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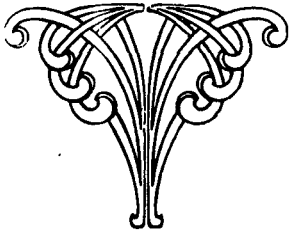
New Zealand Bird Notes



Bulletin of the Ornithological Society of New Zealand.
Published Quarterly.

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Bulletin of the Ornithological Society of New Zealand.

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CONTENTS.

POST-BREEDING FLIGHTS OF GANNETS.—Mr. Max Nicol informs me that every day during Easter, March 26 to 29, 1948, while he was fishing about a mile off Flat Point (south of Castlepoint), flocks of gannets **(Moris serrator)** continually flew south over his launch. Although there was scarcely a time when no birds were to be seen, more flocks were noted on the 26th than on the other days. The flocks flew mainly about 50 feet up, and were never diverted from direct and purposeful flight by crowds of other birds, terns and gulls, feeding on shoals of fish. Indeed, none was seen to fish at all during the period. Mr. Nicol states that each flock consisted of either adult or immature birds, the two never mixing, and they averaged about a dozen to twenty birds. He took particular note of these flocks and their composition of either adult or immature birds in response to my request for fuller details last year when he observed something similar. There is little published information about the time and method of dispersal of gannetries, but no doubt these flocks would be from the Cape Kidnappers colony.—J. M. Cunningham.

CLASSIFIED NOTES IN NEXT ISSUE.—Members are reminded that classified notes will be published in the January issue. Notes should be sent immediately to the district organisers so that they can be in the hands of the editor not later than October 16.

CONTRIBUTIONS TO THE GANNET CENSUS.

XI.—WHITE ISLAND GANNETRIES; JANUARY 8-14, 1947.

By Rev. F. H. Robertson and Kazimierz Wodzicki.

The following account summaries observations made during the visit of a scientific expedition of the Department of Scientific and Industrial Research, January 8 to 14, 1947.

Gannets **(Moris serrator)** now nest in three places (Fig. 1).* The gannetries marked Nos. I. and II. are readily accessible by land through the track leading from the old factory in Crater Bay to the site of the workers' camp. These were visited several times. The access by land to gannetry No. III. is much more difficult and this colony was visited only once by Messrs. C. A. Fleming and Dr. W. M. Hamilton, to whom we are indebted for a sketch plan and a count of the birds. The predominant vegetation of the island is a forest of pohutukawa but in some places round the gannetries there is thick growing taupata **(Coprosma retusa)**. Where, however, the scrub has been killed by the gannets there occurs a **mesembryanthemum** association succeeded in some places by rank growing masses of **Poa anceps**.

A.—Gannetry I.

There are two nesting areas separated by a ravine. Counting in sub-colony 1a was rendered difficult by its large size and the great shyness of the gannets. The most satisfactory counts were made with the help of field glasses from the slopes above the gannetry. No count was made of eggs here. There were only 21 chicks, the majority of which were in the naked or down stage. The total of gannets counted was 1,280 pairs. In this colony there were quite large areas of guano-covered ground without nest mounds in addition to a considerable number of unoccupied mounds.

Sub-colony 1b was smaller in area and there was not such a large area of unoccupied ground. The count gave 465 pairs, 158 eggs and eight chicks.

B.—Gannetry No. II.

This gannetry consists of four sub-colonies of which sub-colony C consists of two distinct parts separated by a depression. Here, too, there was unoccupied ground. Sub-colony D was not noticed by the writers and in aerial photographs appears to be a roosting place with three or four birds present.

The following table gives the results of the counting:—

	Sub-colony			Total for
	a	b	c	Gannetry II.
Gannet pairs	245	40	322	607
Eggs	98	18	111	227
Chicks	5	2	11	18
Empty mounds	178	70	553	801

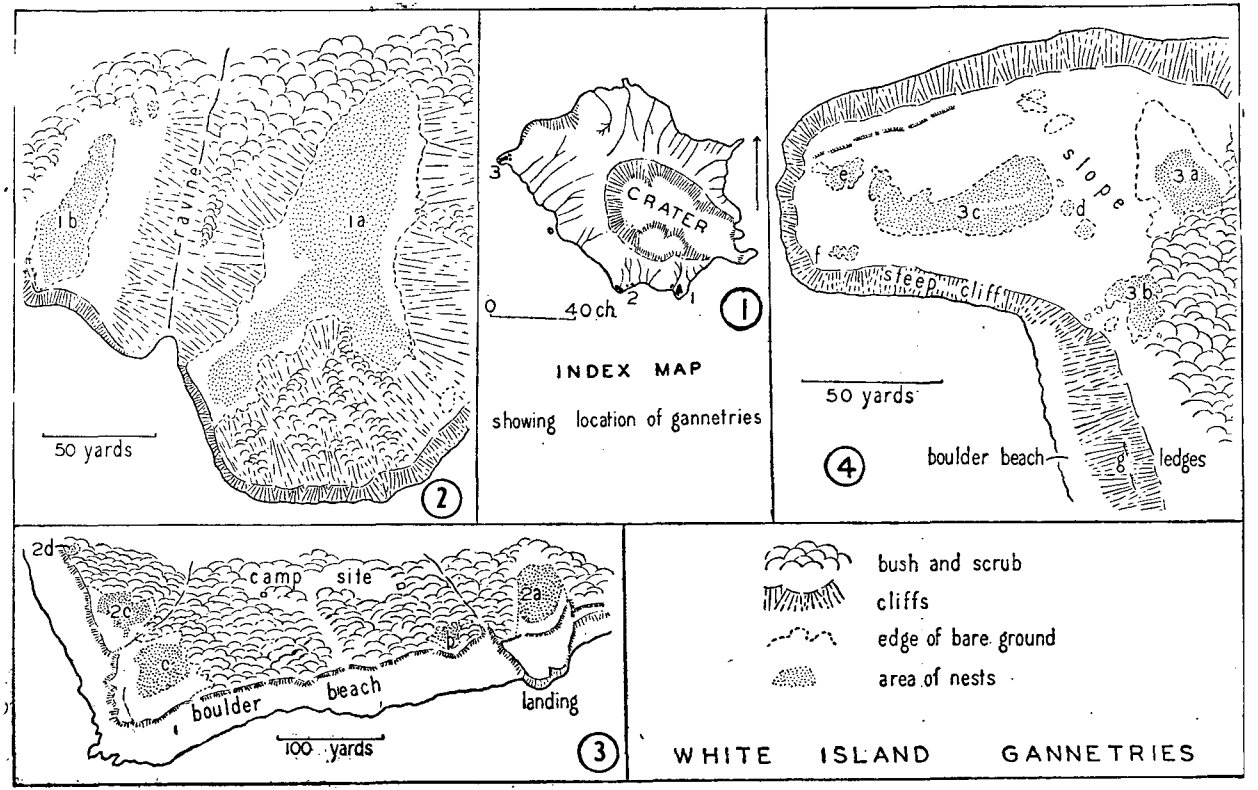
C—Gannetry No. III.

In addition to the seven sub-colonies in this Group there were about six guano-covered places, apparently roosting places of the gannets (Fig. 4). For reasons stated above only a partial count of the eggs and chicks present was made:—

	Sub-Colony							Total
	a	b	c	d	e	f	g	Gannetry III.
Gannet pairs	161	105	374	25	25	12	8	710
Eggs	–	–	–	–	12	10	–	
Chicks	–	2	5	–	1	0	–	

– No count taken.

* This and the other figures have been very kindly drawn by Mr. C. A. Fleming.


1b
ravine
1a
50 yards
2
CRATER
3
2
1
0 40ch
1
INDEX MAP
showing location of gannetries
slope
3a
e
3c
d
f
steep cliff
3b
50 yards
4
boulder beach
ledges
2d
camp site
2c
2a
c
b
boulder beach
landing
100 yards
3
bush and scrub
cliffs
edge of bare ground
area of nests
WHITE ISLAND GANNETRIES

General.

The above figures in the case of the larger sub-colonies are means of several counts made by two observers. Accurate counting was made more difficult by the fact that when the colonies were approached a number of birds, sometimes more than a hundred, which were occupying nesting mounds, took to the air, and some at least did not return before the counting was completed. In colony Ia it was difficult to secure an accurate count, but the counts made are within about 50 pairs of the mean.

The total count for the three gannetries was accordingly 3,076 and the total population can, therefore, be assumed to have been approximately 3,000 pairs. There is some evidence that the gannetries were disturbed earlier in the season and this may account for the extremely small number of chicks found. The small number of chicks, the large number of only slightly incubated eggs and the number of unoccupied gannets and empty mounds made the situation at White Island most perplexing. It is illustrated by the following figures:—

Percentage of	Colony 1b	II.	III.
Pairs with eggs	34	38	—
Pairs with chicks	1.7	2.6	1.6*
Unemployed	64.3	60.4	—

* Only b, c, e, f, examined

On the other hand, somewhat similar conditions were found in some other gannetries visited during the 1946-47 census. It is clear that the gannetries at White Island could accommodate a substantially larger population than was found during our visit.

There were a number of red-billed gulls **(Larus novaehollandiae)** constantly foraging on each of the gannetries. They appeared to subsist largely on food found there but no attempt to break and eat gannet eggs was observed. A total of six dead birds were counted on gannetries I. and II. One of these had been shot and died during our stay.

XII.—GANNETRIES NORTH OF AUCKLAND, SEASON 1947-48.

By G. A. Buddle.

During the course of a trip to the Three Kings at the end of December, 1947, opportunity was taken to inspect the gannet colonies at Poor Knights Rocks, Karaka Point and Three Kings: owing to bad weather conditions no landings were made, and no count of gannets en route as was made last year could be made.

Poor Knights Rocks. (11/1/48.)

A group of four rocky islets lying about four miles to the S.W. of the Poor Knights: three are grouped about 100 yards apart and the fourth and largest about a mile to the westward. The two centre ones are about 100 yards in diameter and 75-100 feet in height, and carry a scanty vegetation of wind-swept scrub which appeared from the sea to be mostly ngaio, taupata, mesembryanthemum, etc. Both could easily be landed on in fine weather. There are no nesting colonies of gannets on either of these, but probably a few petrels nest on them.

The gannetries are on the two outer ones. The easternmost one is a small rock stack with smooth, vertical cliffs on all sides, about 25 yards in diameter and 75 feet in height with a flat top which is closely packed with nesting gannets. We estimated the population at about 150 birds. There is no possibility of either landing on or climbing this stack; an aerial photograph is the only method of obtaining an accurate count. The main colony is on the western rock of the group (often known as the Sugarloaf) about a mile distant. This islet is a pyramidal

rock about 100 yards in diameter and 150 feet in height, with little or no vegetation. It is somewhat broken at the western end and in reasonable weather a landing could easily be made, and an ascent to about half way up would not be difficult, but there appears to be no possibility of getting beyond that to the numerous ledges on which the gannets are nesting, and an aerial photograph is the only means of obtaining an accurate count. There appear to be few if any red-billed gulls nesting, so that complete accuracy could be secured by this means. We estimated the population to be 1,200-1,500 birds, but as the top plateau is not visible, this would be a rough guess only.

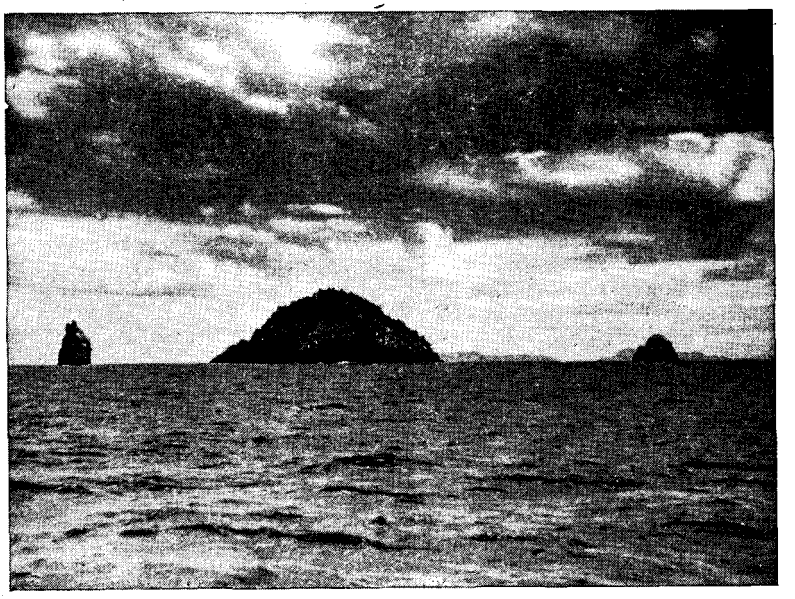


Photo: G. A. Buddle.

THE POOR KNIGHTS ROCKS.—Gannets nest on the two stacks on left and right, but not on centre. Estimated population: 100-150 birds on the left; 1200-1500 birds on the right (The Sugarloaf).

Karaka Point (Cape Kare-Kare). (12/47.)

The small nesting colony reported last year (N.Z. Bird Notes, Vol 2, No. 6, p. 128) as having been established on two outlying rocks was evidently not satisfactory, as it is not in use this season. Very few gannets were seen in the locality.

Three Kings. (1/1/48.)

Owing to adverse weather conditions no landings were possible this year, but a fuller examination from the sea was made.

South-West King.—Some of the smaller isolated colonies had definitely increased in size, and there appeared to be more birds moving in the vicinity of the main colony.

Princes Islands.—The same remarks apply to the Princes Island colonies, particularly to the two outer colonies in the chain of four occupied rocks. Several areas that were bare or were occupied by red-billed gulls are now in use by gannets. The closer and more detailed observation from the sea which was possible on this occasion showed to what a great extent the gannets and red-billed gulls were intermingled in the nesting areas, and the overlapping of the colonies was much

greater than I had realised last year. However, on the whole I am of the opinion that my estimate last year of 3,750 birds (N.Z. Bird Notes, Vol. 2, No. 6, p. 130) was very conservative, and I would now consider 5,500 nearer the mark.

XIII.—WINTER COUNTS IN HAURAKI GULF.

By Magnus Johnson, Auckland.

The following notes on gannets in winter may be of interest. I have visited all (I think) gannetries from White Island to the Three Kings and have for the past seven years taken a keen interest in their increase and decrease. On May 8, 1948, I set out for a week's cruise to Colville Peninsula and the Great Barrier.

On May 9 I visited Horuhoru Rock, just north of Thumb Point, off Waiheke, and counted between 70 to 80 gannets thereon. The birds were very still and not flying about.

On May 11 I visited gannetries on the Colville Group and counted 25 gannets on Motu Takapu (Gannet Rock) and between 40 and 50 on the larger island close by.

Between Auckland and Colville I saw only two gannets at sea and during the week's cruise I did not see more than 12 gannets at sea.

The birds I saw on the gannetries were mostly sleeping, with head under wing. As this was just before a severe S.E. gale, I suggest that the gannets sensed the coming of the gale and had taken refuge on the islands.

SEABIRDS NESTING ON THE SUGARLOAF ROCKS, NEW PLYMOUTH.

By Eric H. Sedgwick, Caron, Western Australia.

While in New Plymouth during January last, I paid some attention to the seabirds at Paritutu Beach and on the adjacent Sugarloaf Rocks.

My observations led me to postulate nesting colonies of white-fronted tern **(Sterna stiata)** on Pararaki and on Motu-o-tamatea, and a possible colony of black-backed gulls **(Larus dominicanus)** on Motumahanga. Silver or red-billed gulls **(Larus novaehollandiae)** were nesting on Pararaki.

Unfortunately, I was unable to set foot on Pararaki and had to content myself with watching through binoculars from the adjacent Mataora. From this vantage point I could clearly discern the red-billed gulls covering nests on the exposed summit of the rock. Their nests impressed me as being unusually substantial: perhaps a concession to the rocky site. Evidence of the terns nesting was more circumstantial, but nevertheless strong. A number of birds were apparently brooding in the niches in the mesembryanthemum-covered cliffs comprising the side of the rock. Several terns were seen carrying fish towards the island, and one, at least, appeared to feed a young bird with a fish that it had just brought in its bill.

I thought that a few terns might be breeding on Motu-o-tamatea, so on January 10th I examined the cliffs of that island for nests of the white-fronted tern but found none occupied, though adult terns behaved aggressively, diving to within a few inches of my head. Old nests and eggshells probably attributable to this species were located. The cliffs examined were rocky in parts, but elsewhere comprised steep slopes covered by a small species of **mesembryanthemum.** These cliffs resemble those of the nearby Pararaki, already referred to as a nesting place for terns and gulls.

Large seabirds, probably black-backed gulls, were to be seen over Motumahanga but at too great a distance to enable any definite conclusions to be drawn.

PRELIMINARY LIST OF BIRDS OF THE ROTORUA ACCLIMATISATION DISTRICT.

By W. J. Phillipps and C. J. Lindsay.

Ornithologically, the Rotorua district is one of the most interesting in New Zealand as there is a wide diversity of country ranging from extensive native and exotic forest areas to bracken, manuka and swamp lands, farming settlements, many lakes, some of large size, and coastal areas in the Bay of Plenty and Hawke's Bay. It is not surprising, therefore, that the district supports a good variety of bird life. One of the most interesting features of bird-life is the breeding there of both the red-billed **(Larus novaehollandiae)** and black-billed gulls **(L. bulleri)**. Other notable inhabitants include the kiwi **(Apteryx australis mantelli)**, North Island crow **(Callaeas cinerea wilsoni)**, robin **(Miro australis longipes)**, fern-bird **(Bowdleria punctata)**, and dabchick **(Poliocephalus rufopectus)**.

The Rotorua Acclimatisation District is a large area which commences at Ohinepanea, in the Bay of Plenty, running more or less due south through Otane-wai-nuku and continuing in a south-westerly direction to cross the Mamaku Range between Ngatira and Mamaku. After this the western boundary continues over Whakatutu on to the Wanganui River near Maungaku trig station, thence in roughly the same direction to Para-te-taitonga. From here the line runs due east to the sea coast of Hawke's Bay, and continues north up the coast to Paritu, a few miles north of Mahia. From here the boundary runs west to Maungapohatu trig station near Lake Waikaremoana and then on north-east to Waihau Bay, near Cape Runaway. The boundary now runs westerly in the Bay of Plenty to the point of commencement. Towns included in the area are: Whakatane, Opotiki, Rotorua, Wairoa (H.B.), Taupo, Tokaanu and Ruatahuna.

In the years 1918-1920 under the direction of the Department of Internal Affairs, one of us (W.J.P.) spent some months in the Rotorua and Taupo areas undertaking a general survey of conditions affecting the well being of trout acclimatisation in the district. Whenever possible birds were noted and a list with notes on the birds was compiled. In this work W.J.P. was fortunate in having the assistance of Mr. W. Cobeldick, to whom belated thanks are due.

The present notes are based on the original list, added to, and brought up to date with notes supplied by officers of the Internal Affairs Department and others as well as records from official files here published by kind permission of the Under-Secretary of the above-mentioned Department.

In September, 1946, we visited the district and added considerably to our knowledge of bird life in general, our observations being carried out chiefly in the Rotorua-Rotoiti area. In January, 1947, W.J.P. visited Whakatane, Opotiki, Rotorua, Taupo and Tokaanu, and received much valuable information from Mr. K. E. Francis, Whakatane, Messrs. S. A. McNamara and R. Dickinson, Rotorua, Mr. G. G. Potts, Taupo and Mr. J. K. Murphy, Tokaanu. We are indebted to the "List of the Birds of N.Z.," 1946, by Professor B. J. Marples, for the nomenclature used. Our best thanks are due to Messrs. G. F. Yerex and S. A. McNamara for providing us with the necessary transport throughout the area.

A complete record of the birds of the district is a matter of considerable importance. Successful conservation and control cannot eventuate until a comprehensive list of species and their relative abundance is available.

This list supplies new information on the birds of the district and for the most part does not include already published material, though brief mention is made of references to certain species in the district, already published in "N.Z. Bird Notes," these being indicated by the letters N.Z.B.N.

The following abbreviations have been used of those supplying information:—W.C., W. Cobeldick; G.G.P., G. G. Potts; V.C.B., V. C. Barton; K.E.F., K. E. Francis; A.K., A. Kean; J.B., J. Bennett; L.C.B., L. C. Bell; J.M.J., J. M. Jessop; H.F., H. Frame; G.F., G. Flight; G.F.Y., G. F. Yerex; R.D., R. Dickinson; F.J.H., F. J. Hill; J.K.M., J. K. Murphy; A.C.C., A. C. Christophers; S.A.McN., S. A. McNamara; J.S.A., Dr. J. S. Armstrong; R.H.D.S., R. H. D. Stidolph; P.H.C., P. H. Castleton; W.R.B.O., Dr. W. R. B. Oliver.

Kiwi **(Apteryx australis mantelli).**—Probably breeding. Heard calling near Whakarewarewa, Jan. 8, 1931, and at Mamaku, Jan. 10, 1931.—R.H.D.S. Recorded headwaters of the Tongariro River and on Kaimanawa Ranges, March 19, 1932. Two seen and about a dozen others heard headwaters of Repier River, April 9, 1932.—G.G.P. Headwaters of Whakatane and Waimana rivers, June, 1940.—V.C.B.

Dabchick or Weweia **(Poliocephalus rufopectus).**—Numerous in places breeding. Small numbers on Lake Taupo, Aug., 1936.—K.E.F. Five on Lake Rotoma, Dec. 28, 1946; two on Edgecumbe lagoons, Nov., 1946.—K.E.F. Dabchick teaching young to dive, Lake Rotoiti, 1941.—A.K. and J.B. Twelve counted at Otaramarae, Sept., 1946, Lake Rotoiti.—Authors. Few at Waikaremoana; plentiful at Tokaanu.—R.D. Rare Taupo end of lake.—G.G.P. Increasing at Tokaanu with rise in lake level.—F.J.H. Dabchicks on decrease generally owing to drainage and settlement.—K.E.F. Lake Rotoiti area, numerous.—N.Z.B.N. Major Buddle, Emu, Vol. 39, pp 77-84, 1939, has described its breeding habits in the Rotorua district.

Black Shag or Kawau **(Phalacrocorax carbo).**—Generally distributed; breeding. Rarer at Taupo than for the past twenty years.—G.G.P. Five or six birds flying overhead at Tokaanu, Jan., 1947.—Authors. Flocks 15 to 20 relatively common at Tokaanu.—J.K.M. Stomachs of shags examined at Tauranga-Taupo generally contain carp remains.—G.F. Eggs and young in Taupo area, early in August.—G.G.P. Early in May, black shags collect in flocks over Lake Taupo, pair and disappear after a few weeks. Possibly now rarer because of bush fires, 1945.—G.G.P.

White-throated Shag or Kawau-paka **(Phalacrocorax melanoleucos).** Generally distributed; breeding. A small white-breasted shag recorded by Mr. Potts on Lake Taupo is probably the pied form of this species. It breeds in the Taupo area in September and October.—G.G.P.

Grey Duck or Parera **(Anas poicilorhyncha).**—Generally distributed; breeding. Numerous at Lake Rotoaira in 1936.—K.E.F. Not decreasing, Whakatane area, 1937.—R.D. Three hundred counted at Hamurana, April, 1939.—A.C.C. Two at Hauparu Bay, Rotoiti; two at Otaramarae, Sept., 1946.—Authors. Grey duck on the decrease.—S.A.McN. Now flocks are 10 to 15, lower Waikato and up to 20 at Lake Rotokaua, where five years ago it was possible to see 200. Rats appear to be main enemies.—G.G.P. In Bay of Plenty greatest concentration of grey duck is in the Rangitaiki swamps. Estimated number 1000 birds seen at one time, but drainage and settlement have reduced numbers.—K.E.F. Stomachs of 30-40 grey duck taken in an arm of Ohiwa Harbour, all contained small fresh water molluscs, May, 1944.—A.C.C.

Paradise Duck or Putangitangi **(Tadorna variegata).**—Introduced to Lake Rotomahana some years before 1936.—W.R.B.O. Widely distributed; common in many localities in 1918. Seen at Rotomahana, Jan., 1937.—C.J.L. Forty counted at Rotomahana, March, 1940.—L.C.B. Ten at Lake Rerewhakaitu, Oct., 1938.—V.C.B. Not plentiful in any of the Rotorua series of lakes.—A.C.C. In the Bay of Plenty, in Nov., 1946, four noted in the Rangitaiki swamps and two in lagoons adjacent Tarawera River near Onepu Springs. Two seen upper reaches of the Whakatane above Ruatoki, Aug., 1946.—K.E.F. At Tokaanu species on increase, 29 counted, Nov. 27, 1946.—S.A.McN. A flock of 60 lived on the Waitahanui Swamp; all were shot in 1945-46.—G.G.P.

Grey Teal or Tete **(Anas gibberifrons).**—Not common. Recorded from Lake Rotorua and Rotomahana.—W.R.B.O., "N.Z. Birds." Two

pairs seen, 1942, at Broadlands.G.G.P. Pair noted in April, 1946, flying along the Horomaunga River, Galatea Estate; also single female on sand bank at junction of Horomaunga and Rangitaiki rivers.—J.M.J. Reported several localities near Rotorua.—N.Z.B.N.

Shoveller or Kuruwhengi **(Anas rhynchotis)**.—Not common. Fifty reported at Braemar Lagoon, Bay of Plenty, Aug., 1940.—V.C.B. Twenty recently shot at Tokaanu.—K.E.F. Decreasing both at Taupo and Waikaremoana; few shot every season in Rotorua district; four pairs on Matata Lagoon, May 5, 1946.—K.E.F. Two pairs on Rangitaiki Swamp at Matata.—K.E.F. and J.M.J.

Black Teal or Papango **(Aythya novaeseelandiae)**.—Not common except in one or two restricted areas. Fourteen counted at Hamurana, Feb., 1939.—A.C.C. Black teal tame at Otaramarae, where birds are fed by Major R. Vercoe; we counted 36, Sept., 1946.—Authors. One hundred counted, Hauparu Bay, Rotoiti, 1946.—Authors. In 1945, 60 counted on Rotokaua Lake.—G.G.P. In September, 1946, at Hamurana, 157 counted; in January, 1947, all except 30 had departed.—G.F.Y. and S.A.McN. Rotorua-Rotoiti area, April and May, 1939, over 400.—N.Z.B.N.

Blue Duck or Whio **(Hymenolaimus malacorhynchus)**.—Occurs in mountain streams; scarce. Recorded in the Rangitaiki River and the Otamatea Stream, Jan., 1939.—F.C.V. Three reported in Kaituna River, Rotoiti, Oct., 1939.—L.C.B. Common in high country at Waikaremoana.—R.D. Not common in Upper Tongariro River; two specimens seen recently.—S.A.McN. In Pakahi River, Opotiki, four pairs recorded Oct., 1946; now mostly confined to remote gorgy headwaters of rivers.—K.E.F.

Caspian Tern or Taranui **(Hydroprogne caspia)**.—Scarce; breeding at Rotorua. Unpopular with anglers and probably fired on at the delta, Turangi, Lake Taupo.—K.E.F. Three soaring overhead relatively close to ground, the Gardens, Rotorua, Sept., 1946.—Authors. Caspian tern dive to take trout in Lake Rotorua, generally near mouths of streams; at Waititi Stream fish taken are 6 to 7 inches; most birds dive early in morning, remain below not longer than 4 seconds.—A.C.C. Caspian tern come over Lake Taupo when it is stormy at sea, generally singly.—G.G.P. Breeding recorded, Rotorua.—N.Z.B.N.

Black-backed Gull or Karoro **(Larus dominicanus)**.—Generally distributed; breeds in Taupo area. A black-backed gull diving off Ngongotaha, about 100 yards from shore, only fore part of body submerged; apparently feeding on larval smelts **(Retropinna)**, Jan. 1947.—W.J.P. Eight pairs nest each year on rocky island off Karangahake Cliffs, Taupo, while two pairs nest on the rock, Milne Bay, Taupo.—G.G.P.

Red-billed Gull or Tarapunga **(Larus novae-hollandiae)**.—Numerous in places; breeds. In past four or five years this gull has become scarcer each year.—G.G.P. (Taupo). At Tokaanu, generally two or three are seen at intervals; plentiful at Taupo, 1935; in Jan., 1935, commenced to appear in small flocks, becoming more plentiful up to March, various flocks of 20 being counted.—J.K.M. and G.G.P. Breeding recorded at Rotorua and Waiotapu; winter flocks, May, 1945, over 1000.—N.Z.B.N.

Black-billed Gull **(Larus bulleri)**.—Numerous in places; breeds. Recorded at Ohau Channel, Feb., 1940.—L.C.B. One pair on the south-eastern shore of Lake Rotoiti, Sept., 1946.—The Authors. Eleven specimens on Lake Rotorua off Ngongotaha diving continuously, apparently to take larval smelts; species appears to have increased with the population of Rotorua town; feeds in neighbourhood of sewage outfall.—A.C.C. and W.J.P. Species appears to breed on island in Lake Taupo—J.S.A. As many as 20 diving on the Lake near Tokaanu.—F.J.H. On a two-storey building roof in the main street, Whakatane, over 40 counted; they rested a short period then flew seawards, Jan. 12, 1947.—W.J.P. Breeding recorded, Rotorua.—N.Z.B.N.

North Island Oystercatcher **(Haematopus reischeki)**.—Not common, Bay of Plenty—K.E.F.

Banded Dotterel or Tuturiwhatu **(Charadrius bicinctus)**.—Occurs in suitable areas; breeds. Breeding at Lakes Tarawera and Rotorua, early summer, 1918.—W.C. and W.J.P. In Taupo area banded dotterel usually to be seen in spring and summer at Oheke Pa, between Waiotapu and Taupo, where is largest breeding ground in district, a large bare sandy basin with a blow-hole in the centre where birds are said to breed on warm earth.—G.G.P. Still breeding, Rotorua.—N.Z.B.N.

Bar-tailed Godwit or Kuaka **(Limosa lapponica baueri)**.—In March, 1940, about 2000 recorded at Ohiwa Harbour; in February each year common at Whakatane.—R.D. None seen at Taupo.—G.G.P. Recorded at Lake Rotorua.—W.R.B.O. Seen at Wairoa (H.B.).—R.D.

White-headed Stilt or Poaka **(Himantopus himantopus)**.—In suitable localities scarce. Usually called pied stilt by observers in the district. Small flocks observed on shores of Lake Rotoiti, 1918 (summer).—W.J.P. Two pairs at western end of Lake Rotoiti, Sept., 1946.—Authors. Reasonably common, Bay of Plenty.—K.E.F. A noisy species not in large numbers around Lake Rotorua.—A.C.C. As far back as 1934, birds recorded nesting at Taupo Lake; young reached the lake, 9/1/34—J.S.A. Breeding, Rotorua.—N.Z.B.N.

Banded Rail or Moho-pereru **(Hypotaenidia philippensis)**.—Scarce. One on road at Kutarere, Sept., 1937.—R.D. Odd specimens seen in past ten years, vicinity Taupo.—G.G.P. In 1946 single bird seen in Taupo area.—A.C.C.

Spotless Crake **(Porzana tabuensis)**.—Probable occurrence, Te Whaite, 1944.—N.Z.B.N.

Marsh Crake **(P. pusilla)**.—One recorded, Lake Rotomahana, 1945.—N.Z.B.N.

Swamp Hen or Pukeko **(Porphyrio poliocephalus)**.—Common in some areas. Plentiful, Bay of Plenty, Whakatane and Opotiki areas; troublesome and numerous at Tokaanu and on banks of Waikato, Aug. and Dec., 1937.—K.E.F. Young at Waitahanui observed by J.S.A., described in his diary as "little black balls with long legs and white tips to the wings." Adult with dark-brown chick at Otaramarae, Sept., 1946.—Authors. Fairly common, Taupo.—G.G.P.

White Heron or Kotuku **(Casmerodius alba)**.—Rare visitor. Specimen appeared on lake shore at Taupo, April 27, 1936; seen again on swamp on Waikato River.—G.G.P. Occasionally reported from Matata.—R.D. One recorded in 1945.—K.E.F. (Whakatane).

Reef Heron or Matuku-moana **(Demigretta sacra)**.—Found in coastal areas. Recorded in Ohiwa Harbour, Aug. 1, 1940.—V.C.B. Two on Ohiwa Harbour, Jan. 2, 1947.—K.E.F.

Heron (?) possibly white-faced **(Notophoyx novaeseelandiae)**.—Four solitary birds seen at Taupo during past eleven years.—G.G.P.

Bittern or Matuku-kurepo **(Botaurus poiciloptilus)**.—In swampy areas; common. Common around Lakes Rotorua and Rotoiti, 1918-1920.—W.J.P. Common, Tokaanu area, May, 1936.—K.E.F. Plentiful at Tokaanu, 1946.—S.A.McN. Numerous at Taupo twenty years ago, gradually decreased for many years, now slightly on increase.—G.G.P. In Bay of Plenty not uncommon swamps and lagoons, in particular often seen in Rangitaiki swamps.—K.E.F. Very common around Lake Rotoehu.—A.C.C.

Pigeon or Kereru **(Hemiphaga novaeseelandiae)**.—Generally distributed in bush areas. During 1918-20 not uncommon for pigeons to be surreptitiously shot in bush at north end of Lake Okataina, Tikitapu Bush and on north side of Lake Rotoaira. In Nov., 1936, pigeons reported as plentiful at Tuai, near Waikaremoana.—H.F. At Mamaku, 28 counted and at Manginui 32, May, 1939.—F.C.V. Pigeons decreasing in proportion to bush felled, Rotorua district.—A.C.C. Species scattered generally in main bush near miro and hinau stands of timber at Tara-

wera, Urewera and Waioeka.—K.E.F. Plentiful, not decreasing, eastern portion of Kaimanawa Range.—S.A.McN.

Falcon or Karearae **(Falco novaeseelandiae)**.—Found in suitable localities. Bush hawks observed on plains feeding on larks and other small birds, Taupo.—G.G.P. Bush hawk observed working pigeon out of bush by flying beneath it; once in open, pigeon was killed.—G.G.P. Bush hawks common in patches, Rotorua district; at Murupara, July, 1946, 12 observed; last one shot was eating a yellow-hammer.—A.C.C. Falcons live in high country in vicinity of Mts. Tarawera and Edgecumbe.—K.E.F.

Harrier or Kahu **(Circus approximans)**.—Generally distributed. Three harriers overhead near Whakarewarewa, Sept., 1946.—Authors. Common, Bay of Plenty; but not so plentiful as in Tokaanu area.—K.E.F. Very common, Ngongotaha Valley.—J.K.M. and A.C.C. In Taupo area largest harrier populations are in vicinity of lower Waikato and in Reporoa area.—G.G.P.

Morepork or Ruru **(Ninox novaeseelandiae)**.—Distributed in bush areas. Abundant in bush around Tarawera, 1918-20.—W.J.P. Small numbers in most bush areas, Bay of Plenty.—K.E.F. Pair live near Fairy Springs, seen among pine trees, flowering gums, fruit trees, etc.—A.C.C. Common at Waikaremoana.—R.D. Less common at Taupo than formerly.—G.G.P.

Kaka **(Nestor meridionalis septentionalis)**.—Scarce. Appeared to be increasing at Tuai, Nov., 1936.—H.F. Three seen in Mamaku Bush, July and August, 1941.—L.C.B. Three seen at Ruatahuna, 19/11/46; not common at Waikaremoana.—A.C.C. Recorded near source of Waitotara Stream, Tokaanu.—R.D. Four seen in 1940 in bush at Beggs Falls, Tongariro.—G.G.P. One pair in bush near Fenton's mill, Tarawera; found in larger bush tracts, Bay of Plenty.—K.E.F.

Parrakeet or Kakariki **(Cyanoramphus spp.)**—In bush areas, scarce. Said to be on increase in Waikaremoana district, Nov., 1936.—H.F. Parrakeets found in Opa Bush and at Beggs Falls, Taupo.—G.G.P. Small colony in bush near upper reaches of Tongariro River.—S.A.McN. Both red-fronted **(C. novaeseelandiae)** and yellow-fronted **(C. auriceps)** recorded Lake Taupo area.—N.Z.B.N.

Shining Cuckoo or Pipiwarauroa **(Chalcites lucidus)**.—Migrant; not uncommon in season. At buried village of Wairoa, in 1944, in bushes overhead were two shining cuckoos associated with two grey warblers and a young cuckoo.—A.K. and W.J.P. Recorded at Waikaremoana, Oct., 1939.—H.F. Uncommon Bay of Plenty; one seen, Nov., 1945, Waimana, between Whakatane and Opotiki.—K.E.F. Few at Taupo early summer.—J.S.A. Plentiful at Tokaanu.—J.K.M. Large numbers seen at Pihanga.—S.A.McN.

Long-tailed Cuckoo or Koekoea **(Eudynamis taitensis)**.—Migrant, not uncommon. Recorded at Waimana Valley, March, 1939.—V.C.B Fairly common in most bush but not in large numbers, Bay of Plenty.—K.E.F. Not uncommon near Paradise; believed to be enemy of other birds; reputed to eat eggs.—A.C.C. Maoris of both Rotorua and Taupo agree in the belief that the egg of this bird is laid in a hollow log. It hatches into a lizard which later sheds its skin and emerges a long-tailed cuckoo. *The lizard character is maintained as it sits along a branch and hides* as does the green lizard.—W.J.P. Pair noted at Tokaanu trout hatchery, Jan., 1947; they glide across open spaces, then throw themselves into the branches, screeching as they do so; call heard both by day and by night is deceptive to the observer.—F.J.H.

Kingfisher or Kotare **(Halcyon sanctus)**.—Generally distributed. *Plentiful at Rotoiti*, Nov., 1939.—L.C.B. Kingfishers became rare at Taupo about 1940; still rare.—G.G.P. From Cape Runaway throughout coastal belt to Matata and inland up the Tarawera, Rangitaiki, Whakatane and Waioeka rivers, kingfishers are reasonably plentiful; scarcer inland.—K.E.F. Six counted between Ohiwa Harbour and Opotiki, 12/1/47.—W.J.P.

Rifleman or Titi-pounamu **(Acanthisitta chloris)**.—Occurs in bush areas. Waikaremoana numerous, 6/1/31; Hongi's Track, 16/1/35.—R.H.D.S.

Pipit or Pihoihoi **(Anthus novaeseelandiae)**.—Numerous in suitable localities, 1931 and 1935.—R.H.D.S.

Fernbird or Matata **(Bowdleria punctata)**.—Occurs in suitable localities, not uncommon. Single bird recorded western end of Lake Okareka, early summer, 1918.—W.J.P. Scattered specimens seen, Taupo area.—G.G.P. When shooting pheasants in 1930, fern birds would rise from bracken and go ahead alarming the pheasants; seen as many as four or five at one time.—J.S.A. (Taupo). Small number of fernbirds still found northern lower slopes of Mt. Pihanga.—S.A.McN. Recorded several localities, Waiotapu, Kaingaroa area.—N.Z.B.N.

Grey Warbler or Riroriro **(Pseudogerygone igata)**.—Generally distributed. Wairoa, 1944.—W.J.P. An elusive bird, seen in patches.—A.C.C. Number seen in Tokaanu district; found mostly in taller belts of timber.—S.A.McN.

White-eye or Tauhou **(Zosterops lateralis)**.—Widely distributed. At Taupo 11 white-eyes bathing in pool on lawn of Mr. G. G. Potts's home, Jan., 1947.—W.J.P. Mrs. Potts states birds eat fruit just before it is ripe, both Sturmer apples and peaches. At Tokaanu congregate in flocks during hay harvesting season, Dec.-Jan,—J.K.M.

White-breasted Tit or Miromiro **(Petroica macrocephala toitoi)**—Not uncommon, has colonised exotic forests. Common in bush around Lake Rotoiti, 1918.—W.J.P. Species has become known as "The Bushman's Friend"; bushmen were accustomed to turn over logs when these birds were near, so supplying them with food; current legend states that any Maori or pakeha lost in the bush will be guided out by these birds.—A.C.C. At Taupo fairly common in tall manuka and bush.—G.G.P. Found only in main bush, particularly to the west of Tarawera area.—K.E.F. (Bay of Plenty). Recorded well established in introduced pine forests.—N.Z.B.N.

North Island Robin or Toutouwai **(Miro australis longipes)**.—In restricted areas, also in portions of exotic forests. Robins reported Mamaku bush, Oct., 1939.—L.C.B. Two pairs in upper reaches of Waitahanui River; one pair between Taupo and Atiamuri.—G.G.P. Not seen, Bay of Plenty.—K.E.F. Other records, Mamaku.—N.Z.B.N.

Pied Fantail or Piwakawaka **(Rhipidura fuliginosa)**.—Generally distributed. Fairly common near Lake Rotoiti, Sept., 1946.—Authors. In summer of 1945, 20 seen on Stanley Track, Whakatane-Opotiki area; plentiful Bay of Plenty in area extending from Tarawera River to Motu River.—K.E.F. Numerous Taupo township; at end of April each year some thirty or forty fantails congregate in vicinity of Taupo wharf.—G.G.P.

Whitehead or Popokatea **(Mohoua albicilla)**.—Occurs in forest areas, including exotic plantations. Waikaremoana, Te Whaiti, 6/1/31; Tikitapu Bush, 9/1/31; Lakes Rotoiti and Rotoma, 12/1/31; Mamaku, 10/1/31 and 17/1/35; Hongi's Track, Lake Okataina, 16/1/35.—R.H.D.S.

Tui **(Prosthemadera novaeseelandiae)**.—Generally distributed.. Tuis were relatively common in bush around Green and Blue lakes; less common around Lake Tarawera, 1918.—W.J.P. In Bay of Plenty common in main bush areas, small numbers coming back into second growth areas.—K.E.F. Fair numbers in all large areas of unmolested bush; but otherwise becoming rarer, Taupo area.—G.G.P. Common, Tokaanu.—F.J.H.

Bell Bird or Korimako **(Anthornis melanura)**.—Recorded in most forest areas, including exotic plantations. Found in bush around Blue and Green lakes, but not common as tui, 1918.—W.J.P. At present at Taupo, bell bird increasing at faster rate than any bird in district. Now common in most parts of district.—G.G.P. Exists in fair numbers in

large bush tracts and in adult second-growth areas; not so common as tui in Bay of Plenty.—K.E.F. Bell birds plentiful at Tokaanu, more abundant than tuis.—F.J.H.

Blue-wattled Crow or Kokako **(Callaeas cinerea wilsoni).**—Occurs in restricted forested areas; scarce. Recorded "four miles in the bush at the south-east end of Rotoiti Lake," Oct., 1939; also in March, 1940, three seen in the Waione Block, Rotoiti.—L.C.B. Specimens in Mamaku Bush, Oct., 1939.—L.C.B. Five seen in bush at the back of Rotoehu.—R.D. Specimens recorded about 1936, some little distance from Trout Hatchery, Paradise; this is real N.Z. bell bird.—A.C.C. Heard its ringing note on Mt. Pihanga.—J.K.M. Not recorded Bay of Plenty or Taupo areas. Other records, Mamaku.—N.Z.B.N.

INTRODUCED BIRDS.

Mallard Duck **(Anas platyrhynchus).**—Does not increase in wild state; rats, stoats and ferrets take chicks.—A.C.C. Watched a rat steal an egg from under mallard; it held egg in front paws until another rat appeared and dragged away rat, still holding egg, by the tail.—P.H.C. Paradise Springs. Various liberations made, the largest being 56 at Lake Rotokaua, Mar., 1941.—G.G.P.

Black Swan **(Cygnus atratus).**—Six to 10 black swans constantly on Lake Ngahiwa, near Waiotapu, 1918-20; in 1918 few black swans near eastern end of Lake Tarawera.—W.J.P. In June, 1939, 182 counted at Hamurana.—A.C.C. From Lake Rotorua, 70 reported in June, 1941; in Rangitaiki Swamp, two flocks of 50 recorded, Oct., 1946; latter locality an important Bay of Plenty breeding ground; species also seen on Matata Lagoon, 50 noted in winter of 1946; also noted Edgecombe Lagoons.—K.E.F. Odd pairs seen at Taupo.—G.G.P. Large flocks on Lake Rotoaira, common at Tokaanu.—W.J.P.

Pheasant **(Phasianus colchicus x P. torquatus).**—Plentiful in Bay of Plenty; also in areas from Cape Runaway to Rotoma bush edge; does not penetrate larger bush tracts.—K.E.F. A perceptible increase in numbers around Rotorua.—R.D. Decreasing at Taupo.—G.G.P. Few at Tokaanu, not increasing.—J.H.M.

Californian Quail **(Lophortyx californicus).**—Common, 1936.—R.D. and V.C.B. Now increasing in the Taupo area.—G.F.Y. Decreased in Bay of Plenty in recent years, particularly in areas affected by fires and pollard poisoning.—K.E.F. Found eating broom seeds; nests as early as end of Oct., and on to Dec.; hen will not leave nest or young, so many hundreds perished in Taupo fires of 1945.—J.S.A. Common many parts of Tokaanu district.—J.K.M.

Australian Quail **(Synoicus ypsilophorus).**—Plentiful at Whakatane and in Bay of Plenty area, Nov., 1940.—R.D. and V.C.B. In general, species has decreased rapidly in past five years.—R.D. This decrease due fires and pollard poisoning.—K.E.F. At Taupo, decrease is largely due to manuka replacing grass land; has found food to consist of grass seeds, snails and clover leaves and a certain black slug not found in manuka areas.—J.S.A.

Greenfinch **(Chloris chloris).**—Ohiwa and Opotiki, 12-13/1/31; Katikati, 15/1/35.—R.H.D.S.

Goldfinch **(Carduelis carduelis).**—In settled areas, Bay of Plenty, fairly common; generally seen in small flocks.—K.E.F. Flocks of 10 to 15 not uncommon, Taupo.—G.G.P.

Chaffinch **(Fringilla coelebs).**—Present in fair numbers, Rotorua district, Sept., 1946.—Authors. Plentiful, settled areas, Bay of Plenty.—K.E.F. Plentiful, Rotorua area.—R.D. Very few seen at Taupo.—G.G.P. Comparatively rare, Tokaanu.—J.K.M.

Lesser Redpoll **(Carduelis cabaret).**—Recorded from Rotorua golf links; also single specimen from mouth of Waihaha River, Western Bay, Lake Taupo, Dec., 1941.—A.K. From 20 to 30 to be seen in Taupo township some years ago; in winter they come into town from hills.—J.S.A. At present odd specimens seen on lawn at house, Taupo.—G.G.P.

House Sparrow **(Passer domesticus)**.—Common most settled areas.

Yellowhammer **(Emberiza citrinella)**.—Very common, Tokaanu village, 1918; said to have recently arrived in that locality.—W.J.P. In Bay of Plenty a scattered species, does not penetrate into bush; one or two seen at a time.—K.E.F. Common at Taupo.—G.G.P. Twelve feeding on grass seed, 23/10/29.—J.S.A. Now rarer at Tokaanu.—W.J.P.

Blackbird **(Turdus merula)**.—Common throughout most rural areas, in manuka and scrub country; remarkable increase in the past twenty years in Rotorua area.—W.J.P.

Hedge Sparrow **(Prunella modularis)**.—Species increased in past ten years.—R.D. Often caught by cats in Taupo township.—G.G.P.

Thrush **(Turdus ericetorum)**.—In country areas species not so common as blackbird, Sept., 1946.—Authors. In Bay of Plenty, thrush most common, settled areas, near cultivations.—K.E.F. Same appears true at Tokaanu.—W.J.P.

Skylark **(Alauda arvensis)**.—Common open country most parts of district. Rare in fern country in Bay of Plenty and Tokaanu.—K.E.F.

Starling **(Sturnus vulgaris)**.—Common settled areas not far from habitations of man. At Taupo, feeds on grass grubs in large numbers making hole in ground to secure grub.—G.G.P.

Indian Myna **(Acridotheres tristis)**.—One turns up at Taupo every few years, but does not stay; only one seen 1931.—J.S.A. Two at Ohau Channel, Nov., 1946.—R.D.

White-backed Magpie **(Gymnorhina hypoleuca)**.—Three appeared in Whakatane neighbourhood, 1946.—K.E.F. First magpie recorded, Taupo district, July 21, 1946.—G.G.P.

Several papers which make reference to the bird life of the Rotorua district have appeared in "The Emu." These are:—1931, "Holiday Jaunts in New Zealand," by R. H. D. Stidolph; vol. 31, pp. 17-19. 1936, "Paradise Duck," by W. R. B. Oliver; vol. 36, pp. 69-72. 1939, "Notes on Breeding Habits of Dabchick," by G. A. Buddle; vol. 39, pp. 77-84. 1940, "State Secretary's Report, New Zealand," W. R. B. Oliver; vol. 39, p. 187. 1941, "State Secretary's Report, New Zealand," W. R. B. Oliver; vol. 40, p. 392.

THE APPEAL FOR DONATIONS.—As a result of the recent appeal for donations to the general or illustrations funds forty members have contributed £22 0s 7d. to date. Sincere thanks are offered to the following donors:—M. J. S. Black 10/-, A. A. Boult 10/-, J. Bradbury 5/-, L. A. Brewster 8/7, Miss F. Bridge 5/-, W. J. Burns 10/-, G. A. Buddle 10/-, J. L. Cameron 5/-, S. Chambers 5/-, T. A. Cunningham 5/-, K. W. Dalrymple 5/-, C. W. Dover £1, Dunedin Naturalists' Field Club £2/2/-, T. C. Fraser 10/-, N. M. Gleeson £1, D. H. Graham 10/-, Mrs. M. Hansen 5/-, Miss A. G. Henderson £1, M. K. Jones 5/-, G. N. Lawless 10/-, W. A. Lindsay 5/-, J. Mitchell 5/-, G. J. H. Moon £1, L. W. McCaskill £1, Miss B. McDougall 10/-, D. MacMillan 10/-, H. R. McKenzie 10/-, R. McKenzie 5/-, Mrs. C. W. McLatchie 2/6, J. Middleditch 10/-, W. R. B. Oliver 10/-, W. J. Phillipps 10/-, J. W. St. Paul 10/-, D. N. Strang 15/-, Mrs. H. M. Simpson 10/-, B. Sladden £1, A. H. Watt 7/6, W. K. Welch £1, W. A. Williamson 10/-, Mrs. P. R. Woodhouse 10/-. In addition, donations received since the last list was published in July, 1947, and prior to the present appeal, are as follows. The majority of these were included in the 1947-8 financial statement: A. E. Brookes 5/-, T. E. C. Bridge 10/-, V. I. Clarke £1/1/-, J. M. Cunningham 10/-, S. Edwards 10/-, C. A. Fleming £2/7/-, £2/10/-, W. F. I. Hunt 5/-, B. Iorns 5/-, Mrs. R. F. Lenz £1, Miss B. McDougall 10/-, W. J. Phillipps 10/-, F. H. Robertson 3/9, E. G. Turbott 10/-, Anonymous £3.

Mr. H. R. McKenzie, of Clevedon, has been appointed by the Committee as recorder.

CHARADRIUS LESCHENAULTI AT MIRANDA.

By R. B. Sibson.

A single specimen of Geoffroy's sandplover **(Charadrius leschenaulti)** also known as the large sand dotterel spent some months of the summer at Miranda on the western side of the Firth of Thames.

It was first seen and identified by Messrs. H. R. McKenzie and O. Cheesman and the writer on 20/12/47. The credit for spotting it as a dotterel with a difference goes to H.R.McK., who found it on a strip of shelly beach where some pairs of banded dotterels **(C. bicinctus)** were still nesting while others were already flocking. Among juvenile and moulting banded dotterels it showed up as a leggy upstanding dotterel, greyish above, with a conspicuously white forehead, a faint wash on either side of its chest, a markedly heavy beak and a large eye which was surrounded by black and so may have appeared larger than it actually is. On the ground it seemed about as big in body as a male banded dotterel, but its larger size was evident when it was seen in flight among banded dotterels. Its manner of flight, also, was distinctive. Its wings looked broader than those of a banded dotterel, its wing beat slower, at least over a short distance, and its flight more buoyant. The colour of the legs was grey-green. It was heard once to utter a distinctive call, the clarity of which unfortunately, was blurred by the notes of the banded dotterels with which it was flying. As the falling tide exposed the mud, it was feeding with a scattered flock of banded dotterels and wrybills **(Anarhynchus frontalis)**.

It was next seen by H.R.McK. and the writer on 24/1/48. At full tide it had joined some wrybills which were squatting on the sun-baked mud of a dried-out tidal lagoon. At a distance among the wrybills it could easily have been overlooked, but when it stood up and moved its general outline and the way in which it carried itself, focussed attention on it at once. Some hours later when the tide was well down, it and an American pectoral sandpiper **(Calidris melanotos)** were feeding within a yard of each other on the soft ooze of a tidal runnel. It was seen once to peck at the pectoral sandpiper and to drive it a short distance.

On 7/2/48, Messrs. O. Cheesman and E. G. Turbott and the writer found it again in the same place. Full-tide had brought together what must be a unique assemblage of small waders; for with about 120 wrybills and 30 banded dotterels were five curlew sandpipers **(Calidris testacea)**, one American pectoral sandpiper, one red-necked stint **(Calidris minuta ruficollis)**, and the large sand dotterel, which preferred the company of its nearest-of-kin, the banded dotterels. It was last seen by Mr. O. Cheesman on February 15th, but it could not be found on February 28th, nor on two subsequent visits.

In recent years this dotterel from Central Asia has twice appeared in Manukau Harbour, near Auckland; and these occurrences have already been recorded in "The Emu" (vol. 45, p. 223; and vol. 46, p 76). The first bird was seen on May 20 and September 5 in 1943, near Puketutu; the second on September 30 and October 10, in 1945, at Puhinui. It is a dotterel with an immense winter range which extends from south-east Africa to the Solomons, and it has also been recorded from Lord Howe Island. The three recorded occurrences of recent years may indicate that more often than is suspected some individuals overshoot the mark, i.e., the Solomons, in their southward dispersion and reach the northern regions of New Zealand. Flocks of banded dotterels and wrybills are always worth close examination to see if any strangers have joined them.

So far no museum has a specimen of **Charadrius leschenaulti** taken in New Zealand, but a specimen from Ceylon, now in the Auckland Museum, has proved most useful in confirming the identification. It should perhaps be added that all who saw the Miranda specimen used telescopes and carried out their observations at the distance of a chain or less, and for such length of time as they required to take in all diagnostic details of the bird.

BIRDS OF THE SOLANDERS.

By R. A. Falla, Wellington.

Lying some 30 miles west of Stewart Island, and silhouetted against the sunset as one looks out from the shores of Te Waewae Bay, are the islets—one large and one small—which on March 11, 1770, Cook named after the Swedish botanist who was assistant to Sir Joseph Banks. The Solanders, or rather the large one, became well known to early sealers who found there sufficient numbers of fur seals to warrant leaving parties of hunters until it was convenient or possible to pick them up again. So great was the uncertainty of this procedure that five men picked up in 1817 had been there without relief for periods of up to five years. Even in the present century sealing parties have been marooned for weeks because landing and embarkation are impossible in bad weather. Sperm-whaling ships worked the famous "Solander Grounds," but gave to what Frank Bullen calls "the awful side of that sea-encircled pyramid" a wide berth.

Naturalists have not had much opportunity of examining the flora and fauna, and the only earlier visit for that purpose of which I know is that of Mr. E. F. Stead, who was landed for a brief hour by a boat's crew from the "Matai" in a mid-winter gale in 1933. Two more recent opportunities arose in the course of an investigation into the condition of the stock of fur-seals made on behalf of the Marine Department. The first was on December 9, 1947, when the launch "Alert," commanded by Mr. A. J. Black, anchored off the north-east coast of Big Solander at 6 a.m. and the party spent the whole of a long day ashore. Time for general exploration was limited by the prior claims of seal study; but Dr. Robert Cushman Murphy and Mrs. Murphy found time for bird-watching; and an ascent to about 600 feet was made by Alastair Thompson and the writer. This took us to the top of a razor-back ridge buttressed against the main pyramid, leaving some 500 feet of much richer vegetation to be explored by the next party that has time to make the climb. The sides of the island are so steep that coarse tussock and coastal **Hebe** gives place only gradually to forest which is dense and verdant on the saddles and in the valleys near the summit. The main rock appears to be a coarse granite, and tumbles of huge boulders along three stretches of the coast form the beaches. The shallow surrounding water is studded with rocks and pinnacles.

The Little Solander, which lies a mile or so south-west, was inspected by circumnavigation only in the evening of December 9, and no landing was attempted. It is about 400 feet high and rises sheer on the east and by a steep gradient on the west.

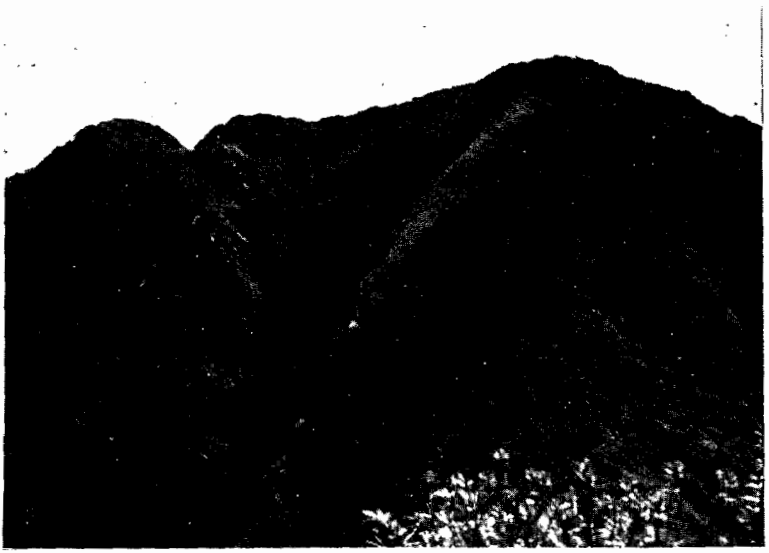
The next visit was a winter one, on July 20, 1948, also in the "Alert." This time, with much less daylight available, landings were made on both Little Solander and the west coast of the big island. There were only ten seals on the narrow ledge that gives access to Little Solander; but the opportunity was too good to be missed, and the combined skill of W. Hansen and T. Field, of Bluff, landed a surprised ornithologist on the ledge with only a small hand camera as impedimenta.

By cautious fly-on-the-wall tactics two of us reached the top and got back again with some photographs and a few plant specimens that should be of interest to botanists. Later, on the Big Solander, seal study was again resumed, with Mr. C. J. Lindsay and the writer snatching a few moments to make the acquaintance of birds. We got off at dark just in time to escape being marooned by a change of weather.

The birds of the Solanders may be conveniently divided into the oceanic wanderers that converge there for nesting, the resident natives, the naturalised species that have found their way there, and the ubiquitous weka that Maori sealers placed here, as on other islands, as a food standby.

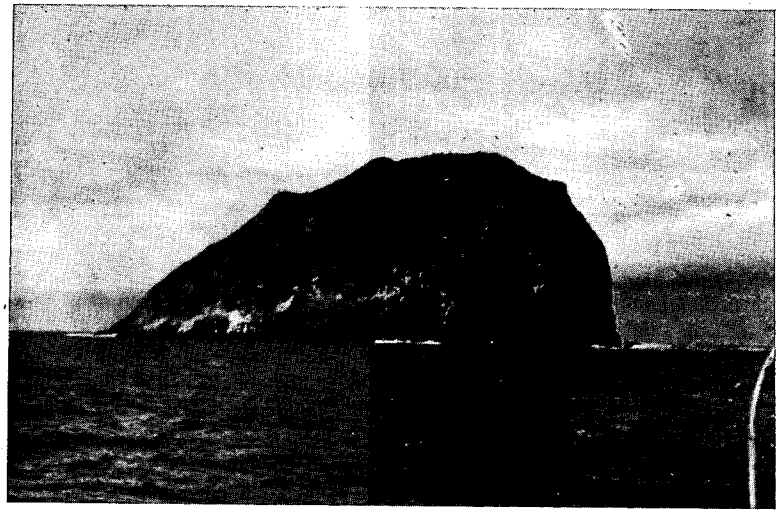
Crested Penguin (**Eudyptes pachyrhynchus**).—With nesting-grounds extending from Port Pegasus to South Westland, this penguin is plentiful on Big Solander. It looks much like the several crested species further

SOLANDER ISLANDS, BEARING SOUTH-EAST.

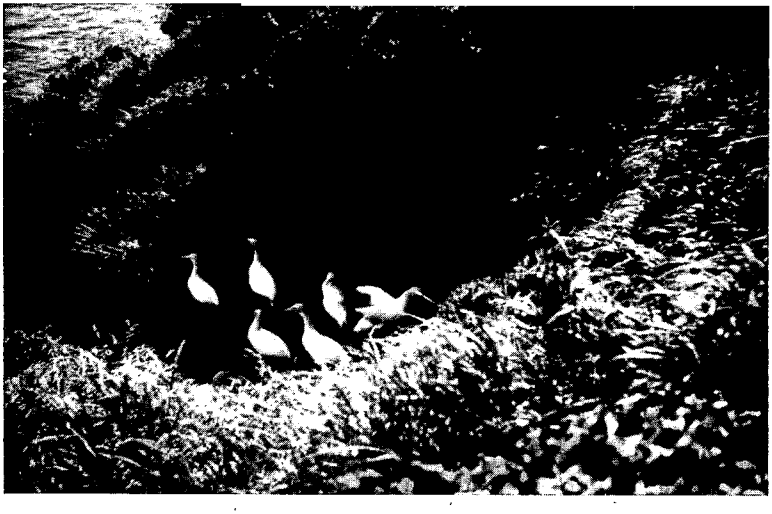


FOREST ON EAST SLOPES OF SUMMIT, BIG SOLANDER.

Photos by author.



LITTLE SOLANDER ISLAND. Main Gannet Colony is in gully near left of top.



GANNET COLONY IN SHELTERED GULLY, LITTLE SOLANDER.

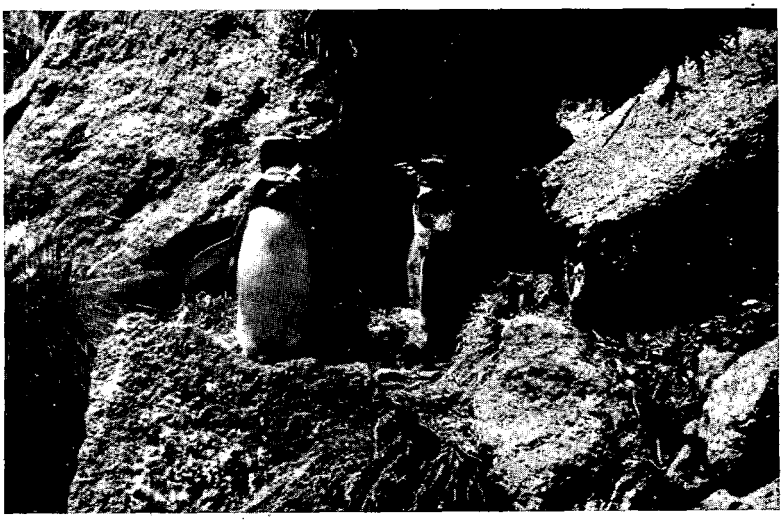
Photos by author.

BULLER MOLLYMAWK, SOLANDERS.

YOUNG BULLER MOLLYMAWK, SOLANDERS.

Photos by author.

CRESTED PENGUINS AND FUR-SEAL PUPS, SOLANDERS.



CRESTED PENGUINS AND YOUNG, SOLANDERS.

Photos by author.

south but differs in many respects. For one thing, its chin feathers are only superficially dark, and a muscular bulge on each cheek discloses their white bases in several distinctive bands. It also lacks the visible area of fleshy skin at the gape, and has a much wider superciliary band of yellow than the others. Also, it is shyer and does not stand its ground long before shuffling for cover. For the most part nests are well hidden under rocks and shrubs. In July, the crested penguins were occupying nesting-sites—quite undemonstratively, except for an occasional squawk —and in December their young were fully fledged and beginning to depart.

*Snares Crested Penguin (**Eudyptes atratus**).—Our party in December had just returned from the Snares; and if any doubts still lingered as to the distinctness of **atratus** from **pachyrhynchus** they were dispelled when the first band of crested penguins interviewed on the shores of Big Solander quickly melted away and left one of our Snares friends standing his ground with indifference. Even allowing for the fact that he probably was not as near the moult as the local birds, his darker plumage, narrower crest, and flesh-lined bill marked him as a foreigner. This solitary specimen was the only one seen on the Solander.

Buller Mollymawk (**Thalassarche bulleri**).—In 1933, Mr. E. F. Stead identified the breeding mollymawk of the Solanders as this species, which is known to breed also at the Snares and Chatham Islands. It has a curiously late laying season at the end of January or early February, and as none had appeared over the land up to December 6 at the Snares, we were not hopeful of finding many at Solander on 9th. However, on this date there were some 20 or 30 pairs circling the hillsides and peaks, some of them touching down on old nest sites, but too nervous and restless to allow of close approach. Old nests were found at all levels from 50 to over 600 feet, and many of them were well-preserved and neatly shaped, some like truncated cones, but others with a column more cylindrical, nearly a foot high, and cupped on top. It is difficult to form an estimate of their number as they are on steps and ledges on spurs and hillsides, often surrounded by scrub. Where a ledge is not naturally wide enough to allow a bird to manoeuvre and use its wings, considerable excavation, presumably with bills, has been done in the banks at the back. This includes the cropping off of hanging and exposed roots.

Apart from the few mollymawks over the land this species was not in December noticed at sea round the island where the abundant mollymawk was the form of a **T. salvini**, which breeds on the Snares Western Reef.

On July 20 they were at sea round the Solanders in great numbers, and dotted conspicuously over their nesting sites on both islands. Two or three hundred nests occupied on Little Solander were in very exposed situation on the steep slopes amongst **Poa foliosa**. On the big island many were in better shelter and some far enough under **Hebe** bushes to cause the adults to crouch and dodge branches when approaching them. The young were practically all well-fledged with less down than contour feathers; some certainly could have flown in less than a fortnight from that date. One looked more downy than fledged; but most had their white-plumaged heads clear of down, and the dark horn-coloured bill that gives little promise of the bright adult colour. They were being fed, three or four deliveries per parental visit, and no striking variation was observed from the usual feeding posture of other albatrosses, with the gapes at right-angles. Not all nest sites were occupied; many were not in use, and on as many more adults were displaying—tail-spreading, bowing, bill-rubbing, and mutually preening. The whole scene was both animated and noisy, the commonest call being a lamb-like bleat which echoed weirdly round the hill: the other cry was a staccato rattle. Both I take to be made by adults, but did not confirm the fact. The difficulty of estimating numbers on a short visit has been mentioned; but there were several hundreds in view on a face which is less than a quarter of

* This was pointed out (Falla, Rec. Auckland Inst. and Museum, vol. 1, No. 6, p. 324, 1935, from a study of museum specimens.

the available ground. Many are hundreds of yards from their nearest neighbours, and in this matter of scattered distribution on a nesting-ground **T. bulleri** differs markedly from the concentration found in **T. culminata** and **T. melanophrys**, while **T. cauta** is somewhat intermediate in this respect.

Cape Pigeon **(Daption capense)**.—There is no conclusive justification for including Cape Pigeons in a Solander list, but when a fulmar begins cruising steadily round clefts in steep cliffs one begins to suspect its intentions. Twenty or thirty of them were doing it round the Little Solander in December; while in July a compact group of about the same size was manoeuvring at sea near the island with the precision of a flock of domestic pigeons.

Broad-billed Dove Petrel **(Pachyptila vittata)**.—There is little doubt that on the Solanders as at many other islands in the Foveaux Strait area, the breeding prions are **P. vittata** and **P. turtur**. All that we happened on in the brief time available in December were empty burrows and blue feathers and white feathers everywhere, with wekas patrolling the area. On July 9, at dawn (this was a visit on which no landing was made) **P. vittata** was seen in numbers round the island, but they vanished with daylight.

Fairy Prion **(Pachyptila turtur)**.—On Little Solander on July 20 the skua and (or) hawk castings contained recognisable remains of this species.

Sooty Shearwater **(Puffinus griseus)**.—Burrows of muttonbirds were plentiful on Big Solander at all levels, but not in great concentration, and birds with eggs were examined on December 9.

Allied Shearwater **(Puffinus assimilis ?)**.—In December, Dr. R. C. Murphy saw a small white-breasted bird like a shearwater emerge from the scrub and fly seaward. In July, I picked up the feathered wings of a small shearwater identifiable as **P. assimilis** and agreeing with **P. a. kempi**.

Diving Petrel **(Pelecanoides urinatrix)**.—Seen offshore in December and July in numbers, diving petrels were found in July to be the principal burrowing petrel on Little Solander. The burrows start at the lowest edge of the peat cap of the island, many in waterlogged situations and others in dry tussock mats. There was evidence of much nocturnal scraping, but only one bird was found at home to our call at 11 a.m.

Australasian Gannet **(Moris serrator)**.—For many years gannets on the Solanders have had the status of an unconfirmed fisherman's tale. Odd birds are seen in Stewart Island waters every summer, and were reported by Stuart Sutherland (Press articles about 1920) as regular visitors to Preservation Inlet. Also, in late April, 1948, Mr. A. J. Black saw an exhausted young gannet in speckled plumage in Caswell Sound. The difficulty was to imagine how the exposed type of nesting rocks favoured by gannets in more mellow latitudes north would be even tenable in gale-swept Foveaux Strait. Gannet colonies are so conspicuous that one expects to see them at a distance, and several passing surveys had failed to disclose any white patches on the sombre Solanders.

A few gannets were on the wing there on December 9, and approaching Little Solander from the N.W. we watched some alight on it. Most of them dropped out of sight into a tiny scrubby gully near the top; but six birds were sitting in the tussock at the foot of the slope. We watched them flying in and out for some time and concluded, to quote our notes, "that there could not have been more than 20 nests, probably fewer."

It was in the hope of examining the sites, but no expectation of finding birds so early, that we made our landing on July 20. The advance guard, however, already was there, about fourteen birds in all. By cautious approach they were seen to be billing, bowing and displaying generally, all on nest sites; but they soon took fright and flew away. The nests themselves were all old mollymawk nests in varying stages of flattening, and the total count was 11 in the gully, 3 on the spur just

above, making, with the six at the foot of the slope, 20 nests in all. Each departing bird disgorged before leaving a neat pack of fresh fish of herring size, four to five fish in a pack of total weight about 1lb.

Such is the story to date of our most southerly known colony of **Moris serrator.** Although as a systematist I should be prepared to find such a quaint and outlandish group of gannets composed of a distinct sub-species the only superficial feature that seemed to distinguish them from northerners was the pale washy tone of their head colour.

White-fronted Tern **(Sterna striata).**—Numbers were flying about in December, probably nesting round the shores, and a compact flock was noticed on an outlying rock in July.

Red-billed Gull **(Larus scopulinus).**—These gulls were not abundant but at least one small breeding colony was established on tumbled rocks below which was a "pupping" rookery of fur seals in December.

Black-backed Gull **(Larus dominicanus).**—In December a few nests were distributed along the north-east beach above high-water mark. The few chicks that had hatched were very small, and the maximum egg-clutch was three.

Southern Skua **(Catharacta lonnbergi).**—One or two nesting pairs seen in December, and an odd bird on the wing in July, suggest that the skua is not as common as might be expected.

Stewart Island Weka **(Gallirallus scotti).**—The usual reddish form of the Stewart Island weka, of which no plumage variant was noted, is abundant and bold on Big Solander. It already has been remarked that burrowing petrels are hard to find, and there is little doubt but that steady depredation by wekas is responsible for the high proportion of old disused burrows overgrown with moss, and the many damaged and empty new burrows. The seal rookeries also are happy hunting grounds, and in December wekas were busy devouring after-birth. At this time one pair was seen with a half-grown chick.

Reef Heron **(Demigretta sacra).**—One pair seen in December, but not noted on winter visit.

Harrier **(Circus approximans).**—Seen soaring over Big Solander, and doubtless visiting the small island also.

Yellow-crowned Parrakeet **(Cyanorhamphus auriceps).**—There are parrakeets on both Solanders and those seen at close quarters were all **auriceps.**

Grey Warbler **(Pseudogerygone igata).**—Warblers on Big Solander seemed more plentiful in proportion than is usually the case in island populations. One nest found was composed so largely of feathers, with only a few fibres to support them, that it fell to pieces when handled. The feathers were mainly prions, with a few parrakeet.

Fantail **(Rhipidura fuliginosa).**—Pied fantails were seen on Big Solander.

Yellow-breasted Tit **(Petroica macrocephala).**—Tits were plentiful on both islands and normal male and female plumages were noticed.

Bellbird **(Anthornis melanura).**—Fairly common on Big Solander.

Silver-eye **(Zosterops lateralis).**—Several pairs and small parties noticed on Big Solander in December.

Hedge Sparrow **(Prunella modularis).**—Colonisation of outlying islands is a marked propensity of this little deportee, which occurs on both Solanders.

Blackbird **(Turdus merula).**—Also on both islands.

The above list is certainly far from complete, and will remain so until some visitor has time to observe more carefully and to reach the higher saddles. There is just a chance that there may be snipe on Little Solander, where the ground, though restricted, is suitable, and where we heard a snipe-like call when leaving. We were not able either to record a pipit, which seems a likely bird; and why there are no shags is as interesting a question here as it is at the Snares.

WHIMBREL AT CLEVEDON.

By H. R. McKenzie, Clevedon.

The first whimbrel **(Numenius phaeopus variegatus)** to be recorded in the Clevedon district was seen on 6/4/47. It was resting on a tide-flat at Mataitai with a party of wintering godwit **(Limosa lapponica)** and was seen from the road with the aid of binoculars at about 200 yards. The light was failing so nothing could be done that day. On 8/4/47, Miss M. J. McCallum and the writer tried to get a closer view with the rising tide. The darkness came too soon and only distant views by telescope were obtained. Its shape, stance and curved bill were noted. On 12/4/47, Messrs. V. I. Clark, F. Murray and the writer crept into a position in long grass on a tiny tide-flat island 45 yards from the whimbrel. With telescopes it could easily be seen to blink its eye. One of the party took down notes while the other two, using his prostrate form as a rest for their telescopes, worked from the tip of the bill to the end of the tail, discussing each marking and feature. The minute detail thus obtained agreed perfectly with Oliver's description in "New Zealand Birds."

While this procedure was taking place the whimbrel and 23 godwit with it could see us plainly but showed no fear. Also we talked in tones easily heard at 45 yards, but were subsequently informed that they probably could not hear us at all as our voices would be pitched too low for them. To put them to flight it was only necessary for one of the party to stand upright. The writer had been warned by Mr. R. B. Sibson to look for the light blaze up the lower back, visible only in flight, or in hand, because this species is hard to separate from the American **Numenius phaeopus hudsonicus,** which has a darker back.

Having made the bird fly we could easily see the light rump, even without the use of glasses. This left no doubt of its identity. Another close inspection was made on 19/4/47 at the same spot, by Miss M. J. McCallum, Mr. O. Cheesman and the writer. Messrs. J. W. and R. B. St. Paul and party saw it more distantly on 27/4/47.

On none of the above-mentioned occasions had this bird made any call, but on 4/5/47 Miss M. J. McCallum saw it flying along the beach as if looking for its companions, and it called repeatedly. The sweetly rippling call cannot be mistaken and has earned for the whimbrel in Britain the name of "seven-whistler."

The godwits with which the bird associated were wintering ones which had failed to leave in the autumn with the breeding birds. Each year about seventy are left at Mataitai, but by the end of June they have all disappeared, presumably having gone to the Manukau. It was therefore not surprising that the whimbrel was not seen at Mataitai after 4/5/47, as the godwits had then nearly all gone. Nor was it surprising when Mr. D. A. Urquhart reported a whimbrel at Karaka and identified it as the same sub-species. This was exactly opposite Clevedon and only twenty miles away. It is very probable that it was the same bird and that it had gone over there with some of the last of the Mataitai godwits. It was, of course, evident by this time that it was spending the winter in New Zealand.

From recent reports (R. B. Sibson, "Bulletin of the O.S.N.Z." No. 2, 1941-42) and (E. G. Turbott, R. B. Sibson and R. H. D. Stidolph, "N.Z. Bird Notes," Vol. 2, No. 3) it is evident that whimbrels must come to this country nearly every year. To assist observers to find it among the godwits I would suggest attention to the following points:—(a) The long down-curved bill; (b) the pretty trilling call, made most often when the bird is put up; (c) the darker colouring; (d) frequent pursuit of it, usually by one godwit, when the flock is in the air. This action alone is worth watching for, as it could easily led to the discovery of a whimbrel.

The thanks of the writer are due to Mr. E. G. Turbott, ornithologist at the Auckland War Memorial Museum, for help with specimens for comparison, and to Mr. D. A. Urquhart, of Karaka, for his co-operation and for guiding a large party of observers on 2/6/47 to the Karaka haunt of the whimbrel.

DISTRIBUTION OF MYNA IN N.Z.

By J. M. Cunningham, Masterton.

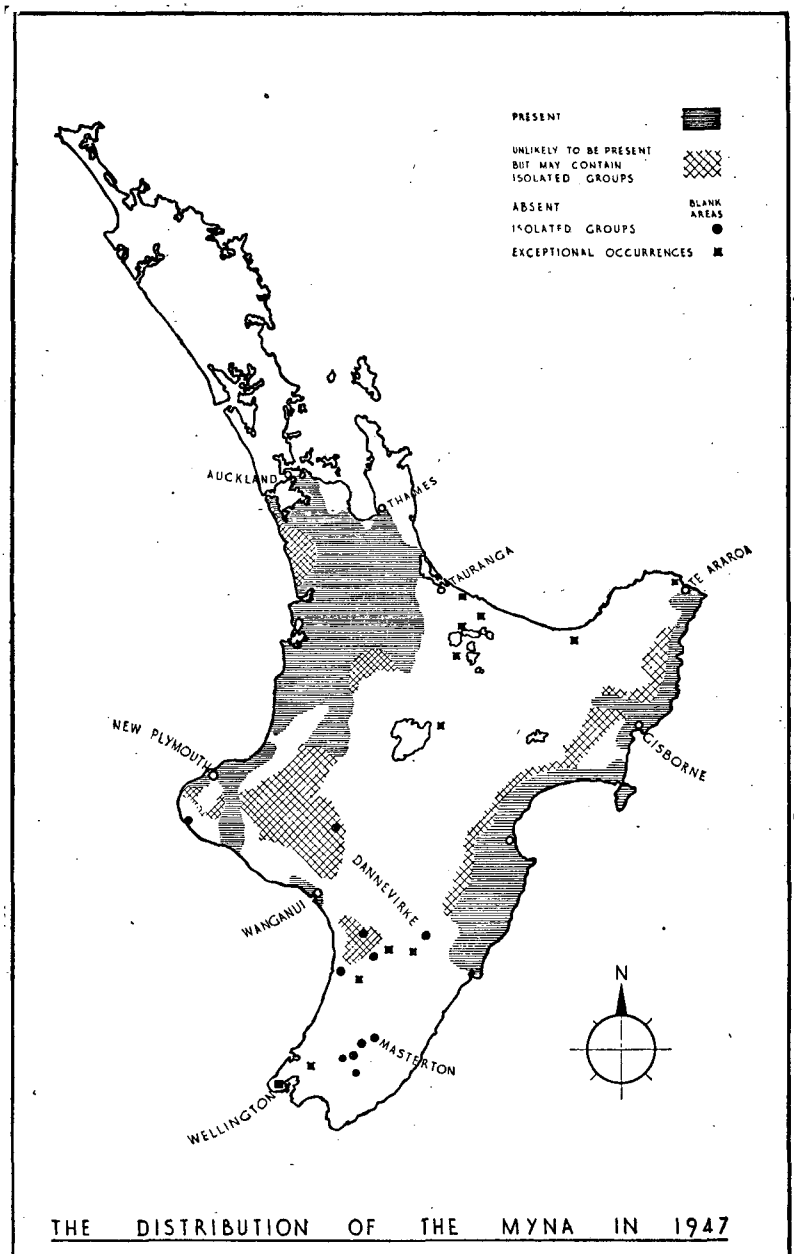
According to Thompson (1922) there is little doubt that the Indian myna **(Acridotheres tristis)** in New Zealand comes from stock naturalised in Australia from India. The myna, spelt variously as mynah, and minah, has been introduced into several countries, and the story everywhere has been of its remarkable increase. In New Zealand, scores and hundreds were liberated "in all centres" by private individuals and a few acclimatisation societies in the early 1870's. They bred everywhere, spreading rapidly at first, but soon began to decrease, ultimately to disappear in many districts. At one time they were common enough in Dunedin, Christchurch and Nelson. From these places they had disappeared completely by 1890 and there are now no mynas in the South Island.

Even as early as 1875 it was stated that "they are not now common about Wellington," and had not again been recorded there during this century until last year, when two stragglers were reported. They were more numerous at one time in the Wairarapa, and have apparently also decreased in the Manawatu. The Taranaki and Hawke's Bay populations extending north to Mt. Messenger and Te Araroa respectively, appear to be more or less stable at the present time, but the Waikato population presents a picture of continuous and aggressive expansion.

The cause of the early rapid expansion and later decrease is not known, though it was suggested that the rapid increase of the starling **(Sturnus vulgaris)** also had something to do with it. Statements thereon are conflicting: Thompson (1922) describes how a pair of starlings displaced a pair of mynas from a nesting site, but correspondents inform me that the myna will attack and drive away starlings, one pair occupying an area in which several pairs of starlings would breed. They are thus reported to be displacing starlings in many localities, but my own observations tend to disprove this, as starlings appear numerous in many places where mynas are extremely common, and Oliver (1930) says that where the two come into contact, the myna generally has to give way.

The course of expansion and colonising follows that described by Guthrie-Smith (1921) in "Tutira." The first pair appeared at Tutira Homestead in 1884, five years after liberation by the Hawke's Bay Acclimatisation Society. Odd pairs reappeared each year until 1889, when they first nested successfully. At first using nesting-boxes put up for them, they became less dependent on man-made sites each year. When in small numbers they prefer the habitations of man, but as they increase they seem to overflow into the rural areas. In the Wairarapa and Manawatu, for example, they are, as a rule, only seen in the towns, but in the Waikato and parts of Hawke's Bay their distribution is more regular. They appear particularly numerous in the vicinity of pig farms, where they relish the skim milk, and are said to perform a useful service in delousing the pigs.

This paper is the result of an appeal for information in "New Zealand Bird Notes" in January, 1947. The response has been gratifying and many members of the society willingly supplied notes. Many referred the writer to correspondents and this in turn led to other sources of information. Owing to limited time, I have not tapped such possible sources as "The Weekly News." I have had many discussions on the subject, and many of the records are my own or have been confirmed personally. The file consists of well over 50 letters: I have attempted to reply to each writer (several times in many cases), but offer my tardy apologies to anyone who has been missed. It is remarkable how evidence has been corroborated in many instances, and pleasing to note that few records have had to be rejected as being unreliable. I give my thanks to all who have helped: it is difficult to single out anyone in particular, but I must acknowledge the particularly valuable co-operation of Messrs. R. B. Sibson and E. G. Turbott, who have contributed so largely to the prolific Auckland-Manukau reports. Many localities have also been covered by the records of Mr. R. H. D. Stidolph, Mrs.



THE DISTRIBUTION OF THE MYNA IN 1947

I. Tily and Mrs. P. J. Taylor. I am grateful also to Mr. N. Inkster for his drawing of the accompanying map.

As inferred above, the North Island distribution can be divided into four main areas, which will be treated separately. It is known that mountain ridges, or a few miles of heavy bush, will restrict the expansion of the myna for years, even though odd birds will cross these barriers at intervals. There seems to be a certain minimum population below which the myna does no more than hold its own. It is perhaps inevitable that in an investigation of this sort, emphasis should be given to the main roads, but I have tried to trace the position in the back areas as far as possible, often going out of my way when touring to investigate back roads. Because of the probability of future changes in distribution, present localities are given in some detail for the benefit of future investigators.

WELLINGTON-WAIRARAPA.

As stated earlier, Wellington once had a large population of mynas, and it was more numerous, though never common, in the Wairarapa. They had apparently disappeared from the city by 1890 or 1900, and are now only to be found in the towns of Featherston, Martinborough (also 40 years ago, I.T.), Greytown, Carterton and Masterton. There are only a handful of birds in each of these towns, and their number has remained more or less constant over many years. In Masterton a small group of birds will remain faithful to one locality for years, and will rarely be seen away from it. Such places are in Vivian Street, Tararua Street, Church Street (old gasworks), and Queen Street (Wagg's Garage). They wander occasionlly, having been seen in Renall Street for instance, and it is not very surprising that they should at times be reported from Wellington. H.R.M. believes he heard one at Hataitai, not since confirmed, in February, 1947, and P.C.C. recorded one at Upper Hutt in 1946.

HAWKE'S BAY—EAST CAPE.

Repeated liberations gave these birds a flying start, and they remain a constant and conspicuous sight in the Napier and Hastings area. Their present southern limit in the countryside is just south of Waipukurau (J.M.C.), though there are small but flourishing colonies in Dannevirke (1947, J.M.C.). There are none in Woodville (C.A.F., 1941; 1947, J.M.C.) though R.H.D.S. saw one between here and Dannevirke, 31/10/39. From Waipukurau they extend to the coast, as far south as Porangahau (J.M.C. and K.A.W., 1948). I imagine they are probably present inland as far south as Weber. Though present in Waipukurau and Waipawa (1931, R.H.D.S.; 1947, J.M.C.), not many are seen along the main road until about Te Hauke (1940, I.T.; 1947, J.M.C.), but from there on they are conspicuous to well past Napier. They may be seen almost anywhere on the coastal plains, on the shingle river spits, amongst the nesting gannets at Cape Kidnappers (Wodzicki and McMeekan, 1947), but do not extend inland far into the hills. In 1947 I saw none further than two miles west of Puketapu (and Oheiti Station, c. 20 miles west of Hastings, present 1940, I.T.). Further inland, as is expected, R.N.K. says there are none in the areas of the headwaters of the Waipawa River, and the Kaimanawa and Kaiweka Ranges.

Continuing north, they may be seen at intervals right through to Gisborne, particularly in the townships, and are numerous at Wairoa, (1931, R.H.D.S.; 1940, I.T; 1947, H.B.R.S., J.M.C.), and present at Tangoio (1940, I.T.), Tutira (Guthrie-Smith, 1921; 1931, R.H.D.S.; 1940, I.T.; 1947, J.M.C.); Mohaka Gorge (1931, R.H.D.S.; 1940, I.T.; 1947, J.M.C.). Inland, it is probable they extend a few miles only up the Esk Valley and Waikaremoana roads: they are not seen at Waikaremoana (I.T.). North of Wairoa, groups may be seen here and there: Morere (1931, R.H.D.S.; 1947, J.M.C.). There is a complete break caused by the Wharerata Hill (1675ft.) on the Morere-Gisborne Road (1947, J.M.C.), and there are few if any on the Frasertown-Gisborne Road (1940, I.T.). Inland from Gisborne, they extend to between Te Karaka and Otoko (1931, R.H.D.S.; 1940, I.T.).

Further north, rural birds are not often seen beyond Tatapouri (1947, J.M.C.) but are reasonably common in Tolaga Bay and Tokomaru Bay (1947, J.M.C.), Ruatoria (1947, R.K.), Tikitiki (1947, J.M.C.), and Port Awanui (as long as he can remember, A.H.). These colonies do not give the impression of being flourishing. Birds doubtless extend up all the valley roads to station homesteads, e.g., P.J.T. gives the following information concerning the Kopuapounamu Valley Road, inland from Te Araroa: Six or seven miles up from the Awatere Bridge, A.H. said, they were not present 30-40 years ago, but two or three pairs have nested each year since his return six or seven years ago. Two miles on, C.W. reports two or three nesting pairs, each rearing one young only, and W.F.M. says they are only rarely seen another two miles on. They may be commonly seen at and near Te Araroa (20, 1940, R.B.S.; 1947, J.M.C.), and have been seen in recent years at Hicks Bay (1937, P.C.H.) and a little beyond (1940, R.B.S.).

Liberations c. 1890 at Matahua Station (? inland from Tolaga Bay) by a member of the Williams family (to help control the sheep tick) were successful and by 1910 birds had spread to Cape Runaway (A.E.K., R.H.W., R.K.). However, A.E.K. has seen only four here, years apart, since 1909, and J.F.W. a few in 1913. To all intents and purposes, therefore, their limit in this area is at present at Te Araroa (I saw none at Hicks Bay in 1947), and it will be interesting to see if they spread along the Bay of Plenty coast. Apart from a single bird which has resided at the Convent in Opotiki for five or six years (N.P.), there are no others in this area until well beyond Whakatane (N.P., A.E.K.).

MANAWATU—TARANAKI.

In the Manawatu and Taranaki areas Thompson (1922) said they were to be found in 1875-76: later they were said to be less numerous though still common in Taranaki, in 1922. For many years now their southern limit has apparently been at Palmerston North (H.T.W., 1941). They are not numerous there: two were in the hospital grounds "for years," and there are several there now (1947, E.C.M.). Two were seen in the Square and some at the Railway Yards (1943, R.H.D.S.), though I have never seen any on my infrequent visits. Southwards, they have not been seen at Levin (H.T.W., 1941; 1947, A.S.W., E.C.M.). A.A.S. says a pair released at Foxton at the east end of Lady's Mile, increased in four years to eleven. They all remained in the vicinity until 1946, when some established themselves at the racecourse a quarter of a mile away. The original pair was liberated by Mr. Battersby, having been given them by Mr. Bismark, who brought two pairs from Napier, releasing one pair nine miles north of Levin. One bird was drowned in a milk vat, and the other disappeared a year later. Mr. Battersby stated they were common in Foxton 30 years ago, and were fairly common at Tokomaru up to 10 years ago. Mr. Stevenson, of Tokomaru, said that the last he saw there was about 10 years ago. A.A.S. can find none there now, or in Shannon.

Present 30 years ago in Feilding (C.C.H.P.), there are still small numbers there near the railway yards (1947, J.M.C.). Seen in Ashhurst in 1927 (R.H.D.S.) and one or two pairs being present (in the town only) between 1933 and 1942 (C.C.H.P.), I looked for them in vain several times during 1946 and 1947. I have not seen them at Bunnythorpe, Halcombe, Sanson, Bulls or Marton, though I think they may be present in small numbers at the latter place. Thompson (1922) mentions them as following the plough in that area. I have not seen them, and feel confident there are none, up the Cheltenham-Taihape Road or up the Hunterville-Taihape Road. There are none at Waiouru or over the Desert Road (1946, 1947, J.M.C.) or the Taihape-Napier Road (1948, J.M.C.), or at National Park (1947, R.H.D.S.).

They commence again, perhaps even without a break, near Turakina, and are common in parts of Wanganui. (Correspondent to James Drummond's Nature Notes "Auckland Weekly News," 27/2/22; 1928, R.H.D.S.; 1947, W.P.M., J.M.C.). C.A.F., however, did not record them in January, 1948, at Turakina, Mangamahu or Fordell. F.W.D. says they are also to be seen at Castlecliff. There are some in Raetihi (1928, 1933,

R.H.D.S.; 1947, H.R.M., W.P.M.), and possibly in small numbers in between (W.P.M.). After a gap round Waitotara (W.P.M.), they may be seen in most towns right through to New Plymouth, e.g., Waverley (J.F.W., only odd ones during last eight years, but very numerous 35-40 years ago); Patea (1928, R.H.D.S.); Hawera (1935, R.H.D.S.; 1947, J.M.C.); Eltham (1920-23, plentiful, M.E.F.; 1928, R.H.D.S.; 1947, H.R.M.); Tariki (1933, R.H.D.S.); Inglewood (1933, 1941, R.H.D.S.; 1939, A.A.M.; 1947, J.M.C.). They are common in parts of New Plymouth (1928, 1941 ,R.H.D.S.; 1946, J.M.C.), and in 1928 R.H.D.S. recorded them from nearby localities such as Ratapihipihi Bush, Puketi Pa, Huatoki, Rotokare, and in 1941, from Egmont Village. The only information I have from west of the Hawera-New Plymouth Road is that there are between 10 and 30 in the Opunake township (none outside it) and that they have been there at least 10 years (1948, F.D.C.). Seen in 1933 at Te Wera (R.H.D.S.), they were just appearing at Matiere in 1931, and believed to be spreading up the Ohura Valley (P.A.S.) though possibly these birds are spreading from the Te Kuiti-Taumarunui colonies. They may also be seen (1947, J.M.C., S.D.P.) right through Waitara as far as Uriti and Mt. Messenger, with a decided break here to Mokau, the southern limit of the Waikato expansion.

WAIKATO—AUCKLAND.

Beyond Thompson's (1922) statement that mynas were liberated "in all centres," and he makes no direct mention of this area elsewhere, I have no information as to the origin of these birds. C.E.C. says that in 1905 and 1906 it could occasionally be seen in the streets of Auckland, disappearing later, and there is a report of one being shot in Epsom c. 1891 (J.R.), and another c. 1900 (A.W.). It seems strange that these are the only early records that have come to hand.

During the last 30 years they seem to have spread fanwise in a general northerly direction, apparently from the Te Kuiti area. Though I do not know when they arrived, they were present 30 years ago in Te Kuiti (W.F.I.H. and H.M.) and Morrinsville in 1912 (N.T.), where they evidently died out later. C.W.K., writing to James Drummond's Nature Notes in the "Auckland Weekly News" of 9/9/23, stated that the first two seen at Te Mawhai, south of Te Awamutu, appeared in that week.. C.W.K., who still lives there, states that they have not increased since then as much as expected. The first birds reached Matamata in 1923 (fewer than 6, M.E.F.); Arapuni, about 1927 (J.R.); Tirau, 1928 (M.E.F.); Taupiri, 1929 (S.D.P.), and Morrinsville, 1929 (S.D.P.). C.A.F. says he has no recollection of them between Hamilton and Cambridge, c. 1928. In 1928 and 1929 they were also present at Mokau, Awakino, Mahoenui, Te Kuiti, Hangatiki, Otorohanga (E.G.T.), and Waitomo (S.D.P.). There were several pairs at Pirongia, west of Otorohanga, in 1929 (S.D.P.); an odd bird appeared for a day or two at Paerata, north of Pukekohe, on 28/5/28 (S.D.P.), and information from J.R. suggests that they reached Huntly, advancing at 8-10 miles annually, in the early 1930's (S.D.P. gives 1936). There were only a few at that time at Waingaro, north-west of Hamilton (P.C.B.).

In 1935 they were present in the Mangaotaki Gorge, north-west of Pio Pio, and at Te Anga (R.H.D.S.). They were still to be seen up the Awakino Valley, and were also in the Raglan-Kawhia district (R.H.D.S.) though I do not know when they reached there. A few were breeding at Te Aroha in 1936, and one was seen at Patetonga to the north-west (S.D.P.).

The years 1936 to 1942 appear to have been a period of consolidation in preparation for further advances, for I have no new records during that period. In 1941 P.C.B. suggested that the northern limit was at Ohinewai, just north of Huntly. They were first noticed in Paeroa in 1942 (G.V.M.); Netherton, to the north-west, in 1943 (D.S.C.); and Hikutaia further north c. 1942 (a few only, P.A.S.). There were odd parties near Tauranga (M.H. 1943, and 1944 J.O.). By 1945, the northern boundary had reached East Tamaki—Howick (L.A.B., 1946), though odd birds had been seen, never staying long, at Otahuhu (1/10/42, R.B.S.; 25/10/43, A.T.; 8/7/44, 20/11/45 and 11/4/47, 7 together, R.B.S.).

From 1944 to 1947 they were also appearing at more frequent intervals in the vicinity of Papatoetoe, and R.B.S. has given me 16 occurrences for Manurewa, Papatoetoe (flock 25, October, 1947, Mr. Gray), Tamaki East, Howick, Mangere, Buckland's Beach, Pahuranga, Westfield, Penrose, West Tamaki and Glendowie. At the same time birds were turning up in South Manukau, the first pairs breeding at Karaka in 1942 (I.U.). On the west Manukau peninsula, there appeared to be none at Waiuku (R.B.S.) or Awhitu and Orua Bay (B.C.B.) in 1942, but were occasionally seen here in 1947 (B.C.B.), and also at Waipipi 1945-46 (W.J.I.).

It will be seen that the birds have been lining up for a frontal attack just south of Auckland proper during the last year or two. A.W.P. received a report of a bird at Remuera c. 1944, but 1947 has seen the advance guards enter the city. In November, 1946, a pair bred at Panmure (D.M., L.D. and others), and subsequent records are: Three Kings, 1 seen 2/1/47 (T.L.); Auckland Domain, 1 seen 21/7/47 (T.L.); Hobsonville, occasional 1947 (R.B.St.P.); New Lynn, four, 2/9/47 (M.P.) Blockhouse Bay, two, 10/10/47 (F.W.); Northcote, reported 13/10/47 (E.G.T.); St. Heliers Bay, for the last three years, up to four at a time (W.H.B.)

Thus, by 1947, mynas were present and common over practically all the Waikato and Hauraki Plains and entering the southern suburbs of Auckland, e.g. Te Kuiti (W.F.I.H., C.C.H.P., J.M.C.); Waitomo, Kawhia, Te Awamutu, Parawera, Arapuni, Putaruru, Waingaro (P.C.B.); Morrinsville (N.T., F.G.S.); Te Aroha (F.G.S.); Paeroa (G.V.M.); Netherton (D.S.C.); Hikutaia, increased from a few to "hundreds" in five years (P.A.S.); Cambridge, Hamilton, Mercer (J.M.C.); and they could be seen in the country between all these towns. They still extended down the Awakino Valley in small numbers (J.M.C.) and as far south from Te Kuiti as Tangitu. From here there was a break to Okahukura, but there was a good number in Taumarunui (W.A.P.). I have no information from west of Huntly–Mercer, but they have been present in Clevedon and some six miles east for some years, and are some two miles south of Duder's Beach (H.R.M.). On the west side of the Firth of Thames none was seen until 23/5/43 (H.R.M., R.B.S.). Breeding started near Miranda in 1943-44 and there are now c five pairs. They breed as far north as Whakatiwai and have been seen up to Wharekawa North (five, 24/8/47, R.B.S.). They extend as far as Thames (W.P.M., R.B.S.) but no further (F.G.S.). They were not seen at Waihi Beach in February 1947 (J.H.C.), but were stated to be common at Katikati (J.S.W.). In Tauranga there were still only a few breeding (S.D.P., M.H.), and there were some, arrived within the last two or three years, at Te Puke (F.G.S., A.S.). The most easterly record in this area is from Pongakawa, c. 30 miles east of Te Puke (occasional in 1944, G.A.M.). In 1947 I saw one breeding in the Kaimai Bush, south of Tauranga, but none on the Bay of Plenty coast. On the Taupo Road they extend to just south of Tokoroa (J.M.C., K.A.W.) and on the Rotorua Road as far east as Fitzgerald Glade in the outskirts of the Mamaku Bush (J.M.C., H.R.M., K.A.W.) In Taupo, J.S.A. stated (30/10/31) "odd ones turn up every few years." He has only seen one since. At Rotorua they had not been recorded up to 1943 (M.E.F. and others). D.R. saw three at the Whakarewarewa Forest, 1946; R.B.S. and R.M. each have a record for 1946-47; and there is a report of two at the Ohau Channel, Lake Rotorua, in 1946. Two were reported to R.B.S. from Hamurana Springs, 1947, and R.M. was told of one here in March, 1948. He also saw two more in Rotorua at this time.

North of Auckland. they have not yet been reported. They are stated to be absent from Waiheke Island (P.A.S.), Little Barrier and Great Barrier (W.M.H.), and the Warkworth area (W.M.H., D.N.L.).

ROAD COUNTS.

Road counts have been furnished in a number of cases: the method is to count birds seen between the edges of towns. Those seen within the boundaries of towns such as Cambridge are omitted. In the smaller townships such as Putaruru, Tirau, a division is made in the centre.

Such road counts are not of great value in themselves except as a convenient way of learning the limits of range and making a journey of more interest, and can only be applied successfully to conspicuous birds such as the myna, magpie and harrier. However, in a number of cases where sufficient counts are available, I have shown the results below. Partial counts have been heavily culled and seasonal variations have been noticed. No apology is made for converting such small sample counts to figures accurate to a decimal place in the average. A perusal will show that there are three areas of density, viz., near Tirau, Huntly and Otorohanga. Even the casual observer can hardly but be struck by the numbers seen in these places.

	Miles.	Counts.	Avge.	Highest Count	Avge. per mile.
Rotorua to East Mamaku	14	4	—	—	—
East to West Mamaku	11	4	0.25	1	0.02
West Mamaku to Tirau	6	4	8.5	16	1.4
Taupo to Atiamuri	26	3	—	—	—
Atiamuri to Tokoroa	12	3	5	10	0.4
Tokoroa to Putaruru	17	4	8.5	17	0.5
Putaruru to Tirau	8	3	1.3	4	0.16
Tirau to Cambridge	21	9	22	57	1
Cambridge to Hamilton	13	7	4.3	6	0.33
Hamilton to Ngaruawahia	12	4	3.5	6	0.3
Ngaruawahia to Huntly	9	3	11	21	1.2
Huntly to Mercer	24	4	6.5	11	0.27

(Pokeno, Runciman, Papakura, Manurewa, Papatoetoe and Otahuhu have been taken as divisions in counts, but there are as yet insufficient to publish.)

Awakino to Te Kuiti	47	4	3.8	9	0.08
Te Kuiti to Otorohanga	12	3	12	32	1
Otorohanga to Te Awamutu	18	3	1	3	0.06
Te Awamutu to Hamilton	18	3	11	20	0.6

APPPENDIX—INFORMANTS.

The names of those supplying information are as follow, their initials only appear in the text. (Correspondents of Mr. E. G. Turbott, and members of the King's College Bird Club are shown under their own names, and members of the society are shown with an asterisk):— Anderson, E. N.; Anderson, Miss S. I.*; Balme, G; Bell, B. D.*; Bell, V. M.; Blake, W. H.; Boyne, S.; Brewster, L. A.*; Bull, P. C.*; Bunting, G. D.; Buttimore, B. C.; Carden, D. S.; Chalmers, P. C.; Chambers, F. D.*; Clarke, C. E.; Cunningham, J. H.* Cunningham, J. M.*; Danson, E. W.*; Dephoff, L.; Fitzgerald, M. E.; Fleming, C. A.*; Gray, Mr.; Gunson, Lady J. H.*; Hamilton, Dr. W. M.*; Hawke's Bay Branch Royal Soc., members * Ornith. Sect. (H.B.R.S.); Hindmarsh, P. C.; Hitchen, S. R.; Hodgins, M.; Horton, B. R.; Hughes, A.; Hunt, W. F. I.*; Irwin, W. J.; Jones, J.; Kelliher, J.; Kemp, A. E.; Kemp, R.; Kennedy, D.; Keys, R. N.; Kimpton, B.; Kimpton, R. J.; Kirkham, C. W.; Lambert, T.; Lilburne, D. N.*; Maxwell, D.; Mead, W. P.*; Mends, G. A.; Metcalfe, Mrs. W. F.; Morrison, H.; Moss, A. A.; Murray, G. V.; McCrystal, R. J.; McDonald, Miss E. C.*; McKenzie, H. R.*; McKenzie, R.*; McWatt, B.; Oliver, J.; Palmer, C. C. H.*; Paul, W. A.; Phillipps, W. J.*; Piper, Mrs. M.; Potter, D. B.; Potter, S. D.*; Potts, N.*; Powell, A. W. B.; Rees-George, J.; Robertson, Rev. F. H.*; St. Paul, R. B.*; Savell, A. A.*; Short, F. G.*; Sibson, R. B.*; Sigley, R. J.; Simpson, S. D.; Sorensen, J. E.; Spratt, G. A.; Stein, P. A.*; Stewart, D.*; Stidolph, R. H. D.*; Strang, D. N.*; Taylor, Mrs. P. J.*; Thompson, A.; Tily, Mrs I.*; Todd, N.; Trewith, B.; Tucker, W. N.; Turbott, E. G.*; Urquhart, I.; Waller, A.; Watts, F.; Wenham, H. T.*; Wickstead, R. H.; Wilkinson, A. S.*; Williams, J. S.; Williamson, Mrs. C.; Wilson, J. F.; Wilson, R. C.; Wodzicki, Dr. K. A.*.

SUMMARY.

1. This paper summarises the past and present (1947 and early 1948) distribution of the myna **(Acridotheres tristis)**.
2. It is the result of an investigation carried out amongst members of the Ornithological Society of New Zealand and others—in all 98 co-operators took part.
3. In the Wairarapa the myna is confined to five towns and is probably dying out, or at most, barely holding its own.
4. In Hawke's Bay—East Cape the limits are from Dannevirke to the coast in the south to Te Araroa in the north. The population nowhere extends far inland into the hills and is more or less stable, being exceedingly numerous in parts.
5. In Manawatu—Taranaki the myna is not numerous south of Wanganui, though extending to Foxton. In small numbers up two inland watersheds, the northern limit is reached on the coast at Mt. Messenger. Numbers seem to be stabilised.
6. The aggressively expanding Waikato population is encroaching into the Auckland suburbs, and is bordered elsewhere at Tauranga, the Mamaku Bush, the Atiamuri Bush, Taumarunui and Awakino.
7. Mynas had disappeared completely from the South Island by the beginning of the present century.

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A VISIT TO FAREWELL SPIT.

By R. H. D. Stidolph, Masterton.

Farewell Spit, a renowned haunt of waders, had long held a vision in my mind of an ornithological treat in store and when I was on holiday in the Golden Bay district in October, 1946, by a fortunate set of circumstances I was able to spend a day at the tip of the Spit, beyond the lighthouse, in an area where the shore birds assemble at high tide. I never before saw so many interesting birds in one day, in spite of having fears that my visit might have been too early in the season to see waders in any numbers.

Probably no more prolific feeding ground for waders exists in any other part of New Zealand and it is some satisfaction to know that the whole of the Spit and its tidal flats have been proclaimed a sanctuary. Section 33 of the Reserves and other Lands Disposal Act, 1938, declared an area of 4,397 acres of Crown land on the Spit as reserved for the preservation of flora and fauna, authorised the reservation by Order-in-Council as a sanctuary of areas between high and low water marks in the vicinity and made special provisions for the care and protection of all the areas. Since the legislation was passed the tidal flats concerned have been defined by survey and set apart by Order-in-Council as a reserve, a sanctuary for the preservation of wild life. Their area is some 23,300 acres.

I arrived at Takaka on the evening of October 8, and as a good augury of things to come, I was delighted to hear, from the hotel, the

call of the weka **(Gallirallus australis)**. The next day I spent at the mouth of the Takaka River, where the presence of a flock of 34 bar-tailed godwits **(Limosa lapponica)** indicated that this bird had arrived from the Northern Hemisphere. Also recorded here were four blue herons **(Demigretta sacra)**, nine plus black-backed gulls **(Larus dominicanus)**, 37 small gulls, probably red-billed **(Larus novaehollandiae)**, 38 grey ducks **(Anas poicilorhyncha)**, 17 black shags **(Phalacrocorax carbo)**, six plus white-throated shags **(P. melanoleucos)** one of which had a white breast, four white-fronted terns **(Sterna striata)** and four banded dotterels **(Charadrius bicinctus)**. Also reported in this locality though I did not see the bird, was the white-faced heron **(Notophoyx novaehollandiae)**.

In the vicinity of Takaka were the bell-bird **(Anthornis melanura)**, tui **(Prosthemadera novaeseelandiae)**, pipit **(Anthus novaeseelandiae)**, pied and black fantails **(Rhipidura fuliginosa)**, kingfisher **(Halcyon sanctus)**, silver-eye **(Zosterops lateralis)**, pukeko **(Porphyrio poliocephalus)**, grey warbler **(Pseudogerygone igata)**, native pigeon **(Hemiphaga novaeseelandiae)**, shining cuckoo **(Chalcites lucidus)**, one was heard calling on October 10 on the banks of the Takaka River; and Caspian tern **(Hydroprogne caspia)**.

I arrived at Collingwood on October 11 and in the early morning of the next day heard a bittern **(Botaurus poiciloptilus)** booming in the Aorere River flats. On the estuary were about 350 godwits in several flocks; eight South Island pied oyster catchers **(Haematopus finschi)**, two white-fronted terns, three red-billed gulls, two grey ducks, two white-throated shags (one with a mottled breast), a gannet **(Moris serrator)** and about 50 black-backed gulls. The following morning a shining cuckoo was calling persistently near the hotel. Six white-throated shags were recorded that day, two having white breasts. The number of red-billed gulls increased to seven and of the South Island pied oystercatcher to 29, besides two black oystercatchers, probably **(H. unicolor)**. Eight pied oystercatchers took off to the south, flying fairly high and strung out. Five Caspian terns, three black swans **(Cygnus atratus)** and two banded dotterels completed the day's count. At 6.50, just before darkness fell on the scene, 13 godwits left, gradually gaining height, circling and repeatedly changing formation until they were about 1,500 to 2,000 feet up. Then they strung out and disappeared in the direction of Takaka, into the dimming sky and following the coast line.

At Rockville, a farming district five miles inland from Collingwood, in stunted manuka areas on the hills, the fern-bird **(Bowdleria punctata)** still persists. Although I did not see it myself in a brief search for it, a farmer there who knows the bird told me that he had seen it on his property at the beginning of 1946. It was there 20 years earlier; two specimens which I saw in a private museum there were obtained in the same locality. A later communication from my farmer friend stated that five fern-birds were seen shortly after my visit. Also in this area were the weka and the bellbird. The next day on the Aorere River mudflats I saw a kingfisher catch three crabs within five minutes, the last one being picked up in flight as the bird flew upstream towards some bush.

I had made inquiries regarding a visit to Farewell Spit and ascertained that a weekly mail-car service had been started from Collingwood about six months earlier. But what was most fortunate was the fact that this week, on October 16, as the Commissioner of Crown Lands for the Nelson district and other officials were making an inspection of Crown lands on the Spit, the mail-car would remain at the lighthouse over *high tide*. That meant instead of spending only half-an-hour at the lighthouse, I would be able to pass the greater part of the day there.

October 16 broke dull, and glancing out of the hotel window I saw 13 black shags on a half-submerged log in midstream of the Aorere River but it was not an unlucky omen. Leaving Collingwood at about 8 a.m. (the mail-car runs to suit the tide, it being possible to reach the lighthouse only when the tide is out) the route is through a narrow strip of settled country between the sea and the hills to Puponga, an erstwhile

mining village. Here a blue heron was disturbed from a tidal creek which had to be forded. After a jolting crossing over a rough track at the base of the Spit through sandhills growing lupin, flax, etc., in the course of which the car managed to hang together, though giving every appearance of being likely to collapse entirely, a beautiful hard beach was reached on the western side of the Spit. Once there, the car glided along a natural speedway to the lighthouse, about 13 miles away. Along the Spit on this side were odd black-backed gulls, a few parties of South Island pied oystercatchers (8, 1, 5, 4, and 3), three black oystercatchers, and three Caspian terns.

The rendezvous of the waders on Farewell Spit, when the tide is in, is an area near the tip, where an island known as Shelly Banks provides a breeding ground for terns and gulls. Immediately after being hospitably entertained by the principal keeper, Mr. P. E. White, who provided morning tea for the whole party, he directed me to my destination. The tide was coming in and I waded across to Shelly Banks. The first thing I saw as I approached was a cloud of gulls and terns. On reaching the island, at the near end, was a black swan's nest with five eggs.

The air was full of birds, hundreds of them. There were about 800 white-fronted terns in two colonies of 500 and 300 each; they were preparing to breed; a few scrapes were seen. The birds were screaming vociferously as I approached and they presented a beautiful sight. Associated with them were about 350 red-billed gulls in two parties, 250 and 100 respectively, the larger number being with the larger block of terns At the southern end of this colony the gulls had started to nest; there were 18 nests with eggs, one with three, eleven with two, and six with one egg; many more were empty or in process of construction. One nest had a spiral shell lying with its two eggs. A colony of about 50 Caspian terns was also just starting to breed. Seven nests were seen with eggs, five with one egg each and two with two. One broken egg was quite fresh.

As the tide was coming in I could not remain long on the island, and wading back, I was in time to see hundreds of waders flying in from their feeding grounds on the south-eastern side of the Spit. Flocks of various sizes were arriving and packing into big congregations on the beach, above high water. There were just as many knots **(Calidris canutus)** as godwits. The assemblage increased gradually until there were at least 750 of each species. Also there were about 500 South Island pied oystercatchers in one compact flock, accompanied by two larger, all-black oystercatchers (probably **unicolor)**. The pied birds, in their clear cut black and white plumage presented a glorious sight in flight. I was told that this bird did not breed on the Spit but that the black one did.

Another wader seen was the turnstone **(Arenaria interpres)**. One flock of 20 was recorded, besides other parties of 8, 4, and 3, feeding on moist sand. They were very inconspicuous and could easily have been missed. Several were seen resting with mixed flocks of godwits and knots, which also had an odd red-billed gull or pied oystercatcher among them.

Around the lighthouse, where there are some large pine trees, there was a surprising number of introduced birds of the more widely-spread species. Also there was the weka, with half-grown young, and this bird was reported to be numerous all along the Spit. Fourteen black swans were seen off the Spit. A harrier **(Circus approximans)** was also noted.

The actual introduced species recorded here were:—Greenfinch **(Chloris chloris)**, starling **(Sturnus vulgaris)**, blackbird **(Turdus merula)**, song thrush **(T. ericetorum)**, chaffinch **(Fringilla coelebs)**, redpoll **(Carduelis cabaret)**, sparrow **(Passer domesticus)**, skylark **(Alauda arvensis)**, and hedge sparrow **(Prunella modularis)**. No doubt a more extended sojourn in the area would add to this list. The above species were recorded in the Collingwood-Takaka area as well and in addition, the following: Yellowhammer **(Emberiza citrinella)**, Californian quail **(Lophortyx californicus)** and goldfinch **(Carduelis carduelis)**. I saw no

sign of the magpie **(Gymnorhina sp.)** in the district nor did I meet anyone who had; I was told it was not present.

I left Collingwood the next day; the stoppage of the service car on Takaka Hill owing to radiator trouble, enabled me to add the tomtit **(Petroica m. macrocephala)** to the list of birds seen.

It is of interest to recall that when the late Mr. H. Guthrie-Smith visited Farewell Spit and the Collingwood district in 1924 (vide "Sorrows and Joys of a New Zealand Naturalist," pp. 48-53) he identified the small gulls then breeding on Bird Island, Collingwood, as the black-billed species **(Larus bulleri)**. The small gulls I saw in this district were definitey red-billed and I never saw a black-billed gull **(bulleri)**. At Shelly Banks he recorded several hundred Caspian terns breeding, but no other terns, and a few black-backed gulls. On Bird Island he saw several hundred godwits, 500 to 600 pied oystercatchers, some black oystercatchers, and he recorded as breeding on this island less than 100 pairs of Caspian tern, 12,000 to 15,000 white-fronted terns, 3,000 to 4,000 black-billed gulls, and half a dozen pairs of black-backed gulls. I was not able to visit Bird Island but through binoculars the only birds I could see flying over and settling on the island were Caspian terns in small numbers.

In the second week of November, 1919, when Mr. L. L. Redick, a visitor from America, spent two days at Cape Farewell lighthouse, according to his observations published by the late Mr. James Drummond in his "Nature Notes" column in the "Auckland Weekly News" (December 27, 1919) the Caspian tern, white-fronted tern, black-backed gull and red-billed gull were breeding on Shelly Banks, though he expressed the opinion that they were in much smaller numbers than formerly. Earlier reference in the same column by Mr. H. P. Washbourne, of Sumner, described the great change that had come over the Spit compared with what it was originally, when "there were," he wrote, "long parallel ridges of stunted bush, about 20 feet high. Between the ridges were long shallow lagoons, about knee-deep, with grass, flax and other plants filling up the hollow. . . The scene has changed indeed. The Spit now was a mass of bare driving sand. In some places the old wooded ranges showed a ghastly row of bare, dead branches, the pretty hollows were filled up with drifting sand, and only occasionally was a bird seen, making the countless numbers of former years seem incredible."

In spite of the changed conditions, as indicated above, much of interest remains, though the tremendous difference in the numbers of birds originally found in the district, compared with those of 1924 (Mr. Guthrie Smith) and those of my visit in 1946 is not very reassuring. I am referring more particularly to the gulls and terns. Perhaps some practical action can be taken to restore the vegetation on the Spit.

REVIEWS.

Darwin's Finches, by David Lack. Camb. Univ. Press, 1947.

Darwin's finches are important birds. It was his observations on these birds of the Galapagos, and on the giant tortoises and other animals there which began the train of Darwin's thought that led to "The Origin of Species." Since Darwin's day these birds have been studied by a number of other workers. This book embodies the results of the work of David Lack on the living birds in 1938-39, and his study of skins and other material in American and British museums. I would not be surprised if it comes to be regarded as a landmark in ornithological research. Darwin's finches are a group of birds closely related and much alike in colouring, nesting and courting habits, etc., and differing mainly in beak-form, size, and the food they eat. They inhabit the Galapagos Islands and Cocos Island, and are of great interest to the student of evolution. Lack reduces the 6 genera of Swarth to 4, retaining the rejected genera as sub-genera, and similarly reduces several species to sub-specific status. The whole book is so closely packed with thought-provoking material that it is hard to single out points for comment.

After a historical, climatic and geographical sketch in the first chapter, Lack deals with the problem of classification, ecology, plumage, sexual selection, beak differences, food, size differences between island forms and between species, hybridization and attempts to construct an evolutionary tree. That completes Part 1, Description. Part 2, Interpretation, deals with the origin of the Galapagos fauna, the origin of sub-species and of species, the persistence of species, and adaptive radiation. His criticism and development of Huxley's view on ecological isolation are particularly important. There is considerable illustration of his points by reference to many other species of birds. The book is amply provided with text-figures and tables, and is illustrated from photographs, drawings, and reproductions of Gould's admirable paintings of the finches. There is an extensive bibliography, full indexing, and, above all, the book is readable.—Ron Scarlett.

New Zealand Birds and How to Identify Them; P. Moncrieff. Whitcombe & Tombs, Ltd.; 8/6.

Mrs. Moncrieff is to be congratulated on publishing a third (revised) edition of this popular book. Its general style and arrangement follows that of previous editions, and it has been enlarged by the inclusion of an increased number, 18 in all, of coloured plates by the late Lily Daff, some 35 species being illustrated in colour. The large number of photographs, mainly of museum specimens, include few from life, but their value as aids to identification is obvious. Although primarily designed for identification of wild birds, many of the descriptions appear to be taken from skins, and are not very helpful in the field. Under grey-backed storm petrel, for instance, it is stated, "Head dark greyish black. Upper parts grey. Tail tipped black," and it may be doubted if such a description would be of much use to the amateur observer. It is a pity, seeing that so many children will read this book, that the 50-year fable of the grey warbler being the foster parent of the long-tailed cuckoo has again been repeated, and there are other inaccuracies, such as the white-faced storm petrel not being as plentiful as the black-bellied species. A perusal of other recent literature will reveal much that might have been included in this edition, but these criticisms apart, the book will continue to spread knowledge and sympathetic interest about New Zealand bird life. The colour plates are beautifully printed, and the whole volume is an attractive production. It will fill a much needed want as a gift book to bird lovers and ornithologists will want it on their shelves.—J.M.C.

The Life of the Robin, by David Lack. 2nd edition. Witherby, London, England.

The first edition of this book appeared in 1943. This edition is considerably enlarged, with new photographs and other illustrations, and incorporates the results of the research on the robin which has taken place since the first edition was written. It covers every aspect of the bird's life, and is a model of scientific writing, in good prose which holds the reader's interest while imparting the essential facts. To those who know Lack's work it will need no recommendation.—Ron Scarlett.

Notes on the Ecology of the Robin, by David Lack. Ibis. Vol. 90, No. 2, April, 1948; p.p. 252-279.

This important paper supplements the book reviewed above, and brings the account of robin research up-to-date. A good bibliography is included.—Ron Scarlett.

Kiwis in Captivity, as told to Robert Gibbings, by F. D. Robson, Hawke's Bay Art Gallery and Museum, Napier; Whitcombe & Tombs, Ltd., 1948. Price, 1/-.

Experiences with the kiwi in captivity are given in this publication, which is illustrated. According to Mr. Robson's observations, the male kiwi alone incubates the egg and the incubation period is from 75 to 80 days. It is an eminently readable account well worth perusing.—R.H.D.S.

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