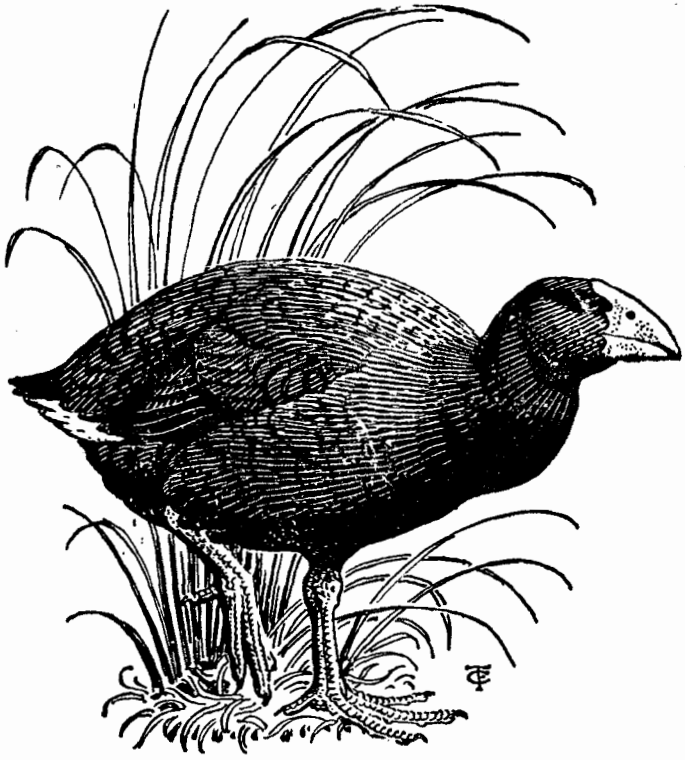
# NOTORNIS



## QUARTERLY BULLETIN

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*Volume Ten, Number Four, March, 1963*

# NOTORNIS

*In continuation of New Zealand Bird Notes*

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*Contents of Vol. 10, No. 4: March, 1963*

# A POPULATION STUDY OF THE WRY-BILLED PLOVER (Anarhynchus frontalis)

*By R. B. SIBSON*

*(Read before the Zoology Section of the Ninth N.Z. Science Congress Wellington, May, 1960)*

## INTRODUCTION

Ever since the French naturalists Quoy and Gaimard, during the voyage of the corvette *Astrolabe*, 1827-1829, discovered the Wry-billed Plover "in small flocks on mud-flats in the saltwater estuaries which surround the Hauraki Gulf ('Baie Chouraki')" this small plover has rightly been considered a rare bird, although it has sometimes been reported as locally plentiful. Now in the middle of the twentieth century when there is widespread and growing interest in the rare animals of the world, it seems fitting to try to assess the numbers of Wrybills — for this is one of the truly unique bird-species of New Zealand — and to see how they have stood up to the impact of pakeha civilisation.

The Wrybill has a very restricted breeding range in the South Island, where it is known as a nesting-bird from only some half-dozen of the larger rivers of Canterbury. There are, indeed, very large portions of the South Island where the Wrybill is quite unknown. I have not been able to find any evidence of wintering in the South Island; and it may be safely assumed that when the breeding season is over, virtually the whole population moves northwards* In the New Year Wrybills return with almost predictable regularity to certain favoured localities in the province of Auckland, where it appears that rather more than 95% of the total population spend the winter. This estimate of the Wrybill population is based on counts made over twenty years in the main winter-quarters which are, in order of importance, in the Firth of Thames, Manukau Harbour and Kaipara Harbour.

## EVIDENCE FOR NINETEENTH CENTURY

Buller's great volumes provide the only substantial evidence for the status of the Wrybill in the latter part of the nineteenth century. When the first edition of his History of the Birds of N.Z. was published in 1872, little was known of the migrations of the Wrybill to the northern coast of the country; but when the second edition came out in 1888, he was able to write:— "In the North Island the Wrybilled Plover is particularly plentiful during the spring and winter months on the extensive sandbanks at the mouth of the Kaipara, on the mud-flats of the Manukau basin, in the Bay of Plenty and on the ocean beach between Waikanae and Wanganui." Then in a footnote, a quotation from a letter which Cheeseman wrote to Buller, gives the first hint of actual numbers of Wrybills visiting the tidal flats near Puketutu Island in Manukau about 1880. "I have on some occasions seen as many as 200 or 300 together; but this is quite unusual, the flocks in that locality generally numbering from 10 to 20 birds." Cheeseman's botanical excursions probably took him quite frequently into that corner of Manukau and his use of the word 'unusual' implies

* Seven were found on Farewell Spit during May, 1962, by the members of a Field Study Course (Notornis X, 58).

that he knew it well, though it must have been much less accessible and 'workable' than it is to-day.

When Buller published his supplement in 1905, more information had come to hand. By 1895 Captain Mair had located Wrybills at the mouth of the Piako River along the southern shore of the Firth of Thames. "Here they are to be seen in thousands, and are so tame that you may knock them over with a stick." In those days, as now, the Firth of Thames was evidently the main wintering round. About the same time Mr. A. T. Pycroft was able to report that he had found Wrybills 'plentiful' on the Kaipara mudflats. To sum up, by the end of the nineteenth century Wrybills had been discovered in considerable numbers in three localities where their biggest winter concentrations are known to occur to-day.

## THE QUEST SINCE 1940

During the next forty years little was added to our knowledge of the migrations of the Wrybill, though valuable studies on its breeding in Canterbury were made by Stead (8) and Guthrie-Smith (9). North of Auckland, Wrybills were occasionally reported from the long oceanic beach of Muriwai; and in 1936 Dr. C. A. Fleming noted small flocks at Cheeseman's old locality in Manukau. More intensive study of this area began in 1940, since when few months have elapsed without visits from one local ornithologist or another, with whom the checking of the Wrybill flock has been one of their first duties. In 1941, Mr. H. R. McKenzie joined me in an attempt to visit the Miranda coast of the Firth of Thames at least once a month and the results have been richly rewarding. In 1946 Mr. D. A. Urquhart discovered a second wintering ground of Wrybills in Manukau, namely the south shore at Karaka, where the extensive sand-cum-mud flats and the muddy estuaries of several creeks provide an eminently suitable feeding ground, with shelter, if necessary, from the south and a choice of high-tide roosts. Kaipara is still far from satisfactorily known. The central area of this huge harbour beyond Okahukura and Tapora is now much more accessible by road and is being more frequently visited by ornithologists, who seldom come away without having something worthwhile to report.

## METHOD

This study of the present Wrybill population is based on counts made preferably between April and July when the numbers resorting to roosts are fairly stable. These roosts are shellbanks and bare patches of mud or sand among saltings which are above the level of the normal full tide. A harbour which has no full-tide roosts, however rich the feeding grounds which are exposed by the falling tide, will not attract many Wrybills as a permanent winter habitat. Though Wrybills prefer to roost close to the lapping water, they now readily fly over the sea-wall at Karaka into reclaimed marshland where the vegetation is still thin; and near Waitakaruru in the Firth of Thames they have often been found in ploughed paddocks; but not more than a few hundred yards from the tideline.

Because resting Wrybills are tame and easily approached, counting is seldom difficult. With patience, flocks containing some hundreds of birds can be counted exactly and flocks of up to a thousand birds can be checked, so that the percentage of error is very small. When

a large flock, estimated finally to contain 2600 birds, was examined independently by several experienced counters, their tallies were all remarkably close to the same figure. If a hasty estimate is made of a flock at a distance just in case it suddenly flies right away — which it seldom does — and the number can later be checked, experience shows that a first, rough, hasty assessment is usually well below the true figure.

As a result of the quest for the Wrybill in these three vital localities, the following figures have been obtained.

TABLE 1

WINTER COUNTS OF WRYBILLS

| | Manukau | | | | Firth of Thames | Kaipara (a) Muriwai (b) Tapora |
|---|---|---|---|---|---|---|
| | Puketutu | | Karaka | | | |
| 1940 | 16 | (18) | ? | | ? | (a) 82 on 9 June |
| 1941 | 33 | (36) | ? | | c. 1000 | (a) 213 on 27 April |
| 1942 | 60 | (62) | ? | | 1000+ | ? |
| 1943 | 63 | (64) | ? | | x 100 | ? |
| 1944 | 72 | (77) | ? | | x 100 | ? |
| 1945 | 92 | (94) | ? | | 1500+ | ? |
| 1946 | 136 | (142) | 67 | | c. 1500 | ? |
| 1947 | c. 160 | (192) | 59 | | x 100 | ? |
| 1948 | c. 210 | | 73 | | 2000+ | (a) 33 on 18 July (b) 28 on 23 Aug. |
| 1949 | c. 225 | | 65 | | 1800+ | (b) 45 on 20 May |
| 1950 | c. 240 | (283) | c. 190 | (205+) | 900+ | ? |
| 1951 | 346 | | 250 | (320) | 1430+ | ? |
| 1952 | c. 405 | | 279 | | 1400+ | ? |
| 1953 | 450+ | | c. 330 | (339) | c. 1150 | ? |
| 1954 | 600+ | (800) | 440+ | | 2400+ | ? |
| 1955 | c. 660 | (672) | c. 720 | | c. 2500 | (b) c. 30 on 3 Sept. |
| 1956 | 500+ | | 850+ | (1500) | c. 2600 | ? |
| 1957 | c. 700 | | 800+ | (1200) | 2350+ | ? |
| 1958 | c. 530 | | 650+ | (1100) | 2500+ (?3000) | ? |
| 1959 | c. 650 | (700) | 1050+ | | 2500+ | (b) c. 220 on 3 May |
| 1960 | 500+ | | 950+ | | 2500+ | (b) 215+ on 1 May |

NOTE.—Under Manukau, figures in brackets give a maximum count, which may represent either a short-lived peak, or perhaps for Karaka a temporary merging or partial merging of the two main Manukau flocks.

With the Kaipara figures, dates are added because of their significance. Thus 30 Wrybills in early September would be only the remnant of a much bigger wintering flock, most of which had already left for the South Island.

The locality where it has been possible to study the wintering flock of Wrybills most closely year by year is the expanse of tidal flats which lie between Mangere, Ihumatao and Puketutu Island in Manukau.* One of the most interesting and perhaps puzzling aspects of

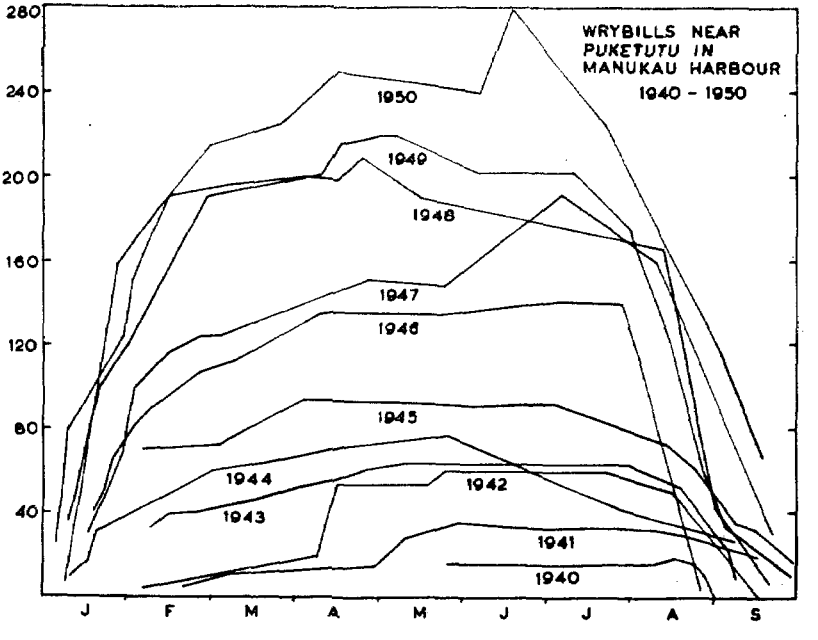
* Now submerged beneath the oxidation ponds of the A.M.D.B.

this study has been the remarkable increase in the number of wintering Wrybills between 1940 when regular observations began (11-12) and 1954 when the size of the wintering flock tended to level out and become stabilised at about 600 birds.

Various suggestions have been put forward to account for this spectacular increase, which is confirmed by figures from Karaka and perhaps also from the Firth of Thames. The first suggestion is that the Wrybill population by 1940 had sunk very low and that since then conditions have become much more favourable, so that the figures represent the natural annual increase of an essentially virile species which had been through a lean period of decline. Possible reasons for such a decline were the growth of alien weeds and the spread of introduced predators, such as stoats and Australian Magpies, on the Canterbury riverbeds where the Wrybills breed, and the indiscriminate shooting of shorebirds.

It has also been suggested that the total Wrybill population had not actually declined, but that up to 1940 the tidal flats around Puketutu were popular with shooters whose continual harassing of the godwits when they were in good condition and in their greatest numbers locally, coincided with the return of the Wrybills from the South Island, and drove them to remoter haunts where they were less likely to be disturbed by urbanised 'sportsmen.' If this is so, the figures therefore simply indicate that the Wrybills were returning to a favoured area from which they had been driven before the shooting of shorebirds was prohibited by law. In short the protection of the Bar-tailed Godwit directly benefited the Wrybill.

A third suggestion is that conditions in Manukau have become



more favourable for the wintering of Wrybills and that the increase here implies a draw-off from some other wintering-place or places. In the large shallow harbours of the north, tidal currents and gales are continually building, reshaping and re-siting sandbanks and shellbanks. Possible high-tide roosts appear and disappear. Some, for instance, are left high and dry and become choked with weeds. In 1940 and for some years afterwards there were near Puketutu three clean shellbanks which only the highest tides covered, and the Wrybills were rarely forced to leave this corner of Manukau to seek a roosting-place elsewhere. It is likely also that Manukau is a much richer feeding ground than it was before a great city was established around its upper shores. Much is heard about the 'pollution' of Manukau from sewage and the waste of meat-works and tanneries. But judged by the tens of thousands of birds of several species which feed and forage on the mudflats of upper Manukau (14, especially Annual Locality Reports), this waste has richly fertilised the mud-flats and stimulated the organic life of the shallow waters. Although there has been no direct pollution of the Puketutu mudflats, it may be significant that sandbanks in mid-harbour which once appeared bare at low tide, are now seen to be vividly green with plant life (algae sp.) when exposed. If plants some miles downstream from the source of pollution have been thus stimulated, it is reasonable to suppose that the small animals of the mudflats upon which the Wrybills feed have also increased and multiplied. It remains to be seen how the local flock of wintering Wrybills responds to the radical changes which are being brought about as the Manukau Sewage Scheme nears completion. It is understood that some two square miles, over which the Wrybills have been accustomed to disperse for feeding, will soon be submerged under four feet of water.*

At Karaka, on the southern shore of Manukau, there has been an even more spectacular increase in the numbers of Wrybills counted, since Mr. D. A. Urquhart first found a few at the muddy estuary of the Whangamaire Creek in 1946 (12). During four successive winters the numbers were fairly stable at about 60-70; then in 1950 they suddenly leapt up to about 200; and now in 1960 about a thousand may be expected. On 8/7/56 when a winter census of shorebirds in Manukau was taken by Auckland bird-watchers, a flock of at least 1500 Wrybills, which was counted here, probably included the flock from Puketutu, where none could be found. Flocks of a thousand or more Wrybills at Karaka are not now regarded with surprise.

Since 1955 the number of Wrybills wintering annually in Manukau in the two known flocks, which usually keep separate, has been not less than 1350 and may have reached 1700. On the other side of the narrow Auckland isthmus small flocks of Wrybills are sometimes reported from the estuaries of the Tamaki, Turanga (Whitford) and Wairoa (Clevedon); but, because of a lack of clean banks suitable as permanent high-tide roosts, these Wrybills appear to be only passing migrants or temporary visitors from Manukau.

After nearly half a century of ornithological neglect it was Buller's mention of "thousands" which led the search for the Wrybill to the southern shore of the Firth of Thames. Since the visit of Captain Mair, great changes have taken place. Saltmarshes have been

* This has now happened. The Wrybills have moved elsewhere.

reclaimed, sea-walls have been pushed out, and the water-level of the Hauraki Plains has been controlled by a network of embankments and wide drains. Fortunately the falling tide still exposes many square miles of rich ooze between Kaiaua on the west and Thames on the east. These tidal flats without a doubt are the main winter-quarters of the Wrybill. In my second exploratory trip to the Firth of Thames coast near Miranda, I was joined on 3/8/41 by Mr. H. R. McKenzie, without whose assistance over the years this study would have lacked many important details. In view of the supposed rarity of the Wrybill at that time, we were astonished to locate a flock of about a thousand birds, although we did not know the likeliest places where to look and by that date some Wrybills should have left for their breeding grounds. Experience has shown that during average tides Wrybills gather at several roosts in the Firth of Thames, near creek-mouths at Parawai, Piako, Waitakaruru, Kairito, and Miranda; and only at the biggest tides do the various flocks unite. During some censuses watchers have been posted at all these gathering places. Even so small groups of Wrybills can easily escape notice, so that the figures given are, if anything, conservative. Only once in the 1940's, namely in 1948, was a flock of more than 2000 Wrybills encountered;but since 1954 the average winter count has been about 2500. In the Firth of Thames as in Manukau there appears to have been an increase since 1940; possibly as much as a doubling of the number of Wrybills wintering. It is satisfactory to know that Captain Mair's 'thousands' was not an exaggeration; and that sixty-five years later the painstaking ornithologist has a fair chance of seeing together along the same shore more than 2000 of what must be considered one of the world's rarer waders.

So vast is Kaipara Harbour and so extensive its sands that the Wrybills which winter there are never faced with the problem of where to go at the big spring tides and it is doubtful if they ever form a single flock as they sometimes appear to do elsewhere. In recent years, though ornithologists have been visiting Kaipara more often at critical seasons, the largest flock of Wrybills so far found there contained about 220 birds. This was near Tapora in mid-Kaipara, which appears to be a regular winter haunt (13). Wrybills are also known from the long west coast beaches to the south and north of Kaipara Heads, whence a flock of more than 200 has once been reported (11). Mr. A. T. Pycroft has recently informed me that the locality where he found the Wrybills which he reported to Buller sixty years ago, was Shelly Beach. Godwits from this area are sometimes forced by big tides to roost near Wainui Inlet on the sands below South Kaipara Heads where Muriwai Beach swings eastward in a great curve; and Wrybills from the southern (Helensville) arm of Kaipara are likely to follow the same route. In the light of present knowledge therefore, the winter population of Wrybills for Kaipara cannot be assessed at more than 500. It might be expected that the numbers would be comparable with those of the First of Thames and Manukau. However, I am inclined to think that there are two main groups of rather more than 200 birds each, based somewhat loosely on Tapora in mid-Kaipara and on South Kaipara Heads.

North of Kaipara Harbour small numbers of Wrybills have been recorded from several estuaries and harbours, such as Ruakaka, Whangarei (up to 12), Doubtless Bay, Rangaunu Bay (c. 70 on

22/8/53), Houhora (8 on 3/2/55), and it appears that some regularly travel as far north as Parengarenga to pass the winter. Here on 5/4/53 a group of Auckland naturalists discovered about 80. It seems not unreasonable therefore to assume that the winter population of the far north beyond Kaipara may be about 100.

To the south of the main area, it is doubtful if the number of wintering Wrybills exceeds 100; and they may well be fewer than 50. Though Buller (5) mentions the Bay of Plenty in an early list of northern localities where Wrybills were 'tolerably common,' observers in the last two decades have been able to report only stragglers or very small flocks from the many estuaries and beaches which they have visited. As it is, the biggest flock for the Bay of Plenty, containing a mere eight birds, was found on 30/3/58 by H. R. McKenzie at Tairua, on the east coast of the Coromandel Peninsula. It is perhaps surprising that neither Ohiwa nor Tauranga, which are frequented by big flocks of other waders, has yet disclosed Wrybills in quantity. However, since Tauranga Harbour is large and some parts are still rather inaccessible, a hightide roost on Matakana Island could easily escape notice.

On the south-west coast of the Auckland province the harbours of Raglan, Kawhia and Aotea appear to be only casual halting-places, unsuitable for permanent wintering. In the Wellington province Wrybills regularly appear on passage in spring and autumn, but only in small numbers. A few could pass the winter at such estuaries as those of the Manawatu and Rangitikei.

From this study of the Wrybill in the North Island in winter, it is now possible to make the following assessment of the population between 1956 and 1960 when counts in the main areas seem to show that the population has been fairly stable.

| | |
|---|---|
| North of Kaipara (Whangarei-Parengarenga) | 100 - 100 |
| Kaipara Harbour | 400 - 500 |
| Manukau Harbour | 1500 - 1700 |
| Firth of Thames | 2500 - 2600 |
| Bay of Plenty, Raglan, Wellington Coast, Hawke's Bay, etc. | 50 - 100 |
| | 4550 - 5000* |

If this estimate is incorrect, the most likely upset would come from the discovery of a sizable wintering flock in Tauranga Harbour.

This study, therefore, shows that the population of this unique New Zealand bird is rather more than 4000 and may indeed be about 5000. I am inclined to believe that the figures for Manukau reflect a steady increase in the population after a serious decline; although, even when the numbers were at their lowest, the Wrybill was much more numerous than was suspected, because the Firth of Thames was not known. One important fact of which we can be certain is that over the last twenty years breeding conditions on the Canterbury riverbeds must have been favourable. Losses in winter-quarters, too, have been small. Very few obviously sick or ailing birds have been seen; and of the few that have been found dead, the majority have died prematurely by striking telephone wires or electric power cables.

* Further counts made in 1961 and 1962 indicate that the figure of 5000 is the more accurate.

ACKNOWLEDGEMENTS

The counting of Wrybills over twenty years has been possible only through the co-operation of many willing helpers, who have provided transport or braved the wintry mud to reach keypoints at a significant season. More than one census has been taken on a mid-winter's day. I am especially grateful to Messrs. H. R. McKenzie, D. A. Urquhart, P. C. Bull, J. C. Davenport, B. D. Heather, F. M. Brookfield; Miss N. Macdonald; Mr. and Mrs. J. Prickett.

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# BIRDS OF THE MERCURY ISLANDS GROUP

*By P. D. G. SKEGG*

The Mercury and Ohena Islands were visited from 27th August until 7th September, 1962. The intention was to study some of the islands not visited by a similar expedition twelve months earlier, and to spend a night on others previously visited only by day. The party was once again led by B. D. Bell (Senior Field Officer, Department of Internal Affairs), and included A. Blackburn, R. B. Sibson, I. A. E. Atkinson (Botanist, D.S.I.R.), J. L. Kendrick, J. F. O'Brien (Wildlife Branch), Miss Lois J. Bishop, Miss Joan Robb (Zoologist, University of Auckland), and C. G. Cathie, M. J. Hogg, N. J. Ledgard, R. H. Sibson, P. D. G. Skegg of the King's College Bird Club. Eleven of the party were members of the O.S.N.Z.

In late November, 1962, C. A. Dickie and P.D.G.S. spent four days at the islands.

Strictly speaking, all the islands listed below comprise the one group, but for the sake of convenience they have here been divided into two sub-groups. The Mercury sub-group is taken to comprise Great Mercury (Ahuahu), Red Mercury (Whakahau), Kawhitihu (Atiu I., Stanley I.), Double Island (Ngaumangamanga, Fisherman's I.), Korapuki (Rabbit I.), Middle Island (Flax I.), and Green Island. The Ohena sub-group, to the south, includes the islands of Ohena (Ohinau), Little Ohena, and Koruenga (The Maori Woman) and the rocks or stacks of Black Rocks, Flat Island, Old Man Rock, and Needle Island (The Hole in the Wall).

On 27/8/62 we left Hobson Wharf, Auckland, in R.N.Z.A.F. "Arataki" and proceeded direct to Great Mercury. We arrived at our

campsite at Peach Grove, on the south coast of Great Mercury, at 4.30 p.m. Landing on the sandy beach was a simple matter and we just had time to find a suitable campsite and pitch tents before dark.

The next morning we re-embarked on the "Arataki" and went south to the Ohenas. It was intended that half the party would visit the comparatively unmodified Little Ohena but, the seas being as they were, a landing was not possible, and all the party spent the night on Ohena. An easy landing was made at the northern end of the island where there is a boulder beach and a patch of sand. A Leopard Seal *(Hydrurga leptonyx)* on the beach was a source of much interest, particularly to the photographers. Its faeces contained remains of Little Blue Penguins and primaries of shag and/or shearwater.

We confined our attention to the northern half of the island, the southern half having been covered by I.A.E.A. on 27/7/61. A night spent under the stars, below the old Maori wall and near the remains of the old Fishing Shack was rather chilly.

The next morning we were taken off Ohena, and for the night of 29th-30th the party was divided, some visiting Red Mercury, others Double Island. The Red Mercury party used the 1961 campsite at South Landing, and cleared the track to Roly-poly Bay, where banding operations were carried out. The Double Island party landed on the boulder bank and set up camp in the scrub at the eastern end of the western islet. During the night it rained heavily.

C.G.C. performed something of a feat when he caught with a boat hook a Giant Petrel which came alongside Jim Butterworth's fishing boat. It was duly put in a sack and transported on the "Arataki" back to Great Mercury for banding and photographing. The "Arataki" left us that afternoon.

On 31st August a party left for Middle Island. A landing made at the southern end of the eastern side of the island proved both rocky and difficult. As no handy campsite was to be found, the party slept on the beach. The island was covered fairly thoroughly and banding took place on the eastern slopes that night. The journey back to Great Mercury in rough seas was not without incident.

Rough weather for the next three days restricted operations to Great Mercury, where the southern two-thirds of the island were well explored. Shag banding by torchlight met with little success.

The seas had calmed sufficiently by 4th September to enable parties to spend a night on Green Island and Korapuki. On Green Island a difficult landing was made near the westernmost point. Tents were pitched at the base of the southern talus slope. The island is riddled with Diving Petrel burrows, and the supply of 200 bands was exhausted in a little over an hour. The Korapuki party landed in the centre of the south-eastern side of the island and this proved almost as good a landing as the north-western boulder beach used in 1961. Camp was made among flax and pohutukawas on the ridge up a steep cliff from the landing.

By the 5th the sea had roughened again but both parties got back to Great Mercury, though the last boatload took rather a long time when, after one of the rowlocks had earlier been lost overboard, the outboard motor died in open seas.

The "Hauraki" arrived on the 6th and in the late afternoon

we embarked and sheltered for the night in Kennedy Bay on the opposite mainland. Anchors were up at 4 a.m. next morning and we reached Auckland at 11 a.m..

The short two-man visit in November, 1962, was made possible by Mr. J. Butterworth, a crayfisherman of Whitianga. In his boat "Shoal," we left Whitianga on 25th November and en route for Red Mercury landed on Needle Island and Ohena. Seas again prevented our landing on Little Ohena, where both Tuataras and White-faced Storm Petrels are said to be found.

A most profitable night was spent on Red Mercury, where Pycroft's Petrels were discovered breeding, but a wind change made it necessary to leave early the next morning. Some hours were spent on Kawhitihu on the 26th and late that afternoon a landing was attempted on Middle Island. After swamping the dinghy in the heavy surf, we decided that discretion was the better part of valour. We left again almost immediately.

Having sheltered for the night in Coralie Bay, we went ashore at first light the next morning. The day was spent exploring the northern one-third of Great Mercury, the only part of the island we had not covered in August-September. That night we enjoyed the warm hospitality of the Delamore home. We returned to Whitianga next day crewing a yacht that had not been able to leave Huruhi Harbour because of the seas.

## DESCRIPTIONS OF ISLANDS

Descriptions of Red Mercury, Double Island, Kawhitihu and Korapuki are to be found in the report of the 1961 expedition (Edgar 1962).

A lengthy description of Great Mercury, which differs in most respects from the rest of the Group, was published some years ago (Cochrane 1957) and use of it has been made here.

Great Mercury extends for a little over four miles north and south and varies in width from under a quarter of a mile to over one and a quarter miles. It is 4300 acres in extent, being almost ten times the size of the next largest island of the group. The island comprises a northern one-third of rolling to steep pasture-covered hills, and a higher and more broken southern two-thirds, which rises to a height of 810ft. above the White Cliffs. The two sections are joined by a narrow short tract of low sand dunes and consolidated sand, hereinafter referred to as the Flats.

The Flats are built of deposits from opposing wave action and have been drained, ploughed and sown to form good exotic pastures of ryegrass, white clover, paspalum and Yorkshire Fog, which have a very high carrying capacity. It is on The Flats and on the northern area of the island, which is largely a mixture of danthonia and browntop pasture, that most of the farming activity of the island is concentrated. The large southern area, with a 2000 acre poor clay basin, is largely covered with stunted Kanuka scrubland, beneath which no regenerating forest species could be found. This area is periodically burnt off, but the only pasture in this southern area is around a narrow coastal strip. Only very small stands of coastal scrub and forest remain on some inaccessible cliff faces and steep gullies. Gorse is a large problem, especially in the north, but some hundreds of goats help control it.

The island has a colourful history which entails Maori settlement and feuds, early pioneering, smuggling, whaling, gumdigging and shipwrecks (Buchanan 1937). It has been farmed since 1857, and is at present occupied by the Mizen and Delamore families. The two homesteads, one of which is 95 years old, are situated by the entrance to Huruhi Harbour.

In August-September we camped on a beautiful site at Peach Grove and found it infinitely superior to the Sheep Bay campsite we had used twelve months earlier.

Situated less than a mile south-east of Great Mercury is the smallest island of the Mercury sub-group, Green Island. It is about six acres in extent, built of steep andesite, and is of NE-SW orientation, c. 300 yards long and varies in width from 80 to 110 yards. It rises steeply from the sea to a long narrow crestal ridge of 105-170 feet above sea level. At the southern end is a talus slope leading down to a boulder bank, apparently formed by opposing wave action. Adjoining the northern end of the island is a large and almost perpendicular-walled islet. There are various rocks off the southern and western ends of the island.

It seems likely Green Island has long been left undisturbed. The seaward slopes are predominantly karo over taupata, with extensive areas of ice plant in the more rocky places, which include two-thirds of the northern slope. There are also stands of taupata and ngaio-karo forest. On the ridge karo-taupata scrub is the most widespread type, but mahoe and *Coprosma macrocarpa* are also present.

A landing can be made in the lee of the three rocks near the western corner of the island, and is easiest at high tide. Small tents can be pitched at the base of the talus slope. There is no fresh water. Tuataras are numerous.

Situated between Green Island and Kawhitihu is the twenty-acre Middle Island. Of andesite, it is over six hundred yards long and is up to two hundred yards wide at places. The southern and western slopes are formed by vertical cliffs 200 feet high. The eastern side is a very steep soil-mantled slope rising to the edge of two small plateaux, the northernmost being connected to the central plateau by a narrow saddle.

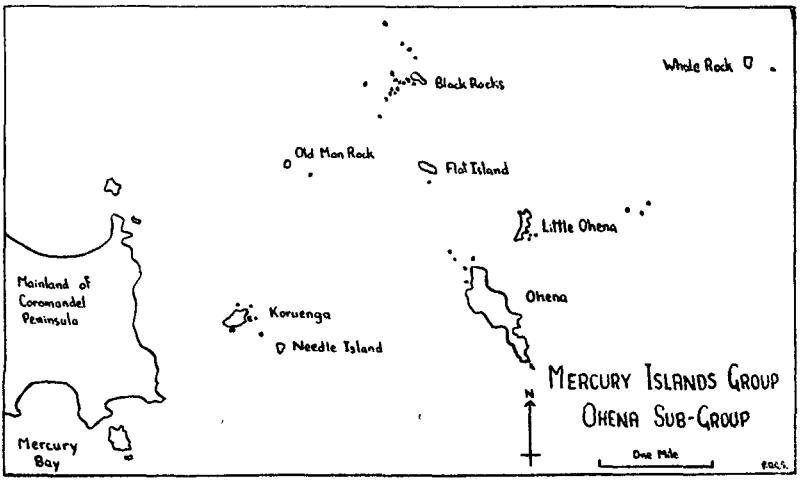
The southern end of the island comprises a narrow ridge which at its extreme end swings sharply eastward, and is surrounded by precipitous cliffs.

The vegetation of the island appears almost virgin, and although charcoal was found at a depth of 6-8 inches in a soil profile on the central plateau, there is absolutely no evidence that extensive fires occurred. The western seaward slope is predominantly taupata-*hymenanthera* scrub, the eastern seaward slope karo over taupata scrub, and the southern ridge karo over *hymenanthera* and mahoe forest. The upper slopes fringeing the plateau are wharangi-mahoe forest. The large-leaved milk tree *(Paratrophis banksii)* is dominant on the plateaux, and the fine stand of this species on the northern (summit) plateau is apparently unique. Karaka is of local importance on the northern plateau. The cliffs are largely without vegetation.

The best landing is on the boulder beach at the southern end of the eastern side of the island. There is no handy campsite, and our party slept on the beach. In early September there was a small seepage just north of the landing. On this island, too, Tuataras are plentiful. Kioris were not found on either Green or Middle Islands.

About six miles south-south-east of Great Mercury, and three miles east of the mainland of the Coromandel Peninsula, is Ohena. Just over a mile in length, it is up to 650 yards wide. It has a total acreage of 52. The island is largely of andesitic rocks, the central western cliffs being precipitous vertical columns of finely banded sandstones which rise 300 feet from deep water. The island is divisible into a higher northern section, up to 305 feet a.s.l. for the most part, bordered by greyish and pinkish white rhyolite lavas and breccias which give way to the lower cliffs of the narrow southern section, at the end of which is a navigational light.

The vegetation of the island is completely secondary. Although probably first cleared by the Maoris, who had extensive kumara plantations on the island, little of the present plant cover could possibly be more than a century old. The northern amphitheatre-shaped slope is dominantly mahoe. The upper slopes of the northern section of the island are largely manuka over mahoe scrub, with mapou of local importance. In one area on the mid slopes of the island tauhinu, *Scirpus,* and prostrate manuka form a low, shrubland. The upper slopes of the low southern section of the island are largely dense flaxland, with pohutukawas emergent in places. The seaward slopes are largely pohutukawa scrub, though on a small islet apparently not frequented by rabbits karo-houpara predominate. Pohutukawa and ice plant make up most of the cliff plant communities. Grazing by rabbits *(O. cuniculus),* which were introduced in the nineteenth century, prevents the regeneration of many plants, including probably karo, taupata and wharangi. Kiores *(R. exulans)* also were present.



The pebbly beach, with some areas of sand, at the northern end of the island offers an easy landing at any tide. It is possible to pitch tents near the remains of the old Fishing Shack, only part of the framework of which still stands. We found no supply of fresh water.

Little Ohena is situated about 600 yards north-east of the northern-most point of Ohena. Of north-south orientation, it is largely surrounded by cliffs and rises to a height of 160 feet. It has an area of 3 acres, being very approximately 600 yards long by 100 yards wide. The plant cover appears relatively undisturbed. Landing is difficult. A likely place has been noted near the centre of the western coast, but a swell prevented our landing.

Flat Island is a low rock, highest point only 20 feet, about one mile north-north-west of Ohena. It has only one small patch of vegetation. Black Rocks, three quarters of a mile north of Flat Island, is a rocky islet in two parts, with a surprisingly good cover of vegetation and rising to 80 feet above sea level. Old Man Rock is the site of a battery-operated navigational light and is situated a little under two miles north-west of Ohena. It is 210 feet high, with near perpendicular sides and a sparse cover of vegetation.

Koruenga, like Needle Island, is not always considered one of the Mercuries. Only one mile east of the Coromandel coast, it is approximatley a quarter of a mile long, 175 feet high, and supports a good plant cover. Landing appears simple. The 255 feet high Needle Island, less than half a mile south-east of Koruenga, has never been climbed. It is of steep, crumbly, much-eroded rock, with vegetation growing only on the small ledges. Landing is difficult except in calm seas.

## THE BIRDS

Until 1961 the Mercury Group had received much less attention from the ornithological standpoint than most of the offshore islands of Northern New Zealand. They were visited by R. A. Falla and B. Sladden in the 1920's and again by R.A.F. and B.S. with Logan C. Bell in 1951, but on neither occasion was a full report published. In August-September, 1961, a party visited the group and investigated five of the islands. A full report was published (Edgar 1962).

The Species Notes are based on the records of two 1962 expeditions supplemented by records of the earlier trips and the information given me by the Mizen and Delamore families.

Our banding record in 1962 was as follows:

| | |
|---|---|
| Diving Petrel | 600 |
| Grey-faced Petrel | 290 |
| Fluttering Shearwater | 59 |
| Allied Shearwater | 11 |
| Pycroft's Petrel | 10 |
| Pied Shag | 2 |
| Giant Petrel | 1 |
| | 973 |

All the islands, but for Great Mercury, have much the same tubenoses breeding, but with significant differences in numbers.

RELATIVE ABUNDANCE OF PETRELS IN AUGUST-SEPTEMBER

| | Red M. | Double | Kawhiti | Middle | Green | Korapuki | Ohena | Gt. Merc. |
|---|---|---|---|---|---|---|---|---|
| Grey-faced Petrel .... | 1 | 1 | 1 | 4 | 3 | 1 | 1 | 1 |
| Fluttering Shearwater .... | 2= | 2= | _ | 3 | 2 | 3 | 3 | _ |
| Allied Shearwater .... | 2= | 2= | _ | 2 | (4) | 4 | (4) | _ |
| Diving Petrel .... | ? | _ | 2- | 1 | 1 | 2 | 2 | _ |

N.B.— (i) Brackets = heard only.
(ii) Some species, such as Fleshy-footed Shearwaters, were not coming ashore at the time of our visits.
(iii) At least a night has been spent on every island except Kawhitihu.

BUSH BIRDS ON SMALLER ISLANDS

| | Green I. 6 acres | Middle I. 20 acres | Korapuki 24 acres | Ohena 52 acres |
|---|---|---|---|---|
| R.-F. Parakeet | 3 pairs | 50+ pairs | 25 pairs | 35-40 pairs |
| Fantail | 6 pairs | 50+ pairs | 25 pairs | 20-25 pairs |
| Warbler | 10-12 pairs | 30-40 pairs | 15 pairs | 20-25 pairs |
| Bellbird | 3 pairs | 12 pairs | 5 pairs | 20 pairs |
| Silvereye | 10 pairs | 12 pairs | 12-15 pairs | 15-25 pairs |
| Thrush | _ | _ | 2 pairs | _ |
| Blackbird | 1 | 20+ pairs | 5 pairs | 5-10 pairs |
| Dunnock | 1 | 6+ pairs | 1 | 10-15 pairs |
| Chaffinch | 4 pairs | 2 | 1 | 7 |

N.B.— (i) Numbers of pairs are only approximate. Where figures only are given this is the number seen and no estimate has been made of the number of pairs (if any) present.
(ii) Green I. and Middle I. have been undisturbed for a very extensive length of time, whereas the vegetation of Korapuki and Ohena was much modified last century and earlier.

NORTHERN BLUE PENGUIN — Nesting on all the islands of the Mercury sub-group, and also Ohena. In largest numbers on Korapuki and Red Mercury. Two occupied burrows on Red Mercury were just below on inland ridge at c. 300 feet a.s.l. A number of burrows examined on 1/9/62 on Great Mercury contained two fresh eggs each. A chick examined on Red Mercury on 25/11/62 had lost almost all its down.

GIANT PETREL — Odd birds seen in these waters every day in August-September. One caught and banded on 30/8/62 was seen again on 6/9/62. None seen in November.

FLESH-FOOTED SHEARWATER — Falla (1934) recorded them as breeding in the group. Burrows in cliff-top situations, unoccupied in August-September, on Red Mercury, Double Island and Kawhitihu

may well prove to be of this species. Falla (1935) shows a photograph of a Tuatara sharing a burrow with a Fleshy-footed Shearwater at the Mercury Islands. As Tuataras are present in numbers only on Middle Island, Green Island and Little Ohena, it therefore seems likely Flesh-footed Shearwaters breed on at least one of these.

Ohena is apparently a stronghold of this species. Four dried specimens were found in August. Two counts of burrows in 100 square yards were made, and in neither area were more than 2 burrows occupied by Grey-faced Petrels. One area in a flat situation above the north-east cliffs had 38 burrows, and another area on a steeper slope behind the Northern Landing gave 32 burrows.

Although they were again present in New Zealand waters by the time of our August-September visit, none was coming ashore. On 25/11/62 upwards of thirty burrows were examined (by day) on Ohena, and all were empty. Many appeared to have been cleaned out, fresh droppings and feathers being much in evidence. It seems that the birds were coming ashore in numbers at night by this date.

The local Maoris still take this petrel each March as a "mutton-bird" in this group.

One fresh corpse on White Beach, Great Mercury, on 27/11/62.

SOOTY SHEARWATER — One fresh corpse on White Beach, Great Mercury, on 27/11/62.

FLUTTERING SHEARWATER — Coming ashore in numbers by the end of August. Kawhitihu, the only island of the Mercury sub-group on which we have not spent a night, is the only island in which we have not found Fluttering Shearwaters breeding (except Great Mercury). They were most common on Korapuki and on Green Island, where 22 were caught and banded by two boys in an evening. In a typical five minutes about midnight 14 were heard coming ashore on one side of this small island. Present on Ohena.

Burrows were found in varying sites, but the most favoured sites appear to be near the shore, often among ice plant or sometimes taupata and flax. On a number of occasions in late August or early September we found pairs of birds crooning under large boulders on the beach.

No birds were seen at sea among the islands of the group in August-September, but in November many hundreds were seen, particularly off the south and east coast of Great Mercury.

On Korapuki on 4/9/62 a female was found in a burrow by day incubating a fresh egg. This is the earliest laying date yet recorded.

ALLIED SHEARWATER — Recorded coming ashore on Red Mercury, Double Island, Green Island and (in largest numbers) Middle Island. They may well be present on Kawhitihu, the only island of the Mercury sub-group on which we have not spent a night. Calls, thought to be of this species, were heard on Ohena.

GREY-FACED PETREL — The Mercuries are a stronghold of this species, largest numbers being found on Double Island, Red Mercury, Korapuki and Kawhitihu. Breeding in much smaller numbers on Green Island and Middle Island. No positive indication of breeding on Great Mercury. An 1859 map (Buchanan 1937) shows mutton-bird sites above the White Cliffs, and they continued to breed here

until recent years. We found burrows and an old Grey-faced Petrel skull on Taramoko, a headland on the south coast of Great Mercury, but they were not breeding here in 1962. Michael Delamore has found them breeding on the Little Sister, a rock off Huruhi Harbour. Present in small numbers on Ohena.

By early September most birds had young chicks or eggs very near hatching. By the last week of November on most of the chicks we examined the feathers on the wings were beginning to show through the light grey down. Of 34 birds caught in less than half an hour on the Rolypoly Bay slope of Red Mercury on 29/8/62, no fewer than 8 were birds banded at the same place twelve months earlier. A count of burrows in 100 square yards of the Rolypoly Bay slope totalled 41.

One bird examined had white patches on its wings, a number pink blotches on their feet (this being the result of a growth on the webs of a number of petrels, which when it peels off leaves these blotches). Another bird had a large tumour on the outer toe of the right foot.

Some "muttonbirding" takes place in November on Red Mercury, Kawhitihu and Korapuki. According to Mr. J. Butterworth, numbers taken probably nexer exceed 500. Grey-faced Petrel bones were found in an old Maori midden on Green Island.

MOTTLED PETREL — Only record from the group is a specimen picked up dead on the beach at Red Mercury in the 1920's (Falla. 1934).

PYCROFT'S PETREL — Discovered breeding in surprising numbers — certainly some hundreds of pairs — on Red Mercury, the only island on which night work has been done in summer. On 25/11/62 10 were banded in a very short time and at least another 10 seen, on the Rolypoly Bay slope. They were also heard calling as they flew up the valley behind the South Landing.

WHITE-FACED STORM PETREL — Recorded breeding on the Mercury Islands in 1926 (Falla 1934), apparently on Little Ohena. We found no evidence of their breeding on any island visited, including Green Island, which we thought might be suitable. Bones found in a Black-backed Gull's nest on Double Island were identified as a White-faced Storm Petrel's. In 1962 none were seen at sea in the vicinity of the islands.

DIVING PETREL — Breeding in very large numbers all over Green Island and Middle Island, and in smaller numbers mostly in cliff sites on Kawhitihu, Korapuki, and Ohena. Burrows in concentrations wherever there is sufficient soil on Needle Islnad.

Remains were found in a Black-backed Gull's nest on Double Island, and two birds were seen on the ground on Red Mercury in 1961, but no evidence of breeding on either island as yet.

On Green Island two counts of burrows were made. One area of 100 square yards on the southern talus slope, under tallish taupata and karo, contained 76 burrows, 70+ of which belonged to Diving Petrels. Another area of 100 square yards on an open slope at the north-eastern corner of the island, amongst iceplant and taupata (6 - 18ins. high) contained 185 Diving Petrel burrows. Some areas would have more than 200 burrows to a 10 yards x 10 yards

sector. If, allowing for rocky areas, an average of 50 burrows to 100 square yards is taken this gives approximately 2500 pairs to an acre, or about 15,000 pairs on this six-acre island.

A count on an eastern slope of Middle Island gave 47 burrows in 100 square yards.

Diving Petrels sometimes occupy the much larger burrows of Grey-faced Petrels. By the beginning of September most birds are incubating a single fresh egg. A crooning "porr" makes a wall of sound at this season from soon after dusk until about 5.45 a.m. Even at this stage of nesting, after at least the bulk of the birds have laid, birds were noted "necking" and copulating outside their burrows. In late November the chicks were alone in their burrows by day. They were covered with a light grey down, with feathering beginning to show through on the head and wings. Diving Petrels fly in straight and almost bullet-like to land heavily by their burrows. Many immediately put their heads under their wings. They are considerably more nimble than the larger petrels on the ground.

GANNET — Quite clearly no large colony in the Mercuries. We saw small strings and single birds among the islands every day.

According to Fleming and Wodzicki (1952) there are uncomfirmed reports of breeding between 1935-38 from the Sisters, two small stacks off Huruhi Harbour. There was some evidence of roosting in the 1940's. According to the Delamores up to 14 now roost on the Sisters.

Mr. Peter Densen recorded a single pair of Gannets breeding on Never Fail, a small rock just north-east of Great Mercury, in 1960-61 and 1961-62 season. They were definitely not present in the 1959-60 season (Stein 1962). On 27/11/62 we examined the rock from Arimiwhai, Great Mercury, and no Gannets could be seen on the side of the rock visible to us.

A roost was discovered on a small stack off the southern extremity of Korapuki. At dusk on 4/9/62, 3 were sitting on it and 6 more were circling around. Droppings led us to believe it was in regular use.

BLACK SHAG — Only noted as an occasional visitor in November.

PIED SHAG — There was a thriving colony, at least 30 years old, at Peach Grove. In 1962 there were 40 breeding pairs. Small colonies persist on Red Mercury and Kawhitihu. The Delamores told me of a colony of c. 14 pairs on Number Two Beach, near the northern end of the west coast of Great Mercury.

Roosts were found on the south-west cliffs of Red Mercury (4 birds); a stack off Middle Island (19 birds); rocks offshore Green Island (c. 20 birds); in pohutukawas overhanging 100 feet high cliffs between Peach Grove and Sheep Bay, Great Mercury (c. 20 birds); on rocks by Taramoko, west of Peach Grove (4 birds); at an old nesting colony at Fly Point; at entrance to Huruhi Harbour (6 birds); by the fish wall in Huruhi Harbour (8 birds); Black Rocks (5 birds); islets off the northern end of Ohena (c. 18 birds); and west coast of Little Ohena (6 birds).

Breeding at Peach Grove in early September was at all stages from well grown and strongly flying young to fresh eggs. The material of which one nest was constructed included nearly 200

branches or twigs of pohutukawa, manuka and kanuka, with a lining of pohutukawa leaves, bracken, sedge and pohuehue.

Non-flying or weakly flying young were frequently noted to swim under water, using their wings and tail to assist progress. So, too, on occasions, were adults. Buller noted Pied Shags using wings and tail underwater when they were diving off Kawau Island, but Stead (1932) never observed this behaviour. When the young were disturbed from their roosting places at night they would submerge and nearly always swim to where our torchbeam met the water.

LITTLE SHAG — One or two birds were seen offshore among the Mercuries, but none were seen in the vicinity of the Ohenas. At Peach Grove, a pair of Little Pied Shags and two pairs of White-throated Shags were frequently to be seen sitting in the tops of the pohutukawas at the Pied Shag colony, but in early September they did not appear to be breeding. A pair of White-throated Shags was twice seen in a pohutukawa by Awhitu, Great Mercury.

REEF HERON — One or two pairs along the south coast of Great Mercury. Also seen at Coralie Bay.

WHITE-FACED HERON — Mr. P. Mizen informs me they are a recent arrival to Great Mercury. 3 or 4 were present in September, 1962, so they may well have bred. They walk around in the paddocks and sometimes perch in the top of tall cypresses (*C. macrocarpa*).

BITTERN — According to Mr. P. Mizen, a straggler visited Great Mercury about 1959, but was seen for only a few months. In 1962, Michael Delamore saw one in the old Maori eeling swamp at the northern end of the Flats.

GREY DUCK — Recorded by us at Peach Grove, Great Mercury, where 6 were seen on one occasion. Apparently present in Huruhi Harbour. The Delamores tell me there is an influx during the shooting season, a flock of 24 seen at this period many years ago being the largest number recorded.

HARRIER — Present on every island visited. They wander from island to islnad and were three times noted at sea between Middle Island and Great Mercury, and once between Middle Island and Kawhitihu. Only small numbers present on Great Mercury. The population on Great Mercury was once described as excessive and trapping was carried out for several years, 42 being trapped in a year.

BROWN QUAIL — In small numbers on Great Mercury. 3 seen in gumland scrub on slopes of Mohi Mt. on 3/9/62, near where J.L.K. saw 2 during a short visit in January 1961.

PUKEKO — According to Mr. P. Mizen, appeared some years ago, since when an explosion in the population has taken place. On 31/8/62 we saw 9+ in a reedy lake of two acres extent at the northern end of the Flats, and one on the edge of the scrub at the southern end. Mr. Mizen tells me there were up to 100 present in the upper reaches of Huruhi Harbour at this time. In late November there were pairs breeding in almost every gully in the northern area of the island with any reedy or swamp vegetation. Some birds were incubating egs (up to 10), some had chicks. They frequently feed on pasture.

NORTHERN OYSTERCATCHER — Heard calling between Sheep Bay and Peach Grove on 30/8/62. The Mizens and Delamores tell me 6 are sometimes to be seen on White Beach.

BANDED DOTTEREL — The Flats appear a favourite haunt — 1 pair on White Beach on 31/8/62, 4 pairs on this beach and the grassy area of the Flats on 27/11/62. They sometimes feed in Huruhi Harbour.

NEW ZEALAND DOTTEREL — The Mizens and Delamores had never seen them on Great Mercury before 1961. Five were counted on 31/8/62, 1 pair being at Coralie Bay, 1 pair and 1 single on White Beach. Two pairs, both very agitated, were seen in the pastureland of the Flats an 27/11/62.

ASIATIC WHIMBREL — One, probably a tired migrant just arrived, appeared at Peach Grove on 5/9/62, and was seen again on 6/9/62. Seemed reluctant to leave and used a variety of resting places, such as a ledge 15 feet up a cliff, the sandy beach, an offshore reef, a freshwater stream mouth under low pohutukawas, and jumbled rocks below a headland.

RED-BILLED GULL — Small numbers around all the islands by day. At Peach Grove, sometimes flew up the stream. In August-September evening flocks of e.g. 20, 20, 25+, were to be seen flying west along the southern shore of Great Mrecury, very probably to some roost. The same general movement was noted in November. There was definitely no nesting colony in the Mercuries in the 1962 season. At Peach Grove a number of them mobbed a Giant Petrel as it sat on the water after we had released it.

BLACK-BACKED GULL — Small numbers on all islands, with most on Flat Island (40+). The Mercury birds have a number of roosts including a rock by Green Island and (judging by birds flying around at dusk) the summit of the easternmost section of Double Island. Some of the Ohena birds were seen leaving for the mainland at dusk and returning next morning. In August-September old nests were found on the boulder banks of Double Island and Green Island. They were nesting at a number of localities around the coast of Great Mercury in late November. Bones found in a Double Island nest included Diving Petrel, White-faced Storm Petrel and Kiore.

WHITE-FRONTED TERN — As noted in 1961, very few present among the Mercuries in August-September. Two by Ohena on 28/8/62, and no more seen until 5 off Green Island on 5/9/62. On 6/9/62 c. 20 were seen west of Great Mercury, and they grew more and more common as we crossed to Kennedy Bay, on the opposite mainland. In late November they were in evidence. 150+ were sitting on Never Fail, a small rock north-east of Great Mercury, on 27/11/62. Whether they were breeding was not ascertained. There was much movement of Swallowtails, as they are locally called, towards this rock at dusk. In January, 1963, Michael Delamore found large numbers nesting on the rocks at the westernmost point of Green Island.

CASPIAN TERN — From time to time odd birds visit bays and fish the shallow waters round most of the islands. Not known to breed

anywhere in the group. The Delamores inform me that for many years two have always been present in Huruhi Harbour, but only rarely does a third one appear.

KAKA — Mrs. A. R. Delamore saw one near the homesteads on Great Mercury about 1960. It stayed only a short time.

RED-FRONTED PARAKEET — One of the commoner bush birds on all islands, with the exception of Great Mercury. Here we noted them only at Peach Grove and Sheep Bay. Prior to the summer of 1962-63, when there were several around the homesteads, Mrs. A. R. Delamore had only once seen them on Great Mercury. One was seen on Old Man Rock in July, 1961 (Atkinson 1962). They are perhaps the commonest land-birds on Middle Island and Korapuki.

Particular attention was paid to noting the food of these parakeets. On Double Island there were masses of leaves under a stand of tawapous. In all cases the leaves were cut off half to two-thirds way along the petiole. On Middle Island they were observed biting off *hymenanthera,* wharangi, and taupata leaves. They were also nibbling at the terminal shoots in the *Paratrophis* forest, but no defoliation was noted. On Korapuki they were picking the petals off manuka flowers. On both Green Island and Ohena, parakeets were seen chewing karo leaves. In the extensive flax areas on Ohena many sheaths of the flax buds were holed, and some completely stripped, before the flowers could develop. Bill marks led us to attribute this to parakeets.

SHINING CUCKOO — Heard in November on Red Mercury, Kawhitihu and Great Mercury.

MOREPORK — Present on Red Mercury, Double Island and Great Mercury.

KINGFISHER — Present in small numbers on all islands visited, with 1 or 2 pairs in most bays on Great Mercury.

SKYLARK — Plentiful on Great Mercury, particularly in good grassland. In early September some were singing but many were still in small flocks of e.g. 7, 10, 14, 17, 23. Skylarks are not normally present on the smaller islands, but they may visit them in search of suitable nesting country. On 4/9/62, two were seen passing from Green Island to Great Mercury, and 3 were seen passing from Korapuki to Great Mercury.

FANTAIL — Common on outer islands, and also on Great Mercury, where in early September they often appeared in groups of three. Frequently feeding over the seashore, probably getting insects from the rotting seaweed.

GREY WARBLER — Common on all islands visited, in particularly good numbers in the areas of scrub. On Great Mercury, it was singing wherever scrub was high enough. On Green Island, where it was the commonest passerine, one sang at 9 p.m. when a torch beam shone on it.

SONG THRUSH — Not present on any of the outer islands except Korapuki, where 3 were seen. On Great Mercury, we recorded them only by the homesteads and on the south coast — Awanui, Sheep Bay, Peach Grove — where they were present in very small numbers.

BLACKBIRD — Present on all islands visited. On Great Mercury it was in small numbers, and we recorded it at Peach Grove and near the homesteads.

DUNNOCK — This hardy coloniser was present and singing on all islands visited. It is one of the most common passerines on Great Mercury, thriving particularly in the scrubland.

PIPIT — Seen in small numbers on Great Mercury, where it was found in pastureland, around the cliff edges, and on the sandy beaches. The only other island on which it was recorded was Red Mercury, where one was seen at the South Landing.

BELLBIRD — One of the most common passerines, being in greater numbers than any other bush bird on Red Mercury, Double Island and Kawhitihu. On Great Mercury they were very scarce and we heard only one or two behind Peach Grove and none elsewhere. Mr. P. Mizen told me that one summer he counted 30 in a single pohutukawa behind Sheep Bay. They appear around the homesteads in the summer.

TUI — None seen in 1962. According to the Mizens and Delamores they are only occasional visitors.

SILVEREYE — Small parties on all islands visited and also Old Man Rock (Atkinson 1962). Largest flocks in early September were 15+ on Green Island and 25 on Great Mercury.

GREENFINCH — Present only on Great Mercury, where we saw a single bird at Peach Grove, and (in November) large numbers around the homesteads, where pines may be the attraction.

REDPOLL — Present on Great Mercury. Usually a few, maximum 6, about Peach Grove, where they often fed on the ground among the dunes of loose white sand. The only food identified was the seed of *Scirpus nodosus*. One tame pair, watched very closely on 6/9/62, showed strong mealy characters (v. *Notornis* X, 141).

GOLDFINCH — Only on Great Mercury, and rather scarce there. Up to 5 at Peach Grove, sometimes feeding an pohuehue. Elsewhere only odd pairs recorded.

CHAFFINCH — Has colonised all islands visited, and also Old Man Rock (Atkinson 1962). Song infrequent and incomplete. On Great Mercury a flock of 12+ on 31/8/62 was composed mostly of males.

YELLOWHAMMER — Recorded only on Great Mercury, where most were still in small flocks in early September. Very tame, especially when feeding in sunlit patches among scrub, and sometimes within a few feet of tents. Some tentative singing on 1/9/62.

HOUSE SPARROW — Present only on Great Mercury. Maximum of 4 at Peach Grove, but flock of 30+ seen over hill towards Taramoko on 5/9/62. Large numbers, probably in hundreds around the homesteads on 27/11/62.

STARLING — Evening flocks of 20-40 seen on or over all islands visited. They roost on Red Mercury, possibly on Double Island, and definitely on Middle Island (500+ in *Paratrophis* forest on 4-5/9/62). Much movement takes place between islands and it is not yet apparent how many birds breed here. Starlings were extremely common in pastureland on Great Mercury by day, but in comparatively small

numbers on the other islands. 20 pairs were nesting in the cliff at Fly Pt., by the homesteads on Great Mercury, in November. Starlings are the only land birds to frequent Needle Island and, according to Michael Delamore, the Sisters.

Our suspicion that here, as on the Alderman Islands to the south (Sladden and Falla, 1928), at least some come from the mainland to roost, was confirmed on 6/9/62. 6 were seen flying from the mainland to Great Mercury, shortly after 5 p.m.

MYNA — According to Mr. P. Mizen, a pair first appeared on Great Mercury in 1961. Presumably they bred, for five were present at the northern end of the Flats at the time of our visits. Michael Delamore informs me numbers had greatly increased by February, 1963.

## BIRDS RECORDED ON SEA TRIPS BETWEEN AUCKLAND AND MERCURY ISLANDS

NORTHERN BLUE PENGUIN — The only one seen was near Square Top Island on 27/8/62.

GIANT PETREL — Common. On 27/8/62 a total of 43 birds was logged; 19 between Wharves and North Head, 12 between North Head and Noises, 5 between Noises and Colville, and 7 between Colville and the Mercury Islands. On 7/9/62 the numbers were at first much smaller, only 12 being seen between Mercury Islands and North Head, but in the inner Waitemata west of North Head a record local tally of 37 was noted, the majority sitting on the water together.

CAPE PIGEON — On 7/9/62, 3 followed "Hauraki" across Gulf from near Cape Colville until opposite Waiheke Island.

FLESH-FOOTED SHEARWATER — Two on 27/8/62.

BULLER'S SHEARWATER — One on 7/9/62.

FLUTTERING SHEARWATER — Large numbers seen on both trips, including an estimated 2000 between Waiheke Island and Cape Colville on 27/8/62.

GREY-FACED PETREL — Most feed well out to sea. One off outer Coromandel coast on 27/8/62.

WHITE-FACED STORM PETREL — Only 2s and 3s seen off Noises, where there is a breeding colony, on 27/8/62, but some hundreds on 7/9/62. As is usual there was an area where they were not seen between the Noises and directly north-west of the Motukawao Group. Present all down the outer Coromandel Coast.

DIVING PETREL — Small numbers seen off outer Coromandel Coast. In view of the very great population on the Mercuries, it seems likely most feed further out to sea.

GANNET — Can be remarkably scarce and elusive when it is remembered that the Hauraki Gulf has several sizable gannetries on its fringes. Strings of threes and fives usual, the largest noted containing twenty birds.

BROWN BOOBY — On 7/9/62, J.L.K., L.J.B., M.J.H., C.G.C. and P.D.G.S., standing at the stern of the "Hauraki" when about ten miles north-east of Horuhoru, with 3 Cape Pigeons following, saw a Brown Booby flying low over the water in an easterly direction. Field notes confirm identification (v. Stein 1953).

PIED SHAG — Only birds seen were 4 on rocks by Square Top Island on 27/8/62.

SPOTTED SHAG — 4 off Noises on 7/9/62.

ARCTIC SKUA — At least one chasing terns east of Kennedy Bay on 6/9/62.

WHITE-FRONTED TERN — At this time of year curiously scarce in the Waitemata Harbour. Only 2 seen before we reached Waiheke Island on 27/8/62, but opposite Waiheke a flock of c. 2000 were seen with Fluttering Shearwaters. Flock of 600 in same area on 7/9/62. Occasional birds seen rest of way.

ACKNOWLEDGEMENTS

This paper is based mainly on the observations of the various members of the August-September party, and their co-operation has been invaluable. Particular thanks are tended to Mr. I. A. E. Atkinson for information concerning the flora, and Mr. R. B. Sibson for critically reading the manuscript.

Permission to camp on Great Mercury was kindly granted by Mr. Edward Mizen; and the Mizen and Delamore families gave us much useful information. In November the Delamores proved most hospitable hosts for a night.

In August, we were transported to the Mercury Islands by R.N.Z.A.F. "Arataki," which stayed with us for three days. The cheerful co-operation of captain and crew was much appreciated. We returned to Auckland on R.N.Z.A.F. "Hauraki," and they, too, made us welcome. The November expedition was possbile only through the assistance and generosity of our old friend, Mr. Jim Butterworth.

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# STUDIES AT A KAKA'S NEST

*By J. R JACKSON*

In spring, 1955, Mr. K. Cooper, of Ngahere, found a Kaka *(Nestor meridionalis)* nest. That year four chicks were reared and fledged and in 1956-57 there were three chicks, but one died before fledging and in 1957-58 the Kakas did not nest; and in 1958-59 they successfully reared five chicks. Since then there has been no activity by the nest.

In August, 1957, Mr. Cooper showed me the nest and I have watched it since. With this experience I have been able to re-interpret earlier observations of Kakas and to compare with my much more extensive observations of Kea *(Nestor notabilis)* nesting (to be described elsewhere) This comparison has given me confidence to generalise, confidence that the behaviour seen was not the individual idiosyncrasy of a pair of Kakas but is typical of all nestorine parrots, and more specially of all Kakas.

## THE NEST

The nest was twelve feet up in the hollow heart of a Rata *(Metrosideros lucida)* growing alongside a logging road near the crest of the spur between Kangaroo and Wallaby Creeks, Greymouth, and on a north east face over Kangaroo Creek. The main trunk of the Rata was dead and also the secondary trunk, but several smaller branches were still alive. Beyond the road was a slip covered in regrowth near the road but down near the creek open and active. The valley floor beside the creek was grassed and 100 yards across the valley was a steep 300 foot wall rising to a "terrace" (peneplain) level with the one above the nest. The valley sides carry heavy timber and on the terraces a gradation from Rimu *(Dacrydium cupressinum)* association to Silver Pine *(Dacrydium colensoi)* association, to the open pakihis with rushes and sedges depending on drainage and fertility.

The more accessible timber was cut twenty or thirty years ago; more recently the logging has been extended and new roads made. This road up the spur and beyond the rata tree was made in 1954 and 1955, the New Forest Sawmilling Co. Ltd. told me, and timber trucks were passing by several times each day in 1955. This intense activity about the tree in summer 1954-55 without the nest's being noticed suggests that either the Kakas did not nest that season or first selected the tree for the 1955-56 season.

When in the crown of the rata tree the Kakas would have a wide prospect over the terraces, up and down Kangaroo Creek and to a less extent along Wallaby Creek. The Kaka hen when away could easily watch the nest and see any large animals moving on the slip or road. On the southern side of the tree twenty feet away was a Kamahi *(Weinmannia racemosa)* tree which the hen herself used in approaching the nest and this offered the only covered approach.

The nest which Brunner (1952) found on 2/3/1848 was on the southern bank of the Buller River, so with a northerly aspect.

Mr. R. St. Paul, of Minginui, describes in a letter the two trees containing North Island Kaka *(Nestor septentrionalis)* nests which he found. Both nests were in healthy Matai *(Podocarpus spicatus)* trees in heavy forest. He describes the site — "The trees mentioned were on a fairly steep sidling about two chains from a small stony creek." And it is interesting to compare Cayley's (1938) description of the Red-tailed Black Cockatoo *(Calyphorhynchus banksii)* site, "usually a dead tree situated in a clearing is selected." The more southern cockatoos, the nestorine parrots, choose a warm northerly face.

## THE NESTING

I first visited the nest on 29/8/57. The pair of Kakas returned at nightfall. The hen settled on a rata tree 50 yards away and immediately sang her yodelling song. She noticed me as she flew to

the nest tree and began ka-aa-ing. She would switch from the song to the harsh call. We could hear a second Kaka, calling occasionally 50 yards away and at all times the cock remained far more shy by the nest.

The nest itself, three feet down in the hollow heart, was of wood powder and small chips, as Guthrie-Smith (1914) describes, and quite dry.

When we left the Kakas were about, and later I found they often roosted in the rata trees where the hen first settled. I visited the nest again on 17/11/57 and 19/1/58 and found it had not been used. Only one Kaka was about on 17/11/57 and on 19/1/58 twelve Kakas in the nest tree and neighbouring trees and perhaps another dozen calling on the far side of Kangaroo Creek. One Kaka returned four times to the same roost on a small tree across the road from the nest tree.

At 2 p.m. on 28/12/58 the hen was sitting on four eggs. She flushed at my approach but was back in the nest within five minutes, after first calling "quor-quor-quor" quietly in the Kamahi nearby. At 3 p.m. the cock came up and settled in the Kamahi but seemed nervous because of me. He remained about for the remainder of the day. She slipped off the nest after the cock at 6 p.m. and was back within five minutes; similarly at 6.30 p.m. and 7.30 p.m. At 7 p.m. there were four Kakas about the nest and all these birds roosted nearby and were there at 4.30 a.m. on 29/12/58. She left the nest at 4.30 a.m. and twice again before 6 p.m. At 6.15 p.m. I looked at the nest and there were five eggs. She was back in five minutes and was still on the nest when I left at 7.15 a.m.

On 14/2/59 there were five chicks, all vigorous and healthy, well fed with distended crops and of various sizes. Using my Kea experience I judged the largest chick four or five weeks old and the smallest two or three weeks old, two weeks less than the eldest. This estimate was confirmed by very similar photos of the largest on 8/3/59 and the small three weeks later, 29/3/59. This would give an incubation period of about three weeks.

The chicks were clothed in a grey down, already much of the first down was lost, and many of the first down feathers remained not yet broken off from the second down. Adult feathers were showing as the yellow and red feathers behind the eyes and the flight feathers. The upper mandible was black; much of the lower mandible and about the nostrils (though the nostrils were grey) was lemon yellow and also this pigment was deposited in subcutaneous fat all over the body. Inside the legs and to a less extent under the wings were lesions in which this pigment was concentrated.

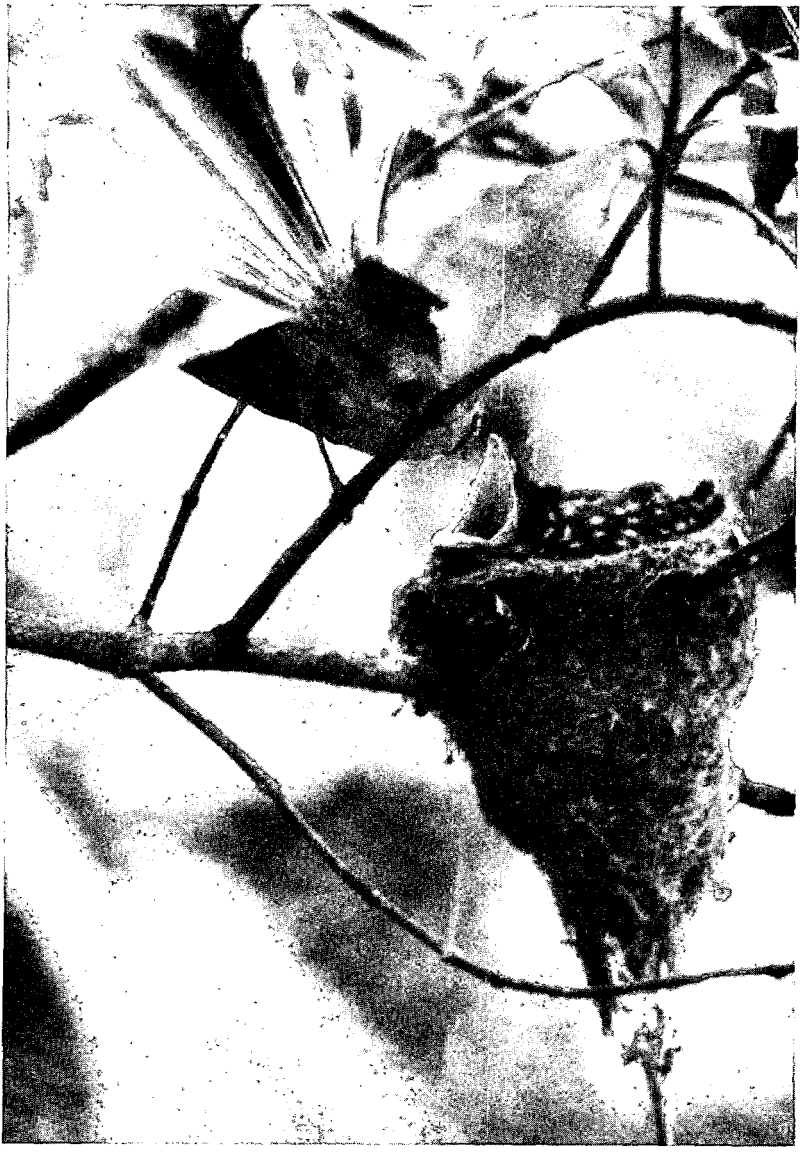
In what were possibly the youngest lesions there was an eighth inch circle raised a sixteenth inch, with a velvety surface, perhaps a very fine mould and all coloured this yellow. Later the centre shrunk, the surface dried, hardened and remained yellow while a white ring had formed about the circumference. Below the white ring the consolidated yellow fat still remained. Then the skin broke about the ring, the centre became white and the lesion fell off with the chick's movements, or a feather could break through and distort the ring. A yellow mole would grow out with and faster than the feather. All the chicks had this condition and did not seem inconvenienced. Professor J. A. R. Miles, of Otago University, thinks it may have been a

[G. J. H. Moon

XIII — Bellbirds **(Anthornis melanura)** are common on many small offshore islands where Tuis **(P. novaeseelandiae)** are very rare or even unknown.

[F. C. Kinsky

XIV — Diving Petrels **(Pelecanoides urinatrix)** range widely in New Zealand waters. They prefer to nest on islands where they can burrow into soft humus under a mat of vegetation on a steep slope with direct access to the sea (v. p. 162).



[P. M. Roberts

XV — Young Long-tailed Cuckoo **(Eudynamis taitensis)** in nest of Fantail **(R. fuliginosa),** placed at about 5½ft. in a pigeonwood at Pye's Pa Bush, near Tauranga. Is this combination unique?

XVI — (a) Largest Kaka **(Nestor meridionalis)** chick in brood at 4 - 5 weeks, Kangaroo Creek, Greymouth, 14/2/59.

[J. R. Jackson

(b) Smallest Kaka chick in brood at 6 - 7 weeks, Kangaroo Creek, 8/3/59 (v. p. 170).

bird pox but material sent to him was too dry on arrival and the pathogen not found. Besides there was a teaming nest fauna, some of which may have caused the condition.

On 8/3/59 the eldest chick was fully feathered and the youngest still with much down on the head and back. This youngest chick was slightly down at the wing though still vigorous. On 29/3/59 only one chick remained in the nest and was fully feathered, so the nestling period was about 9 or 10 weeks. The hen remained close to the nest and there were several other Kakas a little further away.

While watching the nest with chicks I several times saw the cock feed the hen. Usually the ceremonies would begin in the Kamahi next to the nest tree. The hen would flap her wings and move clumsily in the tree top and soon come to rest with her head down, shoulders hunched and her wings and tail spread under the cock on a branch above. Usually he would retreat though sometimes approach when she would rush snorting through her nose at him. Eventually he would take flight 50 yards down a gully to another tree. Soon she would follow and the same ceremonies continue. Then more firmly he would come up alongside her but now she would jump away. He would follow. For a peaceful moment he would preen her crown and then she would butt forward at him again. Eventually he would preen her crown, work down the left side of her face and manage to grasp her beak crosswise. Soon he would have moved so that their bodies and beaks were in line. His shoulders heaved as he regurgitated and her body quivered and tail wagged as she was fed. The whole ceremony would take five to ten minutes.

During the brief spells when the incubating hen was off the nest she would not usually be fed. A sitting hen seems to get impatient about daybreak and nightfall and leaves the nest several times to go and look where she expects the cock to arrive, or to go to a favourite perch and call for him. I did not identify such a perch for this Kaka hen. perhaps because the cock was close by at these times.

When the chicks are fledged the cock plays a greater part in their care. He feeds them while the hen still remains near the nest most of the time. With him they play flying fast, twisting and swerving through the forest; or the hen may come and lead them in a spiralling flight perhaps 2,000 feet up and a mile horizontally and after a quarter hour they return whence they took flight — a ceremony like that of the Gang-gang *(Callocephalon fimbriatus)*, Cayley (1938).

## THE NEST FAUNA

Some of the dry nest material was collected on 17/11/57 and in it Dr. R. Pilgrim, of Canterbury University, found —

Histeridae ... ... ... ... *Saprinus latipes* (10 specimens)

Several collections were made of the damp material in 1959. That of 14/2/59 was typical when there were found the insects —

Histeridae ... ... ... ... *Saprinus latipes* (5 specimens)
Staphylinidae ... ... ... Several species
Diptera ... ... ... ... Several species identified by Dr. R. Pilgrim
the pseudoscorpions *(Chernetidae)* a new species *Apatochernes* to be described by Beier (1962) (47 specimens)
and the mites ... ... ... *Macrochelidae* and *Rhizoglyphinae*

The insects, dung beetles and flies are well known scavengers. The pseudoscorpions probably preyed on the other invertebrates. Without doubt the mites were most important. The macrochelid mites were very numerous and the rhizoglyphine mites ten to a hundred times more so, there being certainly millions in the nest. The mites swarmed all over the chicks. Your arm when you reached in the nest would get hundreds on. Their constant movement on the chicks may have caused failure in the search for lice and analgesid mites.

There were no fleas or flea larvae.

## THE BREEDING SEASON OF KAKAS

The long breeding season of Keas which lay between July and the end of January is now known (McCaskill 1954) and the Duke of Bedford (1954) describes the Red-tailed Black Cockatoo — "Banksians may nest at any time of the year, but the majority lay in autumn and winter." The Kaka has a similar long season for:

This hen twice fledged chicks at the end of December and once at the end of March.

Stead found three Kaka nests in Codfish Island in early January, 1935, and presented the eggs to the Canterbury Museum.

Thomas Brunner found two nests in March, 1848, by the Waitahu and Buller rivers, with the chicks at about the same stage as this nest, and R. Henry found two eggs on 19/3/1895 at Dusky Bay. These eggs are now in the Canterbury Museum collection.

It is certain Kakas lay between September and March; and perhaps Stead's success indicates that at least in the south the peak of the laying season is in December. However, I have frequently seen flocks of six Kakas, or more, in January and think these may be family parties, with chicks recently fledged. Also in September I have had no difficulty in finding locations for Kakas. The hen remains close to the nest. The month when most nest must remain an open question.

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# NESTING RECORD OF TUI

*By A. BLACKBURN*

From casual observations in the past, the period given in the literature between hatching of the eggs of the Tui *(Prosthemadera novaeseelandiae)* and departure of the young from the nest has to me always been suspect. There are not many available references. N.Z. Bird Notes I, 29, gives the period as "ten days" in a rather vague way;

and in II, 131, a period of fifteen days can be inferred, the age of young chicks having been estimated. There are also two references in Oliver, p. 503, the first stating a period of "about fourteen days," and the second "a fortnight." There is a further reference on p. 504 to observations by R. S. Bell of the nesting of a Kermadec Islands Tui, the fledging period being given as 21 days, and this being the only record substantiated by dates. C. Claridge *(pers. comm.)* states that there are no records of this nature in the Society's Nest Records Scheme, and indeed only five Tui cards in the collection.

An opportunity for accurate observation has been provided by a pair of Tuis nesting 20 yards from my home in a suburb of Gisborne. On 23rd and 24th December, 1962, the female was observed bringing much green nesting material to a site 25 feet up in a rimu, near the tip of a thin side-branch, and fortunately on the northern and thus more sheltered side of the tree. Later examination of the discarded nest showed it to be thickly lined with small twigs of tamarisk. On 26th and 27th December, there was a very severe southerly gale, with some heavy rain, and it appeared certain that the nest would be destroyed, or at least deserted. The sway of the tree during the storm was up to 30 degrees. However, on 29th December, the first calm day after the gale, on investigating the nest I disturbed the hen, obviously brooding. The clutch subsequently proved to be three, so the first interesting point is that eggs were laid each day during the gale; but how they remained, or were kept, in the nest is a mystery.

On some subsequent days the hen was observed to leave the nest fairly early in the morning to feed briefly but avidly on mahoe berries nearby, and during some days of hot sunshine was seen perched for considerable periods below the nest. The male was seldom in close attendance, and was frequently in song 50 to 100 yards from the site. On the evening of 11th January, 1963, the male was for the first time observed vigorously chasing Blackbirds, Thrushes and Mynas away from the vicinity, and it was considered that hatching had taken place, or was about to do so. The following evening, 12th January, two half egg-shells were found together 17 yards from the nest site, and later a third was found 15 yards from it. In each case the smaller half of the shell was completely unbroken. Thus the clutch was established as three, and the date of hatching as 11th or 12th January.

Following hatching, it was noted that the male concentrated his attention much on Sparrows, Silvereyes, and the larger introduced species, and took no notice of a family of Goldfinches, which were often in close proximity to the nest, nor of a family of four Fantails feeding nearby. It would appear that the hunting away of other birds may be partly connected with food supply, for Blackbirds and Thrushes were here competing for mahoe and totara berries and kawakawa fruits, and the Silvereyes for these and nectar from red-hot pokers. The Sparrows consistently took the honey water supplied, and as the the Mynas — well, no one likes these overmuch.

From this point I quote from daily notes:

28th January: 16 or 17 days after hatching, the hen is observed still feeding young in nest on insect food, mainly cicadas, small and large.

29th January: More cicadas being fed to young. At 10.30 a.m. one very immature young bird found perched in a low shrub im-

mediately below the nest. An hour later it is in a shrub 25 yards away, and although the hen bird is in attendance, it does not appear to feed it. At 6 p.m. two young clearly seen in the nest, and a third suspected, so that by refusing food, the parent birds may have led it back to the nest. (Observation on this interesting point is lacking, but three birds subsequently left the nest.)

30th January: At 8 a.m. and later, hen still feeding large cicadas.

2nd February: At 10 a.m. hen Tui still taking insect food, mostly cicadas, to young in nest. At 2 p.m. three young birds observed in a close group 3 feet from the nest, two briefly returning there to be fed. Hen feeding them on totara berries at intervals of 6 to 7 minutes. At 6 p.m. the young are still near the nest, which appears to be partly destroyed, probably by movements of young.

3rd February: At 6 a.m. the young are still grouped within 6 feet of the nest site. The male has not been observed to feed the young since leaving the nest, and for some days has ceased hunting away other birds, except of his own kind. Female seen to feed both insects and berries. In the evening the young are still grouped in the top of the rimu tree.

The next three days record the occasional dispersal of the young into the tops of nearby trees, frequent reforming into a tight group, and being fed on berries and occasional insects.

7th February: The young were noted to be dispersed during the day, two within six feet of the ground, and were subjected to vigorous flying attacks by the male bird, and much threat display. The reason for this behaviour is not yet apparent.

8th February: At 5.45 a.m. two young are feeding on mahoe berries and the third at the honey water. The male again attacks them by diving and threat posturing. On arrival of the hen near two of the young, he displays vigorously to her, with song, and follows her closely in flight. At 6.45 a.m. the young are noted huddled close together high in a karaka, and they remain so all day, only moving to a nearby tree. On arrival of the male alone shortly after 7 a.m. they make a suppressed screaming sound, quite different from the low chattering given when expecting food. Following the regrouping, the male attended the feeding of the young on several occasions, and displayed to the female, and later he sat quietly by. Feeding by the hen during the day certainly included nectar, which the young took delicately from the tip of the hen's slightly opened bill. The hen was observed several times to adopt a threat posture to the young immediately after feeding, and this behaviour, I feel sure, is closely connected with the earlier attacks by the male. The first attempt at song was heard to-day, one young emitting several clear, sweet, single notes.

The attacks were reminiscent of the behaviour of the male North Island Weka *(Gallirallus australis greyi),* which I have observed to attack its young furiously when they have reached the rufous-feathered stage, with the object of driving them out of his territory. Shortly afterwards he would be seen to feed the young, the conflict of the two instincts being most interesting. However, the reasons for the male Tui's behaviour were different, and in my opinion can be ascribed to (1) the danger in dispersal of the young at the age of four weeks, particularly to points within a few feet of ground level, and (2) to the convenience to the hen bird in feeding young which are grouped together.

A note on the plumage of the young at four weeks is as follows: Some grey fluff still adhering, particularly to upper tail coverts and sides of breast. Grey area round throat and nape. Yellow gape still very noticeable, but now faded to cream. White alar bars conspicuous.

The same pattern of behaviour continued until 11th February, the young usually being found grouped high in a karaka tree, some 30 feet from the house. One young bird, presumed to be a male from the less amount of pale feathering at the throat, was observed to bathe vigorously in a tin of honey water, so a shallow dish of water was provided and used for this purpose.

Feeding of nectar or liquid is by two methods: (a) Referred to above, with the hen's bill in a horizontal position, and (b) The hen perches above the young bird, and vigorously regurgitates three or four times with a "pumping" action, her bill held vertically downwards. This method was used with honey water. On two occasions when method (a) was used, a quantity of clear liquid, no doubt honey water previously fed, was observed to flow from the young bird's bill.

12th February: Young birds are dispersed during the day and seen only occasionally, but by 6 p.m. are gathered in their usual roost high in the karaka tree, but no longer in a close group.

14th February: At 6 p.m. there is some apparent "rounding up" by the male, but the young male bird responds to threat posture by opening his bill wide, and refusing to move. No sign of grouping for the night.

15th February: A brief period of active feeding of all three young with honey water by the hen at 8 a.m. At 7 p.m. the young have forsaken their usual roost and have apparently dispersed.

A plumage note at five weeks: The gape is still noticeable, but much reduced. The pale yellow line extends to the tip of the bill, showing on both mandibles, the remainder of which is very dark grey, almost black. The mantle and underparts are still blackish grey, but the metallic sheen shows brilliantly on primaries, secondaries, and tail. The length of tail now equals that of the adult bird, having grown fully half an inch in the past three to four days. A ring of grey feathering seven-eighths of an inch wide, uniform round the neck of the two females, but in the male narrower in front. Legs blackish, but feet light grey.

## SUMMARY

1. The hen laid her eggs during the height of a severe gale with some heavy rain.

2. The hunting away of other birds by the male appears to be connected with food supply in the vicinity of the nest.

3. The brooding period up to hatching is confirmed as 14 days.

4. The made was not definitely observed to feed the young on any occasion, either in the nest or subsequently.

5. The period in the nest is established as 21 or 22 days.

6. Every observation of feeding at the nest was of insect food only, and after leaving the nest, of berries, occasional insects, and nectar.

7. A young bird either leaving or fallen from the nest at 17 or 18 days was led back to the nest, probably by withholding food.

8. Attacks and threat display against the young at four weeks would appear to be to force them to regroup at a height for safety, and for ease in feeding.

9. At five weeks the young become practically self-supporting.

# SHORT NOTES

## OBSERVATION OF A KOKAKO NEST

On the top of a ridge in the Hunua Ranges at about 1,800 feet, my brother, J. W. St. Paul, and I, on 1/1/62, observed an adult Kokako *(Callaeas cinerea wilsoni)* feed in a tree what we took to be a fully developed young bird. It could perhaps have been the male feeding the female, but we were both satisfied that the one fed was smaller than the female which afterwards proceeded to nest. If this was a smaller and a young bird it was not seen again. The adult bird, immediately after feeding the supposed young one, gathered a bunch of moss and small sticks for nest building. This was continued by two birds. The nest was being built about twenty-five feet from the ground in a mass of rata vine on a Raukawa *(Pseudopanax edgerleyi)*. Unfortunately it was not practicable to tin the tree or isolate it to stop vermin reaching it. For this reason and because the place was so remote few but lengthy visits were made.

8 Jan., observed from 0090 hrs. until 1540. Weather fine, wind cold. 0090, female on nest. The male sang strongly for five minutes a hundred yards down the slope, then stopped altogether. All that day the female sat for one hour at a time, leaving for five to ten minutes each period to feed on leaves or drink from a stream a hundred and fifty yards away.

10 Jan., 1330 hrs. to 1540, fine, sunny. Female sitting as on Jan. 8. The male joined her each time she left the nest.

17 Jan., 0830 hrs. to 1500, morning fine, cool, afternoon hot. 0830, female on nest, where she was fed by male at 0845. 0855, female left nest, joined male close by and went for long flight down to water. 0905, returned to nest and sat for half-hour spells with breaks of five to eight minutes. The male made calls only, no loud song.

24 Jan., 0955 hrs. to 1400, fine sunny windy morning. 0955, female on nest, male one chain away. 1025 left nest and went to creek for wash. 1035 back to nest quite wet and shook feathers before sitting on nest. 1105 left nest for five minutes to feed on tawa leaves. 1140, again left nest for five minutes to feed on tawa leaves. 1215, left nest for another wash and returned with feathers wet, being fifteen minutes away instead of usual five to ten minutes. The male often joined her one or two chains from nest when she came off to feed or drink. Only one faint bit of song from male at 1205.

31 Jan., 0800 hrs. to 1300, weather fine. 0800, female calling quietly as she approached nest; stayed about half a minute, then flew across bush and was not seen again. Eggshells on the ground near the tree proved that at least two eggs had been hatched. Vermin had apparently taken the young very soon after the hatching.

This record gives only an approximate time from laying to hatching. The nest was partly built on Jan. 1 and the bird was incubating on Jan. 8. so that the clutch of two, or perhaps the usual three eggs, would be complete on say Jan. 6. If hatching took place on Jan. 30, the period would be approximately twenty-five days.

The male assisted with the building of the nest but was not seen at any time to sit on it.

—R. St. PAUL

## NESTING OF THE WHITE-EYE

On the morning of 13/11/62, I saw a White-eye *(Zosterops lateralis)* with a piece of green lichen in its bill, and about mid-day on 14th November found the nest, placed 4ft. 6ins. above ground level in the upper part of a gorse bush near the top of a bluff on the southern shore of the Kerikeri Inlet, alongside a frequently used track. The nest was still unfinished and at this stage consisted mainly of thistledown. By 16th November the nest was completed. The nest contained two pale blue egs when inspected at 10.15 a.m. on 19th November and again at 8 a.m. on 20th November. A third egg had been laid by 10 a.m. on the 20th November.

The first egg hatched about 12.50 p.m. on 29th November. I saw the parent sitting on the edge of the nest holding in its bill what at first looked to be a blue feather, but on closer inspection proved to be half an eggshell. When the bird flew off I found the chick still in the other half of the eggshell. The second egg hatched between 3 p.m. and 5 p.m. the same afternoon, and the third egg hatched between 10.30 and 12 noon on 30th November. By the 3rd December wing quills were showing about $\frac{1}{4}$in., and over the next few days the feathers on the body grew until at 6.45 p.m. on 9th December the three chicks were fully feathered, greenish grey on the upper parts, but without the white eye ring of the adult bird. When the nest was inspected at 8.30 a.m. on 10th December, the chicks had left. The family party was seen in the area two days later.

Oliver (Second Edition, p. 499) gives the period of incubation at the White-eye as eleven days, occasionally twelve days: Moon (Focus on New Zealand Birds, 1960, p. 28) gives 10-11 days: Stead (Life Histories of New Zealand Birds, p. 140) 10 days, and Buller (Vol. 1, second edition, p. 83) quoting Potts, states that birds commenced incubation on October 16th, and the young hatched on October 25th — a period of nine days. From the data obtained on the Kerikeri nest it appears that incubation must have started when the second egg had been laid, on 19th November: the first two eggs hatched on 29th November (10 days) and the third egg hatched the following morning, also after a ten-day incubation period. The young birds left the nest just under ten days after the last chick had hatched.

During the incubation period the parent bird sat tight and did not move even when I approached to within three feet of the nest. Throughout the whole incubation and nestling period the parents were quite unafraid. I cannot say with certainty that both parents incubate, but on at least three occasions when the sitting bird flew off the nest in one direction, a bird flew in from another direction and sat on the eggs within a minute of the first bird's leaving. These apparent change-overs were observed to occur at about half-hour intervals.

I had no opportunity for detailed observation of feeding of the chicks, but on 7th December the parent brought to the nest a green caterpillar about 1 inch long, and on 8th December, a small green plant hopper (probably *Siphanta acuta*).

The nest was a small cup constructed of fine dry grass stems interwoven with thistledown. On the rim and on the outside of the

cup there were small and large patches of green and brown lichen. The walls were thin and flimsy but the rim tightly woven with cobwebs, thicker and stronger at the points of attachment to the two dead gorse twigs between which the nest was slung. The base of the cup was also tightly woven and compacted with cobwebs. Inside the cup, at the junction of walls and base, the nest was strengthened by a layer of black hairs (probably from Polled Angus cattle) forming a circle about 40mm. diameter and 8mm. broad. A few black hairs were also woven into the underside of the base. The nest was measured after the chicks had left, outside dimensions 70mm. across by 50mm. deep; inside 50mm. across by 40 mm. deep: these measurements are probably in excess of the original size of the nest, as the walls had stretched and on one side slightly torn apart with the weight of the chicks.

— PETER GROSS

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## WINTER FLOCKS OF FINCHES FEEDING ON REDROOT

At North Rd., Clevedon, Messrs, A. E. and J. C. Blundell, on neighbouring farms, have been growing the winter forage crop known as chou mollier. This was fed to dairy cows, being grazed in strips with the use of electric fences. The crops were free of weed for two or three years but in 1958 a weed named Red-root or Pigweed *(Amaranthus retroflexus)* infested the crops badly. Its millions of small black seeds attracted many small birds. In 1959 M. J. Blundell (Mrs. A. E.) reported Greenfinch 100, Goldfinch 300 - 400, Yellowhammer 300-400, but when asked to estimate the numbers for 1960 stated that she could not attempt it owing to the great number of the birds and the mixing of the species. This difficulty was fully realised when H.R.McK., with Mrs. Blundell and R. St. Paul, on 10/6/61, went to make a count. Mixed flocks would fly up and change places. Then from a part of the crop where no birds were to be seen would erupt another large flock, so that they were never all in sight at the same time. When a flock rose and flew into the trees there was no time to count the species separately so we estimated the total and then proportioned the species. It is therefore not claimed that the numbers are correct but they are, if anything, under-estimated. The birds fed just as readily where the crop had been eaten off, the seed being still plentiful there.

Other chou mollier crops in the Clevedon district were noted. First croppings from pasture had no weed and so no birds; but one heavy crop about five miles away had much weed and only a few birds. At Alfriston where R. St. Paul was staying, a small part of a chou mollier crop had on 11/6/61 c. 1,000 Goldfinches, c. 200 Greenfinches, c. 100 Redpolls and c. 250 Sparrows. On 12/7/61 he counted in two and a half chains square 800 to 900 mixed birds. Note was taken of the small birds about H.R.McK.'s home in Clevedon, only two and a half miles from Blundells' The usual small numbers were present. No attempt is made to explain this.

Counts were made as follows:—

10/6/61. Count made by Mrs. M. J. Blundell, R. St. Paul and H.R.McK.

| | J. C. Blundell's 3 acres | A. E. Blundell's 6 acres | Total |
|---|---|---|---|
| Yellowhammer | 150 | 80 | 230 |
| Goldfinch | 2,500 | 700 | 3,200 |
| Chaffinch | 100 | 60 | 160 |
| Greenfinch | 30 | 150 | 180 |
| Sparrow | 100 | 700 | 800 |
| Redpoll | 20 | 120 | 140 |
| Silvereye | 20 | 30 | 50 |

26/7/61. Counted by H.R.McK.

| | J. C. Blundell's now 1 acre | A. E. Blundell's now 2½ acres | Total |
|---|---|---|---|
| Yellowhammer | 200 | 10 | 210 |
| Goldfinch | 1,500 | 800 | 2,300 |
| Chaffinch | 150 | 300 | 450 |
| Greenfinch | 700 | 400 | 1,100 |
| Sparrow | 1,200 | 600 | 1,800 |
| Redpoll | 30 | 50 | 80 |
| Silvereye | 20 | 0 | 20 |

| 27/5/62. | J. C. Blundell's 3 acres. None fed off but amaranthus ripe and ripening | 27/7/62 | J. C. Blundell's Now 2½ acres |
|---|---|---|---|
| Goldfinch | 2 | | 0 |
| Yellowhammer | 150 | | 130 |
| Chaffinch | 0 | | 150 |
| Greenfinch | 100 | | 150 |
| Sparrow | 50 | | 5 |
| Redpoll | 100 | | 30 |
| Silvereye | 3 | | 50 |

A. E. Blundell grew no crop this year.

The Silvereyes were feeding on *Solanum nigrum* and some Inkweed *(Phytolacca octandra)* and the numbers seen were not representative. The species in numbers to be expected of the district were Yellowhammer and Chaffinch. Goldfinches and Sparrows have not before been recorded in Clevedon in such numbers but the figures are not regarded as phenomenal.

The Greenfinch representation was really staggering, especially the count on 26/7/61, when some hours were spent checking and re-checking. It is quite a rare bird here, the only previous flocks noted by the writer being: c. 50 on 12/4/42; c. 100 from 25 - 29/7/47; c. 30 on 7/4/50; all at Kawa Kawa Bay; c. 100 on 20/3/48, at Moumoukai hills, where J. W. St. Paul has also seen similar flocks.

The greatest surprise of all is caused by the Redpolls. In this rich pasture land they have not been recorded in the last twenty-two years of active bird-watching, though found on rare occasions in very small flocks in the hills to the east and west. In proportion to the other birds, except the Greenfinch, the total of 140 seems fantastic. In July, 1961, quite a few were pink or red-breasted, but in July, 1962, quite 50%, no doubt the males, were in maximum colour.

— M. J. BLUNDELL
— H. R. McKENZIE

## WINTERING GREENFINCHES AT ROTORUA

The Greenfinch *(Chloris chloris)* is a rare breeder about Rotorua, but since the winter of 1958 real irruptions here occurred over a wide area from June to September; and 1962 was no exception.

On 29/9/62 we closely inspected two mixed flocks of passerines feeding on the lawns of the Memorial Park alongside Lake Rotorua. We estimated the flocks to contain:— 150 - 170 Greenfinches; 100 - 140 House Sparrows and 20 - 30 Chaffinches. A notable absentee was the Yellowhammer.

— M. J. S. BLACK
— C. D. BLOMFIELD

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## A CONCENTRATION OF GOLDFINCHES

On 28/10/62, at about 6 p.m., when motoring on one of the straights between Warkworth and Kaipara Flats, I came on what looked like stones on a shingly beach. For a hundred yards the full width of the road was covered closely with a gigantic flock of Goldfinches *(C. carduelis)*. They were reluctant to fly. I slowed down and the air became full of them, both sides, above and underneath. Some hit the car and some hit each other when there was no flying space available. I should think by a well considered estimate that allowing fifty birds per running foot there would be fifteen thousand. The usual flock about here would number about one hundred. Why they would gather in such numbers at nesting time and sit still on a dry road gives food for thought.

This particular piece of road is favoured by Sparrows *(P. domesticus)* as a dusting area, there often being fifty to one hundred birds there in the late afternoon. For instance, on 11/11/62 at 5.45 p.m. there were the usual Sparrows, but no Goldfinches. On this occasion I did not see any. During the month following October 28th. I unsuccessfully watched for Goldfinches about the district and even the few present before that date appeared to have vanished.

— F. P. HUDSON

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## SPARROWS AS BEE-EATERS

At Ashburton Domain on 13/1/63, I saw House Sparrows *(P. domesticus)* catching and eating bees at a wild hive in a hollow *Sequoia gigantea*. They usually flew to the lip of the hole, picked up a bee and flew down to the ground to break it up and eat it. About ten bees were seen caught by different Sparrows in half an hour.

— W. T. POPPELWELL

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## COOTS IN HAWKE'S BAY

On the afternoon of 4/6/60 I visited L. Tutira with a friend who wanted to see some Black Teal *(A. novaeseelandiae)*. But to my surprise some of the first birds we saw turned out to be ten Coots *(Fulica atra)* in a flock. It was their white bills that made us notice them. I was aware that Coots had been recorded at Lake Tutira before, but not in such numbers. As it was about 4 p.m. and the light was not good, we decided to return as soon as possible to make sure of what we had seen.

We paid a second visit at 2 p.m. on 11/6/60, this time having with us 7 x 30 binoculars. Using the boat, we found the Coots, ten as before, on the south side of the lake in a sheltered bay with native bush and flax around the edge, one of the first places on the lake to catch the early morning sun. We were able to row to about fifty yards from the Coots; but as we tried to draw nearer, they would take off, first running on top of the water; then flying for about 100 yards before landing.

— J. S. HEIGHWAY

On a trip through central Hawke's Bay on 24/11/62, I investigated a rumour that a pair of Coots *(Fulica atra)* had been seen on Horseshoe Lake, Patangata. This lake, as its name implies is more or less the shape of a horseshoe and so has a comparatively long shoreline for the small amount of open water. Most of the shoreline is in grass, but patches of scrub, willows and dense raupo offer plenty of cover for waterfowl. Some acres of the surface of the lake are covered with the Yellow Water-lily *(Nuphar lutea)*.

A lake such as this is not easily searched at any time and on this visit the short time at my disposal, plus a strong choppy wind, precluded a thorough census. However, I did locate ten Coots, four pairs and two single birds. They were all fairly close to cover and were repeatedly diving for weed, which was plentiful. A mustelid was seen in the area where one pair of Coots seemed to be nesting.

Elsewhere in Hawke's Bay Coots have been recorded on several occasions at L. Tutira since 1954, the biggest count of ten being made by Mr. J. S. Heighway in June, 1960. There are many other lakes in the district which could harbour Coots. It should perhaps be mentioned that during the recent search for Black-fronted Dotterels *(C. melanops)*, all lakes in the vicinity of Hastings, Fernhill and Taradale were examined but no Coots were seen.

— NORMAN MACKENZIE

[Although there is no mention of Coots in the North Island either in the Checklist (1953) or in Oliver (1955), they have now been recorded on at least five waters from the Wairarapa to Auckland.—Ed.]

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## BLACK-FRONTED TERN AT GREYMOUTH

ON 10/11/62 I located an unusual tern for this area at the Taramakau rivermouth. It was resting with c. 170 White-fronted Terns. I was unable to get across the river to it but after long study through binoculars I decided that it was probably a Black-fronted Tern *(C. albostriatus)*. Next day I checked at high tide and was lucky to find it with a small flock of White-fronted Terns. It rested on the edge of the flock and when disturbed flew away for a short time. It was easily picked from the other birds in flight by its very white rump, grey overