in the Firth of Thames, during 1947-48 (v. N.Z. Bird Notes, Vol. 3, p. 51) was last reported on 15/2/48. During the ensuing winter, although the stretch of coast which it frequented was visited at least once a month by various members of the O.S.N.Z. who were familiar with the bird, it could not be found. It is, of course, possible that it was overlooked, though I think this unlikely. It seems reasonable, therefore, to suppose that soon after it was last seen, in common with other Arctic waders, it moved northwards towards its Asiatic breeding grounds.

However, by 22/10/48, after an interval of eight months, either the same bird or another had reappeared in the same locality. Its behaviour and the circumstances in which it was found strongly suggest that it was a recently arrived migrant. The morning tide had been going out for three hours, and a party of nine wrybills (**Anarhynchus frontalis**) was feeding well down the foreshore; but the large sand dotterel was still resting on a dry shellbank, the breeding ground of several pairs of banded dotterels (**C. bicinctus**) which, though aggressively territorial amongst themselves, paid no heed to the stranger. With it—and this, I think, is significant—was a stint (**Calidris ruficollis**), a juvenile, to judge by its colourless plumage. Between the two birds there had obviously sprung up some bond of companionship, so that wherever the dotterel went, the stint most faithfully went also and settled close beside it. Once they performed together a darting zig-zag flight over the now-exposed flats and, having alighted, fed eagerly side by side. I could not help recalling the curious and well-known association between golden plover (**Pluvialis apricaria**) and dunlin (**Calidris alpina**) which has earned for the dunlin the name of plover's page. The stint had attached itself to the dotterel rather than the dotterel to the stint. Had the two travelled a long way together and, being strangers in a foreign land, welcomed one another's company? But the attachment was short-lived, for by 7/11/48 a second stint had arrived; and what are believed to be the same two stints stayed together for more than a year, being recorded even in winter. They were still together on 24/12/49.

For some months after 22/10/48 the large sand dotterel frequented the same stretch of coast, casually joining parties of wrybills or banded dotterels, but often to be found solitary. On 6/2/49 it was closely watched by several ornithologists from the Pacific Science Congress, which was then taking place in Auckland. It was very satisfactory to have the identification confirmed by Dr. D. L. Serventy, who knows the species well in Western Australia. On 6/3/49, when it was last seen, it was still a pale bird with no trace of breeding colour. On this occasion I was able to point it out to Mr. D. A. Urquhart, who is now convinced that the puzzling dotterel which he saw at Karaka, in Manukau Harbour, in late winter, 1947, and on which he had made careful notes, was a bird of this species. (N.Z. Bird Notes, Vol. 3, p. 95.)

During the winter of 1949 the Miranda coast was under regular observation and again no large sand dotterel was recorded. Then on 15/10/49, Messrs. H. R. McKenzie and P. A. S. Stein found two together. What was especially noteworthy was that one of these was an adult in worn breeding plumage, showing an almost complete collar of a rich tawny or gingerish colour. The shade of the legs was blue-grey. On 21/10/49 this bird was shown to me. It was obvious that the moult out of breeding plumage was proceeding apace. On either side of its chest it now showed a bright tawny tab of feathering, but the collar was distinctly broken in the middle. On 30/10/49 and 8/11/49 it was seen again and traces of breeding colour were still visible.

The two birds were not seen together again after the first occasion, but one continued to haunt the Miranda beaches at least till 26/2/50. It is believed that the other flew over the intervening hills to Manukau Harbour where it settled down on the wader-thronged flats of Karaka; for there, on 18/12/49, one was located by Mr. D. A. Urquhart. Subsequently he noted it several times till 7/4/50, when it was still a pale bird with no trace of breeding dress.

The winter of 1950 passed without there being any further records of **C. leschenaulti.** Then on 4/11/50 two were again located on the Miranda coast. One of these, as reported by Mr. H. Ross McKenzie, was clearly an adult in fading plumage, but still with reddish collar tabs. As in the previous summer, they did not stay together, but a single bird was seen on three occasions, lastly on 10/2/51.

After a lapse of six months, on 26/8/51, H. R. McKenzie and I located one, a very pale bird, with three red-breasted dotterels (**C. obscurus**) on a Miranda beach which **C. leschenaulti** has often favoured in the past. In our experience this is rather a silent species. The call of this bird was heard distinctly and recorded as a soft "treep" slowly repeated three or four times; quite distinct from any call of banded or red-breasted dotterel with which I am familiar. What was probably the same bird was found in mid-December some four miles away, consorting with Pacific golden plover in a ploughed field. Its last appearance was on 13/1/52, when, in company with banded dotterels, four stints and a curlew sandpiper, it was haunting one of the shallow, fresh-water pools which prove so attractive to small waders on the Miranda coast.

To bring the story up-to-date, on 28/9/52 several Auckland and Clevedon members of the O.S.N.Z. had close views under most favourable conditions of a large sand dotterel on the identical strip of beach where the species has now reappeared in spring for six successive years. This was clearly an adult in worn plumage. Its orange neckband, though narrowing in the middle, was not severed. The legs were noted as grey with a hint of green. It was not molested by the numerous banded dotterels which were breeding nearby. When last seen, near Miranda Creek on 7/12/52, it was on the edge of a great concourse of waders which included eleven species.

Hindwood (Emu 49, p. 7) has drawn attention to the varying descriptions of the colour of the legs of **C. leschenaulti.** In October, 1949, McKenzie and Stein noted the legs of a moulting adult as blue-grey. When in August, 1951, McKenzie and I watched a pale (? immature) bird, the legs from the front appeared as grey-blue to one observer, while to the other from the side they seemed "browny green." The truth may be that in the field the legs are of a somewhat indeterminate shade, and the observer's description depends on the brightness of the light and the angle of observation.

Although the large sand dotterel has not yet been proved to remain in New Zealand throughout the winter, there is strong presumptive evidence that it may do so. The first bird of the species ever to be recorded in New Zealand was found on Aug. 20th, a suspiciously early, though not impossibly early date for a far-travelling migrant from northern Asia. In the same category must be placed the pale bird which was found at Miranda on 26/8/51. If we could be quite certain that Urquhart's strange dotterel of 19/7/47 was **C. leschenaulti** that would provide conclusive evidence of wintering. Lastly, his record of a pale bird in April suggests that it was an immature non-migrating non-breeder. The dates when the large sand dotterel has last been seen in successive summers at Miranda seem to indicate that it moves northwards early.

SUMMARY OF APPEARANCES OF CHARADRIUS LESCHENAULTI.

Season.	Locality.	Dates.	Remarks
1943-44	Manukau. Puketutu causeway	20 Aug. and 5 Sept.	With wrybils. Not seen later.
1945-46	Manukau. Puhinui	30 Sept. and 10 Oct.	Alone on fringe of big pack of godwits. Not seen again.
1947-48	(a) Manukau, Karaka	19 July—6 Sept.	Identity of this bird now believed certain. (D.A.U.)
	(b) Firth of Thames. Miranda Coast.	20 Dec.—15 Feb.	Mainly in association with banded dotterels.
1948-49	Ditto	22 Oct.—6 Mar.	Usually associating with wrybills or banded dotterels.
1949-50	(a) Ditto	15 Oct. (2)—26 Feb (1)	The two separated, only one, a moulting adult being seen subsequently.
	(b) Manukau. Karaka.	18 Dec.—7 Apr.	Possibly the second Miranda bird.
1950-51	Firth of Thames. Miranda coast	11 Nov. (2)—10 Feb. (1)	The two again separated. First with three red-breasted dotterels.
1951-51	Ditto	26 Aug.—13 Jan.	Later once located on arable with Pacific golden plover.
1952-53	Ditto	28 Sept.—7 Dec.	An adult moulting out of breeding plumage.

LITTLE WHIMBREL AT NAPIER.

By D. H. Brathwaite, Napier.

To my previous account (Notornis, Vol. 5, p. 117) of a bird seen at Napier and identified as the little whimbrel (**Numenius minutus**) I am able to add further details. On October 26, 1952, Mr. G. Crawford and I saw what was presumaby the same bird on the margin of a small marshy pool, about a quarter of a mile from the place where previously seen. The light was less favourable this time, but the striped crown was clearly to be seen. It was possible to observe the bird against a background of water and the decurved bill could also be seen, confirming my previous impression. When the bird flew away it was again seen to have no perceptible pattern.

On Sunday, April 12, 1953, in company with Miss C. Saxby, of Napier, I saw a smallish wader alight in a pool. We were able to approach to within twenty yards or so and watch the bird through binoculars. It was facing away from us, but, as it turned its head the striped crown and decurved, slender bill, came into view and I realized that it was a little whimbrel, the third occurrence within ten months.

So far as I can ascertain, there are only two waders whose descriptions fit the bird seen, these being the little whimbrel (**Numenius minutus**) and the Eskimo curlew (**Numenius borealis**). As the latter appears to be so rare as to be possibly extinct, its occurrence in New Zealand is hardly to be expected, but in any case descriptions of its call notes do not fit those heard from the bird being discussed. Stead (1923, p. 492) remarked of the little whimbrel that "It is very like a golden plover in its winter plumage, and, excepting for its larger size and its longer and curved bill, might easily be mistaken for that bird at a distance." I was not, at first, in agreement with this statement, but the bird seen in April was standing in rather a hunched attitude, and its resemblance to a golden plover was so striking that until I saw the striped crown and curved bill I thought it was that species, one of which had been seen about half an hour earlier.

The little whimbrel has previously been recorded in New Zealand on only four occasions, all at Lake Ellesmere. One of these was in June (1900, two birds) and the other three in March (1921, 1922 and 1925). It is interesting that, after a lapse of twenty-seven years, the species should be seen three times within one year.

REFERENCE.

Stead, 1923.—Trans. N.Z. Inst., Vol. 54, pp. 490-495.

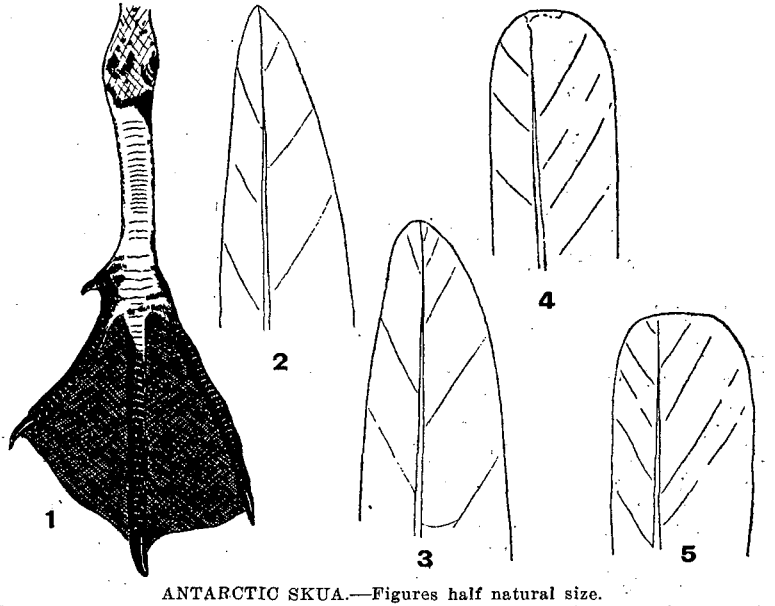
A FOURTH N.Z. RECORD OF THE ANTARCTIC SKUA, **Stercorarius skua maccormicki** (Saunders)

By C. A. Fleming, Wellington.

Until 1940, the inclusion of the Antarctic skua on the New Zealand list depended on a misidentified specimen of the subantarctic skua (**Stercorarius skua lonnbergi**) from Stewart Island (Falla, 1940). Falla recorded two authentic specimens of the Antarctic skua from the west coast of the North Isand in 1940 and a third was recorded by Sibson (1950). These records depend on a sun-dried mummy of an adult (Rangitikei, Jan. 2, 1940), an imperfect immature skin (Muriwai, Apr. 2, 1940), and a clean skull (Mitimiti, Hokianga, 1946 or 1947). The bird now described came ashore exhausted but alive at Waikanae Beach on March 29, 1953.

During the night of March 28-29, 1953, Waikanae experienced an electrical storm with thunder, lightning and strong gusts of wind. The Meteorological Service reports that the wind at Paraparaumu Aerodrome was at first northerly and later, after 5 a.m., north-easterly, with an average speed of 10 to 12 knots, but squally, a gust at about 3 a.m. reaching 38 knots. By morning strong breakers were piling spume on Waikanae Beach.

At 9 a.m. on March 29, Robin and Mary Fleming (aged 11 and 7) saw a large bird struggling in the breakers. They thought it looked like a young black-backed gull, but it was darker and had a white patch on each wing. While Mary held off their dog, Robin waded to the bird, wrapped it in her jersey, and carried it home, passive and unresisting. In shelter, it was recognised as an Antarctic skua. Although capable of standing at first, it became weaker all morning, ignored food, and died soon after mid-day. The skin has been preserved (Fleming Collection No. 763), with the following data: Weight, 1lb. 7½oz.; length in flesh, 550; wing-spread, 1370; wing, 369; tail (a little worn), 152; tarsus, 67; toe, 67;



ANTARCTIC SKUA.—Figures half natural size.

Fig. 1—Foot of Waikanae specimen to show pattern of pigmentation characteristic of juvenals.

Fig. 2—Third primary, right wing, of Waikanae specimen, showing pointed tip.

Fig. 3—Third primary, right wing, of an adult male, Cape Adare, Antarctica. Feb. 24 1904 (Dominion Museum).

Fig. 4—Fifth rectrix from tail of Waikanae specimen.

Fig. 5—Fifth rectrix from tail of an adult male, Cape Adare, Feb. 24 1904.

culmen, 51 mm.; iris, dark brown; bill, steely black; palate, cream; feet, black with front of tarsus bluish ivory (as in fig. 1), a small white patch proximally on sole.

Primaries and secondaries are fresh and unworn and show no moult. The tail-feathers are slightly worn at the tips. Contour feathers are fresh but show a little fraying on the weakly pigmented tips of scapulars and coverts. A single breast feather was new, with a vascular sheath. Head, neck and breast are uniform buffy brown, lacking the golden hackles of an adult; back and wings dark brown; scalloped by the pale-tipped scapulars and coverts. The alar patch is clear white and well-defined.

The bones were soft, and the skull showed sight contusion. The bird was a male, testes small, black, and elongate (5 x 1 mm.). Stomach: Empty, except for a little seaweed and dark brown bile.

The bird is judged to be a fledgling in its first plumage for the following reasons:—

(1) The uniform brown plumage agrees with E. A. Wilson's (1907) description and sketch (pl. 12, fig. 3) and lacks the straw-coloured neck band which (according to Wilson, p. 72) begins to appear at an age of ten or eleven months.

(2) The bluish tarsal patch of young fledglings is generally lost by March although it persists later in 20 per cent. of birds (Wilson, p. 68, 72).

(3) The primaries are more pointed than in adult skuas, and the tail feathers are rounded, in contrast with their rather squarish outline in adults (see figs 2-4)). According to Dwight (1925, pp. 98, 100) pointed primaries and rounded rectrices are diagnostic of the first (juvenal) plumage of **Laridae** and are one of the best characters to distinguish first-year from second-year birds. The first primaries, acquired by the chick at the nest, are retained until moulted during the following summer, about a year after hatching. Probably the situation is similar in the closely-related skuas. If so, the Waikanae skua is a young fledgling in its first plumage; by March, a yearling would have replaced its well-worn pointed primaries. A bird in its second or later years would probably show evidence of a recent moult.

(4) Soft bones and undeveloped testes are compatible with youth, but not conclusive evidence. Adult Antarctic skuas weigh 3lb. (Wilson, p. 75); the light weight of the Waikanae specimen is probably due to starvation before death.

On the Antarctic Continent, Antarctic skuas hatch their eggs in January (exceptionally late December) and the young fly in late February and early March (Wilson, p. 72). Together with their parents, the young migrate northward in March (Wilson, p. 72; Falla, 1937, p. 250). The bird that died at Waikanae on March 29, 1953, was probably no more than three months old and had made a rapid passage from Antarctica to New Zealand. There are no meteorological data to suggest how the bird began this journey, but weather conditions south of New Zealand during the week before its death show how it could have been helped on its way across subantarctic waters.

According to the New Zealand Meteorological Service, at midnight on March 25 a vigorous cold front extended from Campbell Island to the central Tasman Sea, and S.S.E. winds on its south-west side reached a speed of 30 knots, so that a bird could have travelled from near Campbell Island to 40°S in mid-Tasman in about a day. By March 27, a depression had developed in the eastern Tasman and, by midnight on March 28, northerlies west of the North Island probably brought the bird on a lee shore where it was exhausted and blown ashore. The probable route was thus north-eastward, south of Stewart Island to the Tasman, and thence southward to Waikanae.

The winter habits and distribution of the Antarctic skuas are unknown but they are generally assumed to be pelagic in the pack ice. Two of the New Zealand records are of young birds which apparently exceeded the normal limits of the exodus migration.

REFERENCES.

Dwight, J., 1925—The Gulls (**Laridae**) of the World.—Bull. Amer. Mus. Nat. Hist. 52.

Falla, R. A., 1937—Birds.—B.A.N.Z. Antarct. Res. Exp. Rep. (B) 2.

Fala, R. A., 1940—Occurrence of the McCormick Skua on the Coast of New Zealand.—Emu 40 : 119-20.

Sibson, R. B., 1950.—Third Record of McCormick's Skua on N.Z. Coast.—Notornis, 3, 237.

Wilson, E. A., 1907—Aves. Brit. Nat. Antarct. Exped., 1901-1902.

RINGED GIANT PETRELS.—In the summer of 1947-48, the Australian National Antarctic Research Expedition set up research stations at Heard Island (lat 53° S., long. 73½° E.) and at Macquarie Island (lat 54½° S., long. 159° E.) which have been maintained continuously up till the present time. Among other duties the biologists have been ringing giant petrels (**Macronectes giganteus**), southern skuas (**Stercorarius skua lonnbergi**) and other birds. Already many of these birds have been recovered from various parts of the Southern Hemisphere, including a giant petrel in New Zealand between Raglan and Hamilton, in the North Island, this bird having flown over 4000 miles. During a recent visit to New Zealand over one hundred giant petrels were seen by the writer congregated about an outlet pipe leading into Wellington Harbour from a meat works. Others were seen swimming alongside ships tied up to the wharves. Excellent opportunities are presented here to obtain sight records of ringed birds since the rings are sufficiently big to be seen on the tarsus when the bird is undisturbed. Both plastic and aluminium rings were used, the former being red, black, white or brown with no inscription. Many of the birds ringed were nestlings and evidently only these come to Australia and New Zealand. It would be interesting if some sight records could be obtained to determine, by noting the amount of fading of face and body plumage, the age at which these birds will come into northern waters.—M. C. Downes.

RELATIONS OF REDPOLL (**Carduelis flammea**) WITH OTHER ANIMALS.—At Wellington this species competes with the goldfinch (**Carduelis carduelis**) for cassinia seed, the staple food of the area. House sparrows (**Passer domesticus**) also eat this seed when ranging through the countryside in autumn from nearby built-up areas. However, seed supplies seem adequate for all three species, and they feed together amicably in autumn in the same clumps of seeding bushes. The redpoll has at no time been seen to attack the swamp harrier (**Circus approximans**), which does not prey on passerine birds, though magpies (**Gymnorhina hypoleuca**) and starlings (**Sturnus vulgaris**) attack it, so that it was a matter of surprise to see a large flock of redpolls in early winter attack a bush hawk (**Falco novaeseelandiae**). This hawk is a predator of small birds. During the early part of the nesting season redpolls exhibit threatening postures in flight at starlings, yellowhammers (**Emberiza citrinella**) and hedge sparrows (**Prunella modularis**) and also at man. Surprisingly, birds still defending the immediate area around suitable nesting sites in January were not seen to attack vagrant family parties of goldfinches passing nearby.—H. L. Secker, Wellington.

SHINING CUCKOO RECORDS.—Last year, Mr J. M. Cunningham, 39 Renall Street, Masterton, carried out a pilot study of the dates of arrival of the shining cuckoo in New Zealand, and the results and an indication of the methods adopted are given elsewhere in this issue. The study is being repeated with modifications this year, and members are invited to inform him of their 1953 records. Not only the first date is required, but also that at which the birds became common and resident in the district.

A NOTE ON THE BREEDING AGE OF RED-BILLED GULLS (**Larus novaehollandiae scopulinus**) AT NELSON, N.Z.

By L. Gurr, Nelson.

Red-billed gulls (**Larus novaehollandiae scopulinus**) were ringed by the author, at the Boulder Bank, Nelson, during the breeding seasons of 1943-44 and 44-45 when University of Otago rings were used, and again during the 50-51, 51-52 and 52-53 seasons, when Ornithological Society rings were used.

In the 1950-51 breeding season 106 fledglings were ringed at a colony on the Boulder Bank opposite the Atawhai Church. The following year only six red-billed gulls nested at this site and on one occasion a year old ringed bird was seen to visit the colony. However, this bird was not seen again at the colony, and certainly was not breeding there. During that year the main red-billed gull colony, 363 nests, on the Boulder Bank, was situated near the Lighthouse at Port Nelson, and no one-year-old ringed birds were seen at the colony when visited on 21 January 1952.

Dwight (1925) states: "There is no evidence that any gulls breed before they have assumed practically adult plumage and none reach this stage the first year." Although the observations made during this season do not prove that the red-billed gull does not breed in its first year, there is no reason to believe that it is any exception to the principle pointed out by Dwight.

The following season the only red-billed gull nesting colony on the Boulder Bank was near the Lighthouse at Port Nelson, and eleven two-year-old birds bred there. They had been ringed at the colony opposite the Atawhai Church, Nelson, in January, 1951, with Ornithological Society rings numbered 9314, 9316, 9321, 9328, 9331, 9332, 9375, 9388, 9394, 9397 and 9528. These birds were all seen as they left or returned to nests and were not unemployed birds visiting the colony. Thus birds of this species are capable of and do breed when they are two years old. Dwight (1925) shows that the red-billed gull assumes adult plumage in its second year, and Stead (1932) claims that the black-billed gull (**Larus bulleri**), the red-billed gull's nearest relative in New Zealand, breeds in its second year. The red-billed gull, then, behaves as would be expected for a gull of its size and type.

Two birds, ringed on the Boulder Bank opposite the Atawhai Church during January 1944, rings numbers B818 and B807, were breeding where ringed in the 1950-51 breeding season. These seven-year-old birds were mated to two unringed birds and were seen to change guard on the nest, so that both sexes incubate. On the only visit made to the main colony at the Lighthouse, Boulder Bank, Nelson, during the 1951-52 season one ringed bird (ring number not noted, but ringed with a University of Otago ring, therefore at least seven years old) was seen at the colony.

Two birds, rings numbers B793 and B1273, ringed at the Atawhai Church colony on 22 January 1944 and 24 December 1944 respectively and another University of Otago ringed bird (number not seen) were breeding at the Lighthouse colony during the 1952-53 season. Thus three birds of this species, one eight years old, another at least eight years old and the other nine years old, were still breeding. Assuming that, once started, a red-billed gull breeds each year thereafter, some birds of this species may breed at least seven times in their lifetime and further work will probably show that the breeding span is longer even than that.

REFERENCES.

Dwight, J., 1925—The gulls (**Laridae**) of the world; their plumages, moults, variations, relationships and distribution.—Bull. Am. Mus. Nat. Hist., 52: 279-85.

Stead, E. F., 1932—The life-histories of New Zealand birds. London.

NOTES ON HABITAT AND BEHAVIOUR OF THE ROCK WREN SUBSPECIES **Xenicus gilviventris rineyi** Falla

By Thane Riney

The following notes were made in April, 1953, by a field investigation team of six men from the Wildlife Division, Department of Internal Affairs. Observations extended over a strip of terrain approximately four miles wide and twenty-five miles long between Chalky and Dusky Sounds (1), and in a second study locality radiated out a distance of about three to five miles from an un-mapped lake approximately two thirds the distance from Fanny Bay, south-west toward Longburn (2), see Fig. 1.

The sub-species here discussed **Xenicus gilviventris rineyi** Falla, (Falla, 1953 : 142), appears closely related to other rock wrens, when one compares birds in the hand, but differs from them in behaviour and in habitat preference. Differences in behaviour and habitat between the Fiordland wren and the common rock wren **Xenicus gilviventris gilviventris** Von Pelzeln, may prove to be similar in degree to behaviour and habitat differences recognized between the latter and the bush wren, **Xenicus** longipes (Gmelin), by Guthrie-Smith (1925: 303).

This Fiordland wren had the most restricted habitat of any land bird observed in the West Cape Peninsula, where type specimens were collected. There it was seen almost exclusively in the band of dense scrub between tussock on the tops and the beech forest on the slopes. Farthest distance from the scrub which one was observed penetrating into tussock was 40 to 50 feet. There was no association with rock, boulders, morainal or talus, as I have observed in January, 1953, in Takahe Valley, west of Lake Te Anau, and as has been reported as typical for **X. g. gilviventris** (Guthrie-Smith, 1925; Haast, J., 1867: 33).

Dominant in the sub-alpine scrub was **Olearia colensoi.** Other plants, closely associated and often playing a conspicuous sub-dominant role in appropriate sites were other species of **Olearia, Dracophyllum** and **Hebe,** see Fig. 2. Manuka was occasionally a dominant species in restricted localities, particularly on northerly exposures.

The scrub belt at its upper edges was rarely over three or four feet in height, while in favoured sites, more protected from wind, scrub reached eight to ten feet above ground. Scrub plants grow close together and their stiff intertwining branches make this an extremely difficult habitat for a man to move through either by crawling, cutting or crashing through or by attempting to walk on top of the nearly unbroken canopy.

The wren foraged after insects on the ground and along the branches of the scrub. In the scrub, on several occasions, it was watched foraging through the inside of the outer periphery. On two occasions one was observed capturing a small moth. The only time it was observed on the outside of the periphery was as it popped up to view a human intruder, or just before leaving one shrub for another. The wren responded in a positive way to the practice of "squeaking" (with the lips). I suspect that it feeds more on the ground than we were able to observe as in three instances, while crashing through scrub, I flushed wrens on or within six inches of the ground.

The courtesy, or bob, so typical of **X. g. gilviventris,** was not observed in the Fiordland wren. A motion picture record of the bird was closely examined as an additional check. At no time was the wren seen to make a distinct dip as does the common rock wren: down and up in a quick smooth motion. However, it did accomplish a jerky posturing movement in which the body was tilted forward and held posed in a lowered position, which may be related to the pronounced dipping of the common rock wren. It will be of interest in the future to watch for traces of this dipping behaviour in the Fiordland wren.

Wings were "flicked" in a manner similar to that of the rifleman **Acanthidositta chloris** (Sparrman).

A comparison of flight behaviour between rock wrens, observed at Mackinnon's Pass, and bush wrens is made by H. Guthrie-Smith (1925) who says:—

"The powers of flight are greatly superior to those of the bush wren. . . The rock wren can fly comfortably 50 or 60 yards—downhill certainly, but with a sustained easy, unlaboured movement—no fern birds' feeble flutter. The rock wren, too, is much less of a ground bird in its search for moths and other insect-life, often alighting upon and exploring the rounded tops of the shrubby hillside veronicas; the courtesy or bob and then the tip-toe telescopic elongation of the little fellow is also more pronounced. However little differences museum specimens may show, there are well-marked dissimilarities in the live representatives of these two birds."

The flight of the Fiordland wren under discussion is extremely weak; suggestive of the flight of a fledgling passerine. When observed in April, on the West Coast Peninsula, adults made a great buzzing of wings when in the air, but they seemed destined to lose altitude. Wings clearly played a secondary and accessory role in movement when compared with the legs. The following observation exemplifies this weak flight. On April 14, on tops north of Lake Macarthur, a bird was flushed from the tussock, approximately forty to fifty feet from the edge of the scrub. This bird jumped in the air an estimated height of three or four feet, and, although a light breeze blew in the direction of its flight, was unable to reach the edge of the scrub, gradually lost altitude and grounded about ten feet short of cover. It immediately sprang into the air again and buzzed into the scrub. The angle of the slope it was trying to traverse was about 10 degrees. This particular bird (Dominion Museum No. 2398) proved to be in the last stages of its moult. All tail feathers were not fully grown. The extent to which the moult influences feeding and flight behaviour is at present unknown. But, since all but three of the secondaries of the bird mentioned above were fully grown, it is clear that this form has considerably weaker powers of flight than has **X. g. gilviventris.** However, more observations are needed at different times of the year to place present flight records in their proper perspective.

Wrens were seen, in scrub, in each of the two areas indicated in Fig. 1. Each member of the research team could guarantee to see several on any fine day he chose to look for them. Between Chalky and Dusky sounds, wrens were estimated as common in the scrub edge as was the rifleman in the forest. (Is the Fiordland wren restricted to the scrub area for the entire year?) In January, 1952, I observed and described this form in **Olearia** scrub outside Lake Roe camp (an Internal Affairs Dept. shooters' base) several miles east of study area No. 2 (Fig. 1). It is probably distributed throughout many parts of at least southern Fiordland.

Greatest number observed in any one area was by P. Logan and R. Ward on April 4, just before sunset of a clear day. Near their camp, at the upper edge of the scrub belt north-west from Lake Macarthur, they observed four or five different groups of three or four birds each, all within 50 yards of one another. (Do they congregate for roosting?) On two different occasions they watched a rifleman fly away from a wren as the latter occupied the former's perch on a scrub limb. There was no chase witnessed, but both observers were certain that, where these two species occurred together in scrub, the wren was the more aggressive bird.

Wrens were observed apparently alone, in pairs and in small groups of five to eight. They were more difficult to observe during bad weather. On two occasions, in a heavy downpour, several wrens (3 and 8) were flushed from thick undergrowth and near the ground.

Since, as the scrub zone in this area is not in danger of disappearing and is, indeed, spreading on to low-lying tussock areas, it seems unlikely that the species here is in any immediate danger of extinction due to vanishing habitat related to foreseeable normal changes in the environment.

This form has survived extremely high rat population such as were described by Reischek (1887).

At present, polecats are known to be ranging over at least part of the wren habitat for two sets of tracks were seen in fresh snow by the study crew on tops between Fanny Bay and Longburn. Although no record of stoat was obtained on this trip, a stoat was observed a few miles north in Breaksea Sound by Henry (1894?). Polecat and stoat influence on the wren is unknown, but is not suspected to be a serious threat to the existence of the species.

In my opinion, the biggest obvious potential danger to populations of this scrub-inhabiting wren is fire, but in this extremely wet country even extensive scrub fires would be unlikely to destroy a significant part of the habitat at present known to be occupied by this bird.

Something about its nesting behaviour must be known before we can understand some of the most significant aspects of the way in which the Fiordland wren is related to its environment. But, judged by the data in hand, its future seems relatively secure.

Although a few characteristics of the wren are known, in this area, for April, it is in no sense described to the point where we have a clear notion either of where the form occurs or of its status and relations with closely related wrens. More specimens are needed to clear up the taxonomic status of each of the New Zealand wrens. Until a systematic sampling is done throughout New Zealand it will be impossible to prepare adequate descriptions to permit positive identification to species in the field.

One private stalker, Mr. Bernie Chaney, was closely questioned after he came out of an area near Lake Te Anau in 1953, and it is reasonably certain that he saw the same birds described by Falla (1953) and discussed here. But his observations were made over 80 miles from the nearest specimen and should be verified with additional specimens.

A search through Internal Affairs Departmental files reveals that a wren, not recognised as conforming to any of the published descriptions, has been seen by several deerstalkers in recent years. It is possible that they may have seen this newly described form, but some of their descriptions might equally apply to the bush wren, which still exists in the South Island.

A north-south cline in rock wrens is suggested by Falla (1953) from inspection of the limited number of specimens available. One would expect, then, some degree of intergradation in behaviour and habitat preference also to be present between the new form and **X. g. gilviventris** and it is apparent that additional collections and detailed field notes are needed—especially in suspected areas of intergradation.

Indeed, so scanty is our taxonomic knowledge of previously known forms that we cannot with confidence completely characterize any of them.

REFERENCES.

Falla, R. A., 1953—Description of a new form of New Zealand wren. Notornis 5 (5): 142-143.

Guthrie-Smith, H., 1925—The Rock Wren (**Xenicus gilviventris**).—New Zealand Journ. Sci. and Tech. 7 (5): 303-305.

Haast, J., 1867—Reports on the headwaters of the river Rakaia.—Gov't. printer, Christchurch: 1-71.

Henry, R., 1894—The kakapos and kiwis at Resolution Island.—Christchurch "Press" cutting.

Reischek, A., 1887.—"Recent explorations North of Chalky Sound, West of Otago."—Trans. New Zealand Institute 18: 187-198.

(For critical reading of the manuscript I am indebted to Dr. R. A. Falla and Dr. C. A. Fleming; for preparation of the map, to Mr. V. Stout, Wildlife Division.—T.R.)

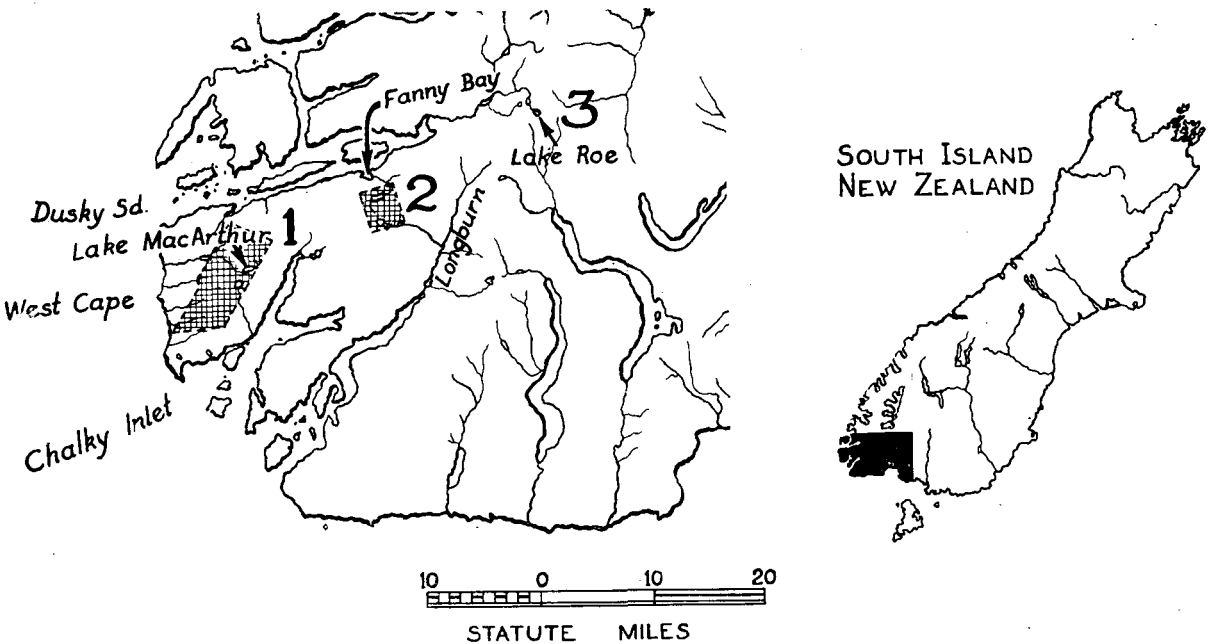


Figure 1.—Map showing location of study areas. The Fiordland wren was seen in each of the three areas listed; specimens are from No. 1 only.

Figure 2.—Upper edge of scrub habitat from top of Reischek Range, three miles S.E. of Lake Macarthur.

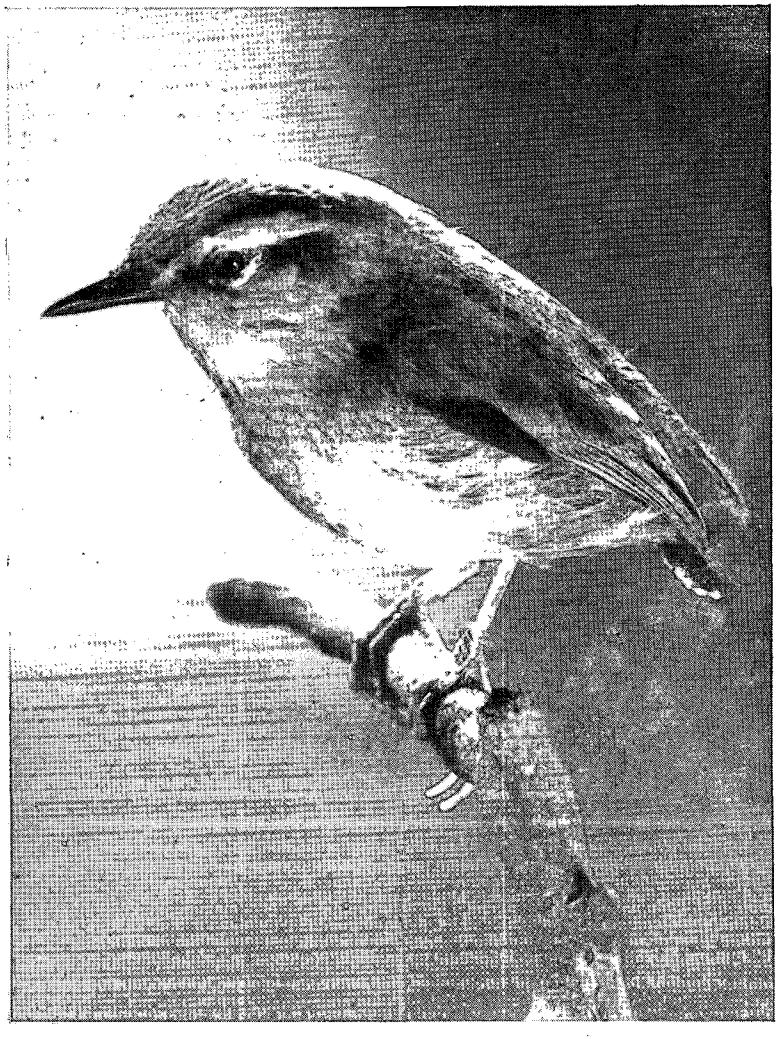


Figure 3.—FIORDLAND WREN (Dominion Museum, No. 2398).
Photo by C. Hale.

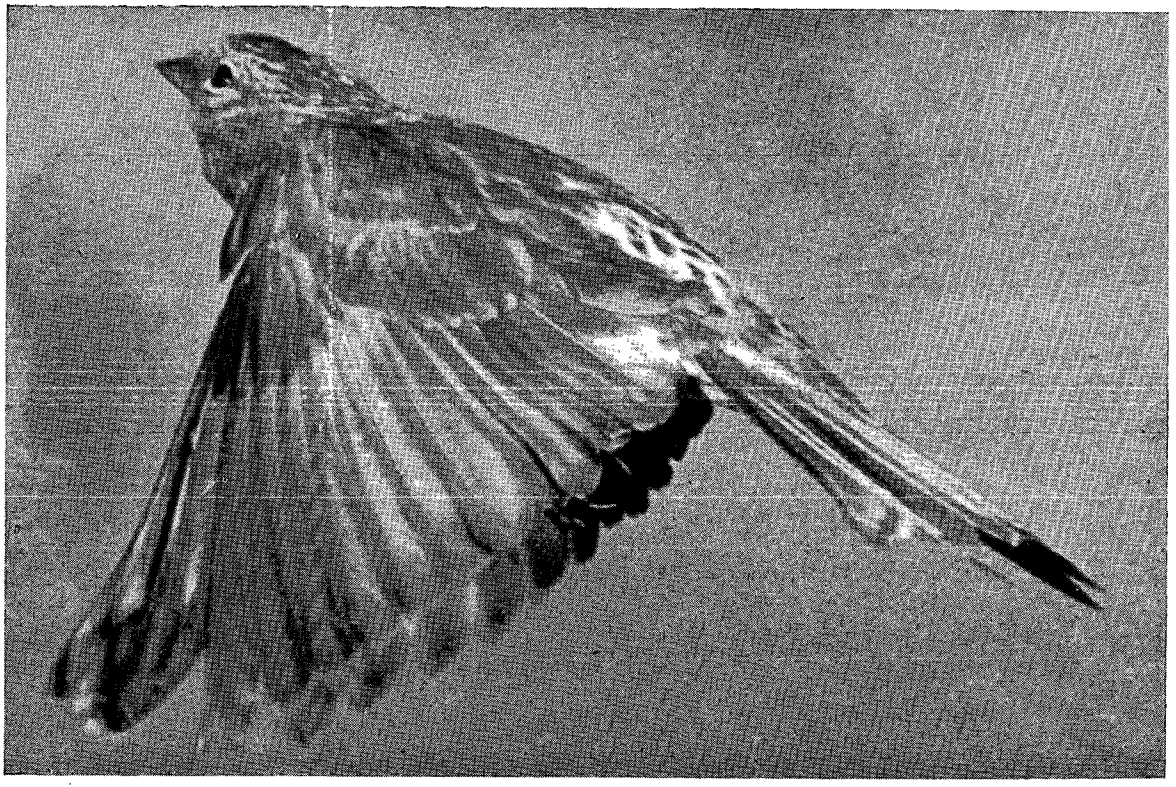


Fig. 1.—REDPOLL, **Carduelis flammea cabaret,** photographed in New Zealand.
Characteristic for the **flammea** group is the streaked rump; the British subspecies **cabaret** is characterized by inconspicuous buff wing bars. Photo: Copyright, K. V. Bigwood.

TAXONOMIC STATUS OF THE REDPOLL IN N.Z.

By Kaj Westerskov, Wildlife Division,
Department of Internal Affairs, Wellington.

INTRODUCTION.

The introduced redpoll has appeared under a variety of different names in New Zealand ornithological literature. As the two most commonly found, **Acanthis cabaret** and **Carduelis cabaret**, are not in accordance with the internationally accepted nomenclature, and as the subspecies present in New Zealand has not been investigated an attempt has been made to remedy the existing gap by examination of a series of skins of New Zealand redpolls.*

REDPOLL LIBERATIONS IN NEW ZEALAND.

According to Thomson (1922, p. 172) the first attempt to introduce redpolls into New Zealand was made in Nelson by the Nelson Acclimatization Society in 1862. Later, larger importations were made in Otago, Canterbury, Wellington and Auckland Acclimatization Districts. They are now common breeding birds over most of New Zealand, especially in manuka and scrub-covered country.

REDPOLL NOMENCLATURE.

According to Lonnberg (Ibis, 1931, p. 306) Rudbeck's drawing referred to in "Fauna Svecica" and which is quoted under **Fringilla flammea** in Linnæi "Systema Naturæ," tenth edition, 1758, is that of a redpoll, for which reason **flammea** (which formerly was considered indeterminate) must be accepted as the specific name for the redpoll as it occurs before **linaria**, which was the specific name for the redpoll used by Linnæus.

Brisson in 1760 (Ornithologia, vol. I., p. 36) described a new genus **Carduelis** to which the redpoll belongs, as adopted by Hartert, who in his "Die Vogel der palaarktischen Fauna" (1910-22) united goldfinches, siskins, citrils, redpolls, twites and linnets into the one genus.

The generally accepted name for the redpoll is, therefore, **Carduelis flammea** (L.), as used in "The Handbook of British Birds," vol. I., p. 66, and in Jorgensen and Blackburne: "Glossarium Europae Avium," 1941, p. 34.

Redpolls ("genus" **Acanthis**) are not now generally separated from the goldfinch and its allies (**Carduelis**), and the trivial name **cabaret** which up till now has been used in New Zealand for the redpoll, is now used subspecifically for the lesser redpoll **Carduelis flammea cabaret.**

REDPOLL SUBSPECIES.

The redpoll is a widely distributed bird in the Northern Hemisphere, and occurs in six subspecies (here based on Salomonsen, 1928, and Witherby et al., 1938):

1. Mealy redpoll, **Carduelis flammea flammea** (L.). Breeding distribution: Circumpolar, Scandinavia, Russia, Siberia, Canada; winters in middle Europe, Central Asia and U.S.A.

2. Holboll's redpoll, **Carduelis flammea holboellii** (Brehm). Breeds in northern parts of Scandinavia, Russia and Siberia; winters in middle Europe and Central Asia.

3. Labrador redpoll, **Carduelis flammea fuscescens** (Coues). Breeds in Labrador; winters down to north-eastern U.S.A.

4. Greenland redpoll, **Carduelis flammea rostrata** (Coues). Breeds in southern Greenland; winters Canada, U.S.A. and Europe.

5. Iceland redpoll, **Carduelis flammea islandica** (Hantsch). Resident in Iceland.

* This paper was accepted for publication on 16 March, 1953. Its contents had been made available for the Checklist of New Zealand Birds, published in June, 1953.

6. Lesser redpoll, **Carduelis flammea cabaret** (P. L. S. Mull.). British Isles (resident) and Central Europe; in winter, south to Mediterranean.

In addition to these subspecies another species of redpoll comprises two subspecies: Hornemann's redpoll, **Carduelis hornemanni hornemanni** (Holb.) and Coues's redpoll, **Carduelis hornemanni exilipes** (Coues).

Of the redpolls listed above, all but **fuscescens** have been recorded from the British Isles, but only **flammea** and **cabaret** occur in fair numbers. The lesser redpoll is fairly common as a breeding bird in Great Britain, whereas the mealy redpoll is an irregular autumn-winter visitor to the British Isles.

No records are available as to where the redpolls, introduced into New Zealand, came from. Bird catchers anywhere in Europe may have supplied birds for the subsidised introductions 80 and 90 years ago as well as several subspecies might have been caught for shipment in England.

As redpoll subspecies differ mainly in regard to size, Table I has been composed to show differences in measurements to be compared with measurements of redpolls collected in New Zealand. Size differences in several of the subspecies of redpolls are so pronounced that subspecific determination is possible by elimination according to size.

TABLE 1.

Wing and Bill Measurements of Redpolls (after Salomonsen, 1928 and Witherby et al., 1938). Birds arranged in order of size. Measurements in millimetres.

	Wing Length.		Bill Length.	
Subspecies.	Male.	Female.	Male.	Female.
Carduelis f. cabaret	67–73	63–69	8–10	8–9.5
Carduelis f. fuscescens	69–75	71	9–10	8.9
Carduelis f. flammea	71–79	69–76	8–10	7.7–9.1
Carduelis f. holboellii	72–79	71–75	8.7–12	8.9–11.2
Carduelis h. exilipes	73–79	69–76	7.7–9	7.9–8.2
Carduelis f. islandica	75–81.5	75–80	8.2–9.5	8–9.1
Carduelis f. rostrata	77–85	75–82	9.4–11.1	9.8–10.5
Carduelis h. hornemanni	80–88	79–87.5	8.1–10.3	7.8–10

NEW ZEALAND REDPOLLS.

Already a casual examination of the plumages of New Zealand redpolls shows that they do not belong to the **hornemanni** group which is characterized by a pure white, unstreaked rump (cf. Fig. 1).

New Zealand specimens (cf. Table 2) have a wing length of 67-72 mm (males) and 66-69 mm (females), and therefore belong to the British subspecies, the lesser redpoll (**cabaret**) as the obtained measurements fall only within the limits for that form. Furthermore **cabaret** is characterized by its wing bars being buff, not whitish as in **flammea** (cf. Fig. 1), the only other form of approximately the same size; also the New Zealand specimens have a warmer, more brown coloration than the paler, more greyish mealy redpolls.

The main difference between **flammea** and **cabaret** is in size, the wing in **flammea** being on the average 5 mm longer than in **cabaret.**

A total of 36 redpoll skins from various parts of the North Island, South Island, Kermadec Islands, and Campbell Island have been examined (cf. Table 2).

ACKNOWLEDGMENTS.

Grateful acknowledgment for the loan of study skins is due to: Mr. P. C. Bull, Animal Ecology Section, D.S.I.R.; Dr. R. A. Falla, Dominion Museum, Wellington, who also read the manuscript and helped with the literature; Professor B. J. Marples, Otago University, Dunedin; and Mr. E. G. Turbott, Auckland Museum; and to Dr. C. A. Fleming for critically reading the manuscript, and helpful suggestions.

SUMMARY.

The redpolls introduced to New Zealand and now found commonly over most of the country, belong to the British subspecies, the lesser redpoll, **Carduelis flammea cabaret.** Thirty-six specimens from various parts of the Dominion have been examined. The names formerly used, **Acanthis**

cabaret and Carduelis cabaret are not in accordance with the internationally accepted ornithological nomenclature and should be displaced by Carduelis flammea, or when subspecific determination is desired, by Carduelis flammea cabaret (P. L. S. Mull).

REFERENCES.

Salomonsen, Finn. 1928. Bemerkungen uber die Verbreitung der Carduelis linaria Gruppe und Ihre Variationen. Vid. Medd. Dansk Naturh. Foren., vol. 86: 123-202.

Thomson, G. M. 1922. The Naturalisation of Animals and Plants in New Zealand. Cambridge.

Witherby, H. F., F. C. R. Jourdain, N. F. Ticehurst and B. W. Tucker. 1938. The Handbook of British Birds. Vol. I. London.

TABLE 2.—Wing and Bill Measurements of 36 Redpoll Skins from various parts of New Zealand.

Sex.	Date.	Locality.	Wing in mm.	Bill in mm.	Collection and number
M. ad.	4/1/1950	Whanganui R., Lake Taupo	71	8.5	P.C.B.
M. ad.	13/1/1950	Tihoi, western Lake Taupo	69	8.5	P.C.B.
M. ad.	1934	Canterbury	68	8.5	A.M. 447.7
M. ad.	1934	Canterbury	70	8.0	A.M. 447.8
M. ad.	no year	Auckland	68	8.0	A.M. 447.11
M. ad.	24/6/1910	Kermadec Islands	72	8.5	A.M. 447.12
M. ad.	9/8/1943	Campbell Island	70	8.5	D.M. 43.184
M. ad.	15/8/1943	Campbell Island	71	8.5	D.M. 43.192
M. ad.	29/8/1943	Campbell Island	69	8.5	D.M. 43.202
M. ad.	23/11/1943	Campbell Island	69	9.0	D.M. 43.308
M. ad.	27/6/1945	Taieri Plain	71	8.5	U.O
M. ad.	18/11/1943	Gore, Otago	69	8.5	U.O.
M. ad.	14/9/1944	Central Otago	71	9.0	U.O.
M. juv.	4/1/1950	Whanganui R., Lake Taupo	70	8.5	P.C.B.
M. juv.	4/1/1950	Whanganui R., Lake Taupo	68	8.0	P.C.B.
M. juv.	Aug., 1951	Christchurch	68	8.0	A.M. 447.15
M. juv.	Aug., 1951	Christchurch	70	8.5	A.M. 447.16
M. juv.	Aug., 1951	Christchurch	67	8.0	A.M. 447.17
M. juv.	Aug., 1951	Christchurch	67	8.0	A.M. 447.18
M. (juv.)	13/8/1943	Campbell Island	70	8.5	D.M. 43.191
M. juv.	6/11/1943	Campbell Island	71	8.5	D.M. 43.248
M. juv.	8/11/1943	Campbell Island	71	9.0	D.M. 43.250
M. juv.	27/6/1945	Taieri Plain	67	8.5	U.O.
M. juv.	27/6/1945	Taieri Plain	69	8.0	U.O.
M. juv.	27/6/1945	Taieri Plain	69	8.5	U.O.
F. (ad.)	1934	Canterbury	69	8.0	A.M. 447.9
F. (ad.)	1934	Canterbury	66	8.0	A.M. 447.10
F. (ad.)	Aug., 1951	Christchurch	68	8.0	A.M. 447.19
F. (juv.)	Aug., 1951	Christchurch	67	8.0	A.M. 447.20
F. (juv.)	Aug., 1951	Christchurch	69	8.0	A.M. 447.21
F. (juv.)	Aug., 1951	Christchurch	69	8.5	A.M. 447.22
F. (juv.)	3/8/1943	Campbell Island	66	8.0	D.M. 43.181
F.	28/8/1943	Campbell Island	69	8.5	D.M. 43.201
F.	25/10/1943	Campbell Island	67	7.5	D.M. 43.234
F.	17/11/1943	Campbell Island	69	8.5	D.M. 43.245
F.	27/6/1945	Taieri Plain	68	8.5	U.O

The following abbreviations are used:—

M.—Male. F.—Female.

P.C.B.—P. C. Bull, Animal Ecology Section, Department of Scientific and Industrial Research.

A.M.—Auckland Museum.

D.M.—Dominion Museum, Wellington. The numbers given are field numbers of the "Cape Expedition" material.

U.O.—University of Otago, Department of Zoology.

PUBLICATIONS.—The "Checklist of New Zealand Birds" has now been published, and all copies ordered by members have been delivered. Copies are available from the secretary at 10/6 post free. A small number of copies has been interleaved for notes and bound, and these are priced at 20/-. The early cyclostyled issues, republished as "Reports and Bulletins, 1939-42," are available at 10/-, "The Takahe" at 5/-, and small stocks of all issues of Notornis are still held. Prices vary according to the number, and are available from the secretary.

THE DATES OF ARRIVAL OF THE SHINING CUCKOO IN NEW ZEALAND IN 1952.

By J. M. Cunningham, Masterton.

INTRODUCTION.

The shining cuckoo is one of the two migratory cuckoos reaching New Zealand regularly. Arrival dates for a particular district often appear to be fairly regular from year to year, but in some years wide discrepancy is shown. It is probable that the cuckoos arrive in batches over a considerable period rather than in a continual stream, and that the first large groups arrive at a fairly consistent date in September. It is equally probable that the numerous scattered August records are of odd birds, and that these do not represent the arrival of great numbers of birds. While a single bird may often be recorded in a district, there may be no further records there for a week or two, and it is felt that the distinction between these first odd arrivals and the main flood of birds has not been sufficiently considered in the past.

As Fell (1947, Trans. Roy. Soc. N.Z., 76.4 : 504-515) points out (p. 505) "reports [of initial appearance] were scattered over a period of some fifty years and could not be compared with one another; for it is futile to attempt to correlate observations made in one district in one year with those made elsewhere in a different year." He, therefore, analysed 223 records in 1945, but made the mistake of generalising on these records of a single year, concluding (p. 509) that "the first birds arrive in the north and north-east of the North Island in early August, and thereafter the cuckoo gradually spreads south and westward, conforming to the general south-westward orientation of New Zealand."

Earlier nature writers, notably James Drummond, recorded in newspaper columns the birds' arrival in many of the same districts over a period of years, and it is felt that this annual recording in the same districts is the method most likely to give us an adequate picture of the arrival of the birds in New Zealand. Recent writers have given local records in their nature columns and a great many dates are given in the "classified notes" published by the Ornithological Society of New Zealand in its bulletins. But there has been no concerted effort since Drummond wrote many years ago in newspapers to collect records annually from all parts of the country, and it is felt that this would be a useful project. The writer, therefore, launched a pilot scheme in 1952, to be repeated with modifications in 1953, and if any success is indicated, it will be suggested that the Ornithological Society make the scheme a "permanent investigation" on a similar footing with its ringing scheme, nest records and beach patrol schemes (vide Notornis).

METHOD OF INQUIRY.

On September 17, 1952, the "Weekly News" published a letter from the writer asking readers to advise him when they first recorded the shining cuckoo. The letter included the following extracts: "The arrival of the shining cuckoo in New Zealand after its winter absence has not excited the same interest in this country as perhaps does 'the first cuckoo of spring' in England. Nevertheless, a good many people do notice the event. . . The validity of cuckoo records has to be checked rather carefully, and every attempt should be made to see the birds rather than to rely on song alone, which is often mistakenly reported and can be confused with that of other birds. An attempt to see a singing bird is the first step in being self-critical and in ensuring the correctness of records. . ."

On September 3, a circular was sent to the regional organisers of the Ornithological Society and a number of other members, 21 in all, asking for their help. They were requested to watch their local papers for published records, or to write asking for them, and further, to contact persons reporting first arrivals and form an opinion as to the reliability of the observers. Special emphasis was placed on an attempt to discuss other birds with the observers to find out if they "knew their birds." In response to this, regional organisers and members forwarded many reports, most of

them carefully "vetted" for correctness, and these have, in general, been accepted. "Weekly News" readers' reports have been considered carefully and a few rejected. A statement that "I heard the first shining cuckoo on September 20" was not accepted from a person not known to me unless the letter also included information on other birds in the district (as many did), which gave an indication as to whether or not the writer was familiar with birds in general. Much correspondence with some observers was necessary before such an opinion could be formed. Records were also extracted from classified notes in Notornis (1953, 5.3:199) as these are from regular contributors. The number of reports here considered is, however, small, 83, but it is hoped to have reports from most of the same persons in subsequent years, and thus ensure some uniformity of observations, which, over a number of years, will show the general trend of arrival dates.

SUMMARY OF FIRST RECORDS.

The following records are grouped together under dates, from north to south. All reports considered (five were rejected) are included, but the first report from each major locality is given in black type. Of the majority of records, including all the early ones, I am satisfied as to their authenticity. There are a few, however, mainly referring to the flood of arrivals at the end of September and October, from persons not known to me and who gave no evidence on which I could judge the reliability of their observations. The majority of these are probably correct, but are nevertheless, shown in brackets.

August—

7—**Rapahoe Range** (six miles north of Greymouth).
8—Rapahoe Range.
9—Rapahoe Range.
10—Rapahoe Range and Paroa (seven miles south of Greymouth).
16—**Gisborne.**
20—**Stewart Island.**
27—**Ahipara** (near Kaitaia, North Auckland).

September—

10—**Whangarei** (several reports).
11—Gisborne (two reports). **Clevedon** (Ness Valley).
12—Haldane (49 miles south-east of Invercargill).
15—Gisborne (15 miles south-west). **Tolaga Bay.**
16—[Gisborne.] Clevedon (Whakatiri).
17—**Takaka** (seven miles east).
18—**Waimauku** (29 miles north of Auckland).
19—**Wanganui.** [Wanganui. (Okoia, five miles south.)]
20—**New Plymouth** (Pukekura Park, 2 reports). [Tolaga Bay.] **Oruru.**
21—New Plymouth (two reports). **Dunedin** (Leith Valley).
22—[Gisborne. (Waimata, 17 miles).] Gisborne. Dunedin.
23—Clevedon (Moumoukai).
24—**Lake Waikaremoana. Lake Okataina.** [Wellsford.]
25—Nelson (two reports).
26—[**Canvastown.** (32 miles north-west of Blenheim.)] Clevedon.
27—**Levin.** Dunedin (Leith Valley, 2 reports).
28—Nelson. Clevedon (2 reports). Clevedon (Moumoukai). Dunedin.
29—[Warkworth.] [Tolaga Bay.] [Gisborne.] [Morere.] Nelson.
30—[Waiheke Island.] Auckland (Howick 2 reports and Manurewa). Wanganui. Nelson. [Waikouaiti.]

October—

2—[**Rotorua.**] **Waikanae.** [**Inglewood.**] Dunedin.
4—**Orongorongo** (Wellington). [Dunedin.] Lake Manapouri.
5—[Rotorua. (Kaingaroa.)] **Masterton** (Te Whiti). Waikawa.
6—Tokomaru Bay. [Lower Hutt.] Wellington. [Haldane.]
7—Gisborne (Hangaroa). Masterton (Mt. Bruce).
9—[Auckland.]
11—[Gisborne.]
12—[Auckland.] Masterton (town).
13—Near Hoopers Inlet, Otago.
19—[Stirling.] 23—Castlecliff. 26—Auckland.

DISCUSSION.

For the purpose of discussion, records have been grouped in weekly periods commencing in August. In order to present a simplified picture, records are shown mainly on a provincial basis.

Week ending.	No. of reports recd. for N.Z.	Locality.
Aug. 7	1	Westland.
14	4	Westland.
21	2	Gisborne; Stewart Island.
28	1	Far North Auckland.
Sept. 4	0	
11	4 (and "several")	Whangarei, Auckland.
18	7	Nelson, Southland.
25	18	Taranaki, Lake Waikaremoana, Dunedin.
Oct. 2	26	Wellington, Marlborough.
9	13	Wairarapa.
Later	7	Various.

In any discussion of arrival dates it must be realised that there are many uncertain factors. In some areas there is a paucity of observers. In general (as a bird is not often seen without attention having first been drawn to it by its song) the records really present first songs of the birds, and if there is any interval between the birds' arrival and the commencement of song, this cannot at present be assessed. There is also the doubt that people who are not known may be in error in their observations and the only sure way of overcoming this is to accept records only of people widely recognised as competent observers. However, this would limit the records to far fewer, and it is felt that the methods adopted enable an accurate assessment of the valadity of the records.

It will be seen that the first arrivals were reported from widely separated areas, at dates usually looked on as very early. There is little justification for reading any pattern into their distribution. As this paper in concerned with first arrivals only, it is obvious that it can be stated that in 1952 small numbers of shining cuckoos reached New Zealand in August, but there was a progressive increase of records during September, with a peak in the last week of the month. It will be noticed that all the earlier records are from coastal areas, the first really inland records being September 24. Though there is a preponderance of observers in towns near the coast, the possibility is not excluded of the birds' settling immediately they reach land. There is some evidence for this through reports of tired and exhausted birds having been seen on the ground. These reports, as far as I am aware at present, are invariably from coastal areas. This raises the interesting point that several rather early records are from Gisborne, on the east coast, and if the birds made their first landfall there, they would appear to have been flying to the west, i.e., at right angles to the direct line of flight. In a study of the mechanics of migration, it is of importance to know whether a bird has a tendency to fly to a certain point on the globe, or whether it has a tendency to fly in a particular direction. In the former case, as a bird is blown off its course it will be able to reorient itself and eventually reach the point headwind. In the latter case, if blown off its direct course it will continue to fly in the same direction, and thus never reach its goal. In continental areas this is difficult to determine because wind drift is not so important to a migrating bird which may progress at only 30-40 miles a day by feeding en route, and rarely becoming really airborne. But as New Zealand must be approached by sea from all angles, there is an opportunity to settle this point and this may result in a clearer understanding of how a bird navigates. A number of weather maps for August and September 1952 were, therefore, studied with a view to seeing if either of the above two possibilities were favoured. Unfortunately, however, the wind directions were such (mainly head or following winds) that no firm conclusions can be drawn.

PAST RECORDS.

A number of records have been received referring to previous years, and though they are not considered in this paper, it seems desirable to place them on record.

Wellsford (H. H. Clark).—1938, October 3; 1939, October 4; 1940, September 30; 1941, October 5; 1942, October 7; 1943, October 15; 1944, October 11; 1945, October 26; 1946, September 24; 1947, September 28; 1948, October 1; 1949, September 28; 1950, no record; 1951, October 13; 1952, Sepember 24.

New Plymouth (A. B. Norman).—1945, September 28; 1946, September 30; 1947, September 30; 1948, September 24; 1949, September 22; 1950, September 28; 1951, September 23; 1952, September 20.

Masterton (Te Whiti) (W. A. Wardell).—1943, October 7; 1946, October 6; 1947, September 30; 1948, October 1; 1949, October 3; 1950, September 24; 1951, September 30; 1952, October 5.

ACKNOWLEDGMENTS.

It is not possible here to acknowledge the help of every observer, but personal thanks have been given to each. To those regional organisers and others who went to much trouble to collect and verify records, I am indebted and in this regard Messrs. J. C. Davenport, L. Gurr, E. L. Kehoe, W. R. Marsden, W. P. Mead, D. R. Purser, H. L. Secker, Mesdames O. Sansom, P. J. Taylor and L. E. Walker may be especially mentioned. I am grateful also to the Director of the Meteorological Office, Wellington, for his kindly providing a series of weather maps, and to Dr. R. A. Falla for helpful discussions in the early stages.

SUMMARY.

In 1952 a pilot study was made of the dates of arrival of the shining cuckoo (**Chalcites lucidus**) in New Zealand. An indication of the rigorous methods of ensuring the validity of reports, from persons not known personally to the writer, is given. It is indicated that reports from the same persons for a number of years are desirable. There are several August records, the earliest being August 7, but most reports are towards the end of September.

PRIVET BERRIES AS BIRD FOOD.—Evidence of a native pigeon (**Hemiphaga novaeseelandiae**) eating privet berries has been reported to me by Mr and Mrs J. Gandy, of Howick. They observed the bird on several occasions in June feeding on the berries of a Japanese privet tree in their garden. Both last year and this year silvereyes (**Zosterops lateralis**) have fed busily on privet berries in our garden also.—Noelle Macdonald, Howick,

CURLEW AT MIRANDA.—The first curlew (**Numenius madagascariensis**) to be observed at the Firth of Thames for some years were seen feeding on a muddy lagoon near the Miranda limeworks on 6/6/53. The next day the observation was confirmed, when I again visited the area with Mr. H. R. McKenzie. When I first saw the pair they were digging their long, down-curved bills deep into the soft mud, not pausing at all. They appeared very hungry and only when I approached within a couple of hundred feet did they rise together in slow, leisurely flight. They wheeled very slowly in a circle overhead and then alighted again a little further away on the mudflat again. These birds called musically as they flew, unlike the single curlew that Mr. R. B. Sibson and I observed at Karaka on 3/1/53 which called constantly while still on the ground. One bird of the Miranda pair was lighter in colour than the other, but there were no white markings on either bird. When landing, the birds gave several quick twists of their bodies before touching down. Once they flew up with a small party of godwit. Then their larger size was very marked.—Noelle Macdonald, Howick.

REGIONAL ORGANISERS.—Regional organisers are the representatives of the society in their districts to whom members may turn for help and information about the society. Members are urged to meet their organisers for they will be able to be of much assistance. They have a wide knowledge of society activities and will help members to take part in them. They are willing to assist members to make up their notes for sending to the editor, and in some suitable districts organise meetings and field trips for the benefit of members. The council has defined 19 districts, and appointed the following organisers. Other appointments are under consideration, but the council will naturally consider representations from members in the districts for which there is a vacancy:—Southland (east to the Mataura River and including Stewart Island and Gore) Mrs. O. A. B. Smith, Home Street, Winton. Otago (south to the Mataura River, north to the Waitaki River, and including Queenstown), Mrs. L. E. Walker, 15 Cornwall Street, Vauxhall, Dunedin. Canterbury (south to Waitaki River, and north to the Conway River), vacant. Marlborough (south to the Conway River and including Havelock and the Sounds), Mr. B. D. Bell, 6 Graham Street, Blenheim. West Coast, vacant. Wellington (including Upper Hutt and Waikanae), vacant. Wairarapa (including Woodville), Mr. J. M. Cunningham, 39 Renall Street, Masterton. Manawatu (south to Waikanae and north to the Rangitikei River and Ashhurst), Mr. E. Dear, Kopane R.D., Palmerston North. Wanganui (south to the Rangitikei River, north to Waitotara and inland to Waiouru), Rev. H. W. Austin, c/o The Collegiate School, Wanganui. Taranaki (south to Waitotara, north to Awakino), vacant. Hawke's Bay (south to Woodville, north to Wairoa), Mr. D. H. Brathwaite, 11 May Avenue, Box 360, Napier. Gisborne (including Wairoa and Lake Waikaremoana and north to Hick's Bay), vacant. Rotorua-Taupo (including Mamaku, the Rotorua lakes and Kaingaroa), Mr. M. J. S. Black, "Savernake," Tarewa Road, Rotorua. Bay of Plenty (Waihi to Hick's Bay), vacant. Waikato (south to Awakino and Taumarunui, north to Rangiriri and Hikutaia, east to Paeroa and Putaruru), vacant. South Auckland (south to Te Kauwhata and Ngatea, north to Awhitu Peninsula, Karaka, Papakura and Whitford, and including the Firth of Thames and Thames, Mr. H. R. McKenzie, Clevedon. Auckland (south to Manurewa and Howick, north to Helensville and Warkworth), Mr. J. C. Davenport, 718 Remuera Road, Remuera, Auckland. North of Auckland (north of Helensville-Warkworth), vacant.

AN ORIENTAL CUCKOO IN NORTHLAND.—On December 18, 1952, I observed an Oriental cuckoo (**Cuculus saturatus**) in trees by my house. I watched it with binoculars for three-quarters of an hour, one-third of that time at a range of twenty-five feet, in the best of light. Having regard to the value for identification purposes of taking original notes I wrote down the following details on the spot: "Head and upper surface blue-grey; tail dark brown, spotted light; bill horn colour; eyelid bright yellow; long tail, but not excessively long; held on as swallow when resting on upward-sloping branch." I am familiar with the long-tailed cuckoo (**Urodynamis taitensis**) and it was certainly not of that species. A study of the description given by Oliver, "New Zealand Birds," convinced me that I had seen an Oriental cuckoo.—A. H. Watt, Te Kao.

NEW ZEALAND WRENS.—It is a somewhat unusual experience to see in one day three species of New Zealand wrens— the rifleman (**Acanthisitta chloris**), the bush or green wren (**Xenicus longipes**), and the rock wren (**X. gilviventris**). I had been led to understand that, at the time the bush wren was seen it was believed to be present only on the outlying islands and not on the mainland of Stewart Island. In January, 1936, I was one of a party of over 20 Dunedin Naturalists' Field Club members to visit Stewart Island. On January 20, the party climbed Mt. Rakeahua, setting out from the hut at the foot of Rakeahua. In the lower part of the bush the rifleman was seen. When more than half-way up the bush track, Miss M. P. Finlayson (a member of the Society) called the attention of those near her, including myself, to a bush wren. There can be no question of the identification being correct, as, while we watched the bird, Miss Finlayson pointed out the difference between it and the rifleman. When we came out above the bush line, beside a mountain tarn, we saw a rock wren.—I. Tily, Dunedin.

SOME BIRDS OF THE MOKOHINAU GROUP.

By R. V. Roberts, Wellington.

On the 30th December 1952 a call was made at Fanal Island. The following birds were found to be plentiful: New Zealand parakeet (**Cyanoramphus novaezelandiae**), tui (**Prosthemadera novaeseelandiae**) and bellbird (**Anthornis melanura**). Moreporks (**Ninox novaeseelandiae**) were heard several times during the day and one was caught as it came out of a petrel burrow. The bird was photographed and released. It was a young bird. Native pigeons (**Hemiphaga novaeseelandiae**) were heard flying overhead or through the trees several times, but only three birds were seen roosting in the shade. Two pair of pied tits (**Petroica macrocephala**) were located near the waterholes and both pairs were very shy. Their calls were heard for some time after they had moved away from the waterhole.

Starlings (**Sturnus vulgaris**) were very plentiful on the **Phormium tenax** and the adult birds were accompanied by a number of young. In the empty nest of a tui, found in manuka scrub at a height of just on seven feet from the ground, a few nest feathers were found covered with a grey lice usually associated with starlings.

The main muttonbird on the island is the **Pterodroma macroptera,** the grey-faced petrel. The majority of the young birds had already departed from the burrows. A sooty shearwater, **Puffinus griseus,** was found sitting on a very dirty, discoloured white egg, which measured 73x50 mm., and the fight put up by this bird and one or two others assured the Maoris that the burrows were occupied by a much fiercer petrel than the grey-faced petrel. The sooty shearwaters nest on the island some five to six months later than the grey-faced petrels.

Although kaka (**Nestor meridionalis**) calls were heard many times, no birds were seen. Two calls were traced to a young tui. The Maoris stated that kaka have been seen on the island in the last three years. At the main island of the group, Burgess Island, where we put in the following day, 31st December, 1952, the head lightkeeper told us that kaka migrated through the island from the north at a certain time of the year and perched near the light for a day only, to disappear to the south on the following night.

On the 31st the young of a grey-faced petrel was photographed, together with a young red-billed gull (**Larus novaehollandiae**) which could not fly. Many of the young red-billed gulls had walked away from one of the nearby colonies towards the wharf where there was much activity. These gulls were very hungry and fought bitterly for every scrap of food. Over 1200 red-billed gulls were counted on the beach when fish were being cleaned. Young gulls unable to fly, ran down the tramway towards the beach, attracted by the loud screaming of the birds on the beach.

At the foot of the lighthouse were many dead white-faced storm petrels (**Pelagodroma marina**). One of their known nesting islets is just to the south of Burgess Island near the wharf. In the afternoon, a flock of red-fronted parakeets flew from Ladies' Island to the only stand of pohutukawa on Burgess Island, with much chattering. Six or seven were counted that afternoon. Lone large pied shags (**Phalacrocorax varius**) were seen on low-lying rocks near the shore of the outlying islands to the westward of Burgess Island. Grey-faced petrels were found nesting on several of these islands, but no sooty shearwaters.

On the return journey later that afternoon an immature parasitic jaeger (**Stercorarius parasiticus**) followed the launch for some time. The bird was in the light-phase plumage. It pursued many of the gulls which had collected for scraps of meat thrown overboard from the launch. The bird circled the launch many times and flew some distance away at times to chase gannets (**Sula b. serrator**) and white-fronted terns (**Sterna striata**) returning with food for their young. The chase could be seen in its entirety until the skua was diving downwards to pick up the food dropped by the harried bird. In every case the bird robbed of food continued flying in the same direction. The gannets and terns were flying towards Cathedral Rocks and not southwards. The skua on occasions rested on the sea until

the launch was perhaps a quarter of a mile away but the bird had no difficulty in catching up with the launch in a matter of seconds. We encouraged it to follow by feeding pieces of meat and fat to the gulls following the launch.

The white deposit of guano on Cathedral Rocks could be seen many miles away. There was no direct evidence to show that the rocks were used this year as a breeding ground, but it is possible as the gannets were flying in that direction. The only other likely place would be Groper Rock. The Maoris informed me that gannets had bred on Groper Rock a few years ago but were apparently driven off by the enormous numbers of mosquitoes that bred in the fresh-water lake in a crater on top of the rock. The Maoris who were fishing nearby for kingfish, landed to have a look at the young birds. Perhaps if the insects were killed by a small application of oil on the freshwater lake, the gannets might come back to the rock.

In the late afternoon a black-browed mollymawk (**Diomedea melanophris**) circled the launch several times. The black upper wing coverts with no wing patches of white, the black feathers across its back, the black edging of the undersurface of the wings and the large black eye patch immediately caught my eye and established its identity without question. A giant petrel (**Macronectes giganteus**) was seen a few minutes later as we approached the Needles. A few unidentified petrels were circling towards the small islands off the coast of Great Barrier Island itself, but in the twilight it was not worthwhile guessing their identity.

On the previous day, however, in the strong sunlight and calm seas, the petrels were seen to advantage, particularly between Katherine Bay and Fanal Island. The most common species was the fluttering shearwater (**Puffinus gavia**) which was seen in large flocks. The two white side patches identified these birds for us. The plump and round-bodied diving petrels (**Pelecanoides urinatrix**) only took to the air when the launch came very close to the flocks. Some birds were seen to almost fly right out of the water. Some were so heavy with food that they had difficulty in taking the air and sank back to paddle furiously away from the launch as it neared them again. It was a field day for petrels as all allowed the launch to approach closely before they took to the air. Although some 2000 petrels were seen in the 3½-hour trip it was only possible to identify single petrels that came close enough to spot the difference. Odd sooty shearwaters, grey-faced petrels, flesh-footed shearwaters (**Puffinus carneipes**) were easy when one could see the bill closely. Many smaller petrels were also seen.

THE WINTER FOOD OF THE BLACKBIRD IN N.Z.

By C. McCann, Wellington.

The widespread occurrence of the black nightshade (**Solanum nigrum**) (Linn.) an exotic weed, in all possible localities, many far distant from human habitation and influence, set a trend of thought in motion. How did this almost cosmopolitan weed spread so fast in New Zealand? As the fruit of the plant is a berry and a poisonous one at that, the most likely agent of dispersal was in all probability a bird. It was not long before I discovered the most likely bird, the blackbird (**Turdus merula**). Whenever the life-cycle of a bird and a plant are linked, it becomes necessary to study the interrelation that exists between the habit and habitat of the two individuals. This is common to any interrelation. However, before going further, it is necessary to clarify a few points.

Frequently, I have heard the black nightshade (**S. nigrum**) referred to as the deadly nightshade. The deadly nightshade is known as **Atropha belladonna** (Linn.) and is the source of the drug, belladonna. It is more poisonous than the black nightshade and as far as I am aware does not occur in New Zealand. Both the nightshades belong to the same family, **Solanaceae**, a family, strangely enough, which embraces some of our commonest food plants, such as the potato, tomato and several others. The family contains a poisonous substance peculiar to itself known as solanine,

besides other poisons, such as the belladonna referred to above. Solanine varies in quantity with the various species and at different stages of growth.

The green tissues of the black nightshade (**S. nigrum**) are known to be poisonous. Although the berries are known to be injurious to children, they have frequently been eaten by adults without any ill-effects. However, this is no reason to try them out! It is well-known that certain chemical changes take place within fruit when about to ripen and accordingly we must expect a possible reduction in the amount of poison present in the fruit of the nightshade when fully ripe, more so when the plant is largely dependent on some animal agent for the dispersal of its seed.

Close observation soon convinced me of the role the blackbird played as an agent of dispersal for the black nightshade. I watched them feeding on the berries and an examination of the excreta confirmed my observations. The blackbird is an omnivorous feeder and is particularly partial to fruits of many kinds. On this account it is not only a pest in orchards but is also a dispersal agent for some plant pests, such as the blackberry. The pulp of the fruits is digested and the seeds are passed out uninjured, in fact, the passage of seeds through the alimentary canal of a bird often enhances their chance of successful germination.

In habit the blackbird is somewhat a skulker and crepuscular, favouring undergrowth, but not averse to coming out into the open. The crepuscular habit of the bird easily explains the presence of the nightshade under bushes and trees both in the forest and in gardens. Under such lighting the dark purple berries of the nightshade are not very conspicuous. However, the nightshade seems to "get over the difficulty" by ripening its fruit when little or no other fruits are available!

Let us look into the life-cycle of the nightshade for a bit before proceeding any further. The nightshade is an annual, but under favourable conditions some plants exceed their allotted span of life. The seeds generally start germination between February and March of each year and soon develop clusters of green berries which remain on the plants, ripening only in late autumn or early winter. The berries continue to ripen slowly throughout the winter. Under the circumstances, the nightshade is one of the few berries available throughout the winter period and so constitutes one of the main sources of fruit for the "hungry" blackbirds. Probably, at other seasons when other fruit are available, the blackbird would not bother to look for the obscure berries of the nightshade! It would almost appear as though the plant had adjusted its fruiting period to its own advantage!

Thus, during the winter months and early spring, the nightshade berries constitute the main source of berries for the blackbird. That the birds are not poisoned by the large number of berries they consume may be explained by the fact that the blackbird is immune to the poisonous properties of the nightshade or that the amount of poison in the ripe fruit is not sufficient to have a serious effect on the birds. However, I have noticed that when the birds are feeding almost exclusively on nightshade berries the berries produce a form of looseness of the bowels, the effect of which is often visible on the walls of houses and window panes, as the birds fly past. A similar result, but to a much greater extent, I have witnessed in the case of the Asiatic race of the blackbird when it fed almost entirely on the ripe fruit of **Olea dioica** Roxb., an Indian olive. The fruit is extremely bitter, yet the birds did not seem to mind this quality!

From the observations I have made it appears that the blackbird is largely responsible for the dispersal of the black nightshade in New Zealand. The habits of the bird and its food cycle link up with the growth and development of the nightshade. However, there is one point which I would like to draw attention to, namely, that although nightshade berries are available at the time when the young are hatched, the young appear to be fed almost exclusively on soft-bodied insects and earthworms.

STILTS NESTING AT ARDMORE, 1952-53.

By A. F. Stokes, Ardmore.

Observation of nests and chicks of the stilt (**Himantopus himantopus**) in the 1952-53 season was extremely difficult owing to the abnormally tall growth of grass and weeds. For this reason the delicate matter of fixing the beginning of incubation was not achieved.

NEST No. 1.

1/9/52.—Nest; 4 eggs; female sitting. This bird, I am sure in my own mind, is the one that I have seen breeding every year from the beginning. She was of the same small size, nested in the same area, was consistently and exceptionally tame, and kept up distinct individual habits. If this is so she is at least nine years old to the spring of 1952.

14/9/52.—One chick running about. Three just hatched.

16/9/52.—Only three chicks.

5/10/52.—Three chicks ringed.

15/10/52.—All flying four or five yards. This gives a hatching to flying record of 31 days.

30/10/52.—At 6 a.m. a hawk was flying off with a chick which it dropped when I shouted. I removed the rings. The other two chicks were very frightened and although they could fly well, they hid in a gorse hedge all day, coming out at 6.45 p.m. The next day they still hid and I did not see them come out until 8.45 a.m. on 1/11/52, on which day they kept close to the hedge all the time. This seemed unusual behaviour for this species. These two chicks departed safely.

NEST No. 2.

10/9/52.—Nest; 1 egg.

11/9/52—Two eggs.

12/9/52.—Three eggs.

14/9/52.—Four eggs.

8/10/52.—Four eggs hatched and left nest. These were not subsequently traced.

NEST No. 3.

17/9/52.—Nest; four eggs; on the farm of my neighbour, Mr J. Goertz.

29/9/52.—Three hatched.

1/10/52.—One hatched.

2/10/52.—Three chicks out of nest; one dead in nest.

3/10/52.—Family moved north along swamp. About ten days later they joined the other stilts over the fence on Mr. A. Stokes's farm. The chicks were probably lost before this.

NEST No. 4.

13/10/52.—Nest; four eggs. Bird sitting. Hatched later, but chicks not seen.

NEST No. 5.

24/11/52.—One adult with one small chick, and one with two.

16/12/52.—Chicks were brought to wet place by cowshed. Only one of these was reared and the family left on 1/2/53.

NEST No. 6.

December, 1952.—Clutch hatched down by creek.

18/12/52.—Two chicks brought to cowshed.

11/1/53.—Chicks ringed.

13/1/53.—Both flew.

17/1/53.—Family departed.

Oddly enough, a young bird of the season came here on 9/4/53 and is still here on 26/4/53, alone, except that three adults paid a visit on 19/4/53.

Of the No. 3 nesting pair, one bird was noticed on 29/9/52 to have a ring on its right leg. With Mr. and Mrs. J. Goertz I viewed it on 30/9/52 at about one yard, the bird standing and flapping its wings at us furiously. The ring was silvery, but stained. Fearing injury, no attempt was made to

catch it and read the ring number. There is little doubt that the ring was one of those made and put on by F. Murray on 22/1/47. (See "New Zealand Bird Notes," Vol. 2, No. 2, p. 26.) Two chicks were ringed that day with white metal home-made rings numbered respectively 47-1 and 47-2, both on the right leg. No. 47-1 was much the larger chick and the present bird is a very large stilt so it is probably the first of the two ringed. If it is one of these it was nearly six years old when found. The ring was hard to see and the bird could have been present each season without its ring being noticed. All observers agreed that this was the fiercest stilt they had known. It would swoop wildly, throwing forward its "shoulder" to stiffen the wing for striking. This was not bluff for it actually struck with the wing. It could be, therefore, that a bird at the age of six years is in full vigour.

REQUEST FOR INFORMATION.—Miss G. di Menna, 23 Mardale Street, Roslyn, Dunedin, invites members to pass on to her information relating to the distribution of the brown creeper, yellowhead and whitehead. She would like to know what other native and introduced birds occur in the same habitat and if possible, an indication of the class of habitat, i.e., Pinus insignis plantation, Podocarp (native pine) bush, beech forest, manuka scrub 15ft. high, etc. Miss di Menna is doing research work on the brown creeper.

REPORTS AND BULLETINS.—The reprinting of the society's cyclostyled issues as "Reports and Bulletins, 1939-42" was made possible by the donations received. These do not appear in the accounts as donations as they were credited to the reprinting account together with orders for the reprint, but their receipt is here acknowledged with thanks, as follow:—I. A. E. Atkinson, A. G. Bagnall, B. D. Bell, M. J. S. Black, A. A. Boult, P. C. Bull, W. J. Burns, J. C. Davenport, E. Dear (10/- each), C. A. Fleming £5, G. V. Gow 10/-, R. L. Grant 35/-, Mrs. J. Hickman, late E. W. Hursthouse, W. R. Marsden, D. Miller, G. J. H. Moon, L. W. McCaskill (10/- each), Miss N. Macdonald 12/6, Miss B. McDougall 10/-, H. R. McKenzie £2, D. Macmillan £3 10s., R. St. Paul £1, Mrs. M. A. Scott 10/-, T. Shout 10/-, R. B. Sibson 22/-, E. G. Turbott £1, C. K. Williams 10/-, R. A. Wilson 10/-, G. H. Young £1, J. A. Tubb £1; total, £28/9/6.

BEHAVIOUR OF OYSTERCATCHERS.—On 3 September, 1952, I was on Taieri Beach, south of the river mouth; a strong nor'-easterly was blowing in from the sea. Conspicuous against the white sand was a group of six black oystercatchers (**Haematopus unicolor**). From some distance, a friend and I saw one bird standing as if on guard and facing seawards, the other five all standing on one leg. The strong wind may have prevented us from being heard as we were able to approach within 30 yards of the birds, which seemed intent on their "game." As if on a given signal, the five birds danced round in a small circle; then they stood on both feet for a spell; then off again round and round on one leg. This was repeated several times and the birds took no notice of us. As it was so cold we had to move on and walked towards the group, and it was not until the sentinel bird turned its head and saw us that they flew off.—Mrs. A. C. Prentice, Dunedin.

WHITE-FACED HERON INQUIRY.—An inquiry is being made into the status of the white-faced heron (**Notophoyx novaehollandiae**) and members are invited to submit sight records, localities where seen, field notes of any kind, and especially breeding records, to J. H. Sorensen, 25 Arawa Road, Hataitai, Wellington, E2.

A home-made aluminium ring bearing the inscription "W411" was taken recently from the leg of a white-eye caught near Clarkville, North Canterbury. The society has no record of the use of this ring and as convener of the Ringing Committee I would appreciate any information which might lead to the discovery of circumstances under which the bird was ringed.—P. Bull.

BLACKBIRD BEHAVIOUR.

By Rae Shanks, Cambridge.

Early in May, 1952, I first noticed two male blackbirds fighting in the fowlrun. One (No. 1) had a billful of short lengths of nectarine leaves which he used as a shield; on some days, however, he hopped round after the other bird (No. 2) without the leaves. The latter bird, of a long, thin build, contrasted sharply with No. 1, the stocky, self-possessed warrior, as they proceeded with their war. One day they became locked in battle after fluttering in the air together, and each one tried (often succeeding) to grab the other's bill with his. For the rest of May, the fighting was much the same: No. 1 hopping after No. 2, then No. 2 after No. 1, the fighting always in the fowl run, and for variation No. 1 sometimes included grassroots in his shield.

On June 1 they fought for 10 to 15 minutes, then No. 1 picked up a long nectarine leaf, not snipping it in half as usual, but folding it along the central vein and grasping it by the middle. He fluttered up and down with No. 2, still hoding his leaf, which became torn and ragged, but he did not change it as he usually did. The fights always consisted of No. 1 chasing No. 2, both birds turning their backs to each other, and then No. 2 chasing No. 1, in and out under the hedge.

July came, with a change of ground. No. 1, pecking around as if getting worms on the rose garden, picked up some bedraggled leaves and chased No. 2 to the compost heap, below the old fighting place. No. 1 returned to the rosebed and a female entered the picture for the first time. She and No. 1 hopped round together (the same method as No. 1 and No. 2 used). He twice picked up a crisp beech leaf and dropped it after carrying it a few hops, but she moved off. He hunted worms and hopped close in round the trunk of the beech, with its low branches close over his head—this became a favourite haunt. No. 2 was advancing from down the lawn; No. 1 hopped towards him, but No. 2 pretended to hunt worms in the side bed. No. 1 went on hunting in his rose garden, but a quarter of an hour later he picked up leaves—No. 2 had appeared, eating a worm on the rosebed. As soon as he hopped to the compost, No. 1 dropped the leaves; five minutes later No. 2 encroached again, but hopped off later, and No. 1 was seen with the female.

It was August, with No. 1 and the female zig-zagging on the lawn. After sunset, two male blackbirds were flying up together several times on the edge of the lawn. Another male joined them, and they all hopped round. Nearby, apparently uninterested, was the female. A cat stalked them, and there was a great "dinking." The next day, two or three blackbirds were hunting on the lawn. That did not appear to worry No. 1, by his beech tree. But as soon as No. 2 advanced on the rosebed, No. 1 picked up a beech leaf, scooped several more up, and with head lowered, charged No. 2. At the end of each little run of hops, No. 1 paused, raising his head (the leaves hampered his view) to see No. 2's reactions. This action was a customary one.

A week later, on the side lawn, No. 2 had a long length of straw (for nest?), and No. 1 chased him with his chestnut-leaf shield. No. 2 dropped the straw and was chased by No. 1 with a new billful of leaves. He flew to the other end of the lawn with his leaves, something he had never attempted before. He hopped back and chased No. 2 in circles, No. 2 clinking violently. A third male flew out of the chestnut tree and chased both of them. They parted, with the female watching. The third male hopped off (he hopped sideways!). The next week, No. 1 and No. 2 were together, No. 2 a very ruffled bird with his chest feathers half pulled out. No. 1 picked up leaves and they flew 6ft. together, No. 1 losing one or two of his leaves, but when he landed he still had some stiff beech. No. 2 flew 10ft. on to the side lawn, with No. 1 in pursuit, still with his leaves. No. 2 flew into a tree and No. 1 looked this way and that. He held his leaves as far down his bill as he could, and did not unclamp his bill. He rapidly flew right round to the back of the house, via the fowl run, where another blackbird on seeing him, "te-he-hed" and flew to the top of a fruit tree.

The following day the three male blackbirds were by the beech. Later No. 1 chased No. 2, No. 1 with the usual leaves. Then came a change in tactics. No. 2 picked up a leaf (he did not know the art—it dangled out of his mouth at one end, like a pipe) and hopped after No. 1. Several times he changed his leaf, eventually holding a crisp one like No. 1, who did not swap leaves, except for dropping one at a time and adding. No. 1 and also No. 2, flew up into a tree with their leaves. It was merely a stately game. Next week, the female was seen hopping round after one of the male birds.

The four-month "war" stopped—No. 2 had played the game. Probably nesting had begun, as a week before I had seen a male blackbird flying with a worm. I do not know which of the three males the female won, but all appeared satisfied.

REVIEWS.

Secondary Song: A Tentative Classification. M. D. Lister, 1953, Brit. Birds 46.4 : 139-143.

All those of us who speak glibly of "whisper song" and "sub-song" should read this. The author prefers to describe a bird's normal loud specific song, which is most in evidence in spring but is given by some species at other seasons as well, as "primary song." "Secondary song" can include "whispering song" ("the very quiet, inward rendering of the primary song," audible not more than about 20 yards); "sub-song" ("the very quiet inward rendering of song which is intrinsically different from the primary song . . . It is not always easy to distinguish between the whispering songs and sub-songs of those birds such as blackbirds. . ."); "rehearsed song" (imperfect versions of the primary song); and "female song."

In New Zealand the "rehearsed song" is usually known as "part song," and the tui has a true "whisper song." It is not generally realised that such birds as the chaffinch and greenfinch have extremely quiet and sweet warbling songs which certainly are "sub-songs," and the song of the silver-eye, described by Miss N. Macdonald (Notornis 4.4 : 127) also falls into this category.—J.M.C.

On the Hour of Laying and Hatching of Birds Eggs. A. F. Skutch, Ibis 94 (1) : 49-61.

This interesting paper analyses many records of the time of laying and hatching of eggs of Costa Rican birds. Many birds lay soon after dawn and each species has its own time of laying. These show less variation in the hour of laying than those laying later in the day. Some birds lay successive eggs at 24-hourly intervals and others at 25 or 26-hourly intervals. Hatching in some species takes place a fixed time after incubation commences but in many others there is a far higher percentage that hatch in the morning whatever the time of laying (and if hatching is delayed, the eggs may fail to hatch until the following morning, a day late). It is suggested that there is a diurnal rhythm in the birdlings' efforts to break through and escape from the shell, probably due to constant warming during the night when a parent is on the nest without a break for many hours.—J.M.C.

The Antarctic Today. Edited by Frank A. Simpson, M.A., Dip. Jour. Publishers: A. H. & A. W. Reed, in conjunction with N.Z. Antarctic Society. Price, 47/6

New Zealand's interest in the Antarctic is important, especially in the Ross Dependency. Explorers, since the time of Sir James Clark Ross, over 100 years ago, have proved that the Ross Sea, almost ice-free in the summer months, and leading well into the heart of the land mass, is the best one for outside approach. Because the hinterland is a New Zealand dependency and the Dominion the closest base to serve it, the view has been expressed frequently that the Ross Sea-New Zealand summer air and sea routes are

the logical outlet for the vast mineral wealth so confidently predicted by geologists to await exploration.

For the British Commonwealth, Antarctica may have a strategic importance, quite apart from the whale fisheries and mineral resources, in what may become, in the event of a future world conflict, the new life-line between Africa and Australia across its icy wastes. In view of the potentialities of Antarctica, New Zealand is likely to play a part in the subduing of its rigours attendant on exploration. Although New Zealand has long provided a base for explorers from other countries, there has been little published literature reflecting New Zealand's relationship to its own Ross Dependency, or to Antarctica as a whole. Practically all literature on the subject is of Northern Hemisphere origin, the product, direct or indirect, of expeditions organised by larger and older nations; relatively little has come from the younger countries which are geographically nearest the Antarctic—New Zealand, Australia, South Africa and South America.

The publication of "The Antarctic Today" represents an important break with this tradition and depicts the Antarctic as observers in the Southern Hemisphere see it. Written in seven parts, each part taking an aspect of Antarctic conditions or problems, the contributors of each have been well chosen as men to the fore in their scientific or academic researches. From the first part, "The Mysterious South," the introduction by John S. Cumpston; through "Continent and Ocean"; "Natural Life"; "From Ocean to Continent"; "Meteorology, Aurora, Ionosphere"; "The Nations in the Antarctic"; to "New Zealand and the Far South," the reader will find question posed or answer given to many aspects of this vast area of about 6,000,000 square miles.

To members of the Ornithological Society the section on "Natural Life" will hold the greatest appeal; nor must they be disappointed with its brevity, for any phase—seal, penguin, whale, etc.—could provide material for a volume on its own. The contributors to this section, R. K. Dell, W. H. Dawbin, R. A. Falla and E. G. Turbott, need no introduction; they are acknowledged experts in their own fields. The marvel is that they have condensed so much information in such a short essay.

The volume is well illustrated and if one could find fault at all, it is that the excellent studies do not appear next to the text relating to them. As the New Zealand Antarctic Society says, "it is proud to make this first major New Zealand contribution to the reference literature on the Antarctic regions."

The price is 47/6 and this handsome volume of authoritative material should find a place of honour in the library, reference or general, of all interested in the Dominion of New Zealand and its relation to the "Deep South."—J.H.S.

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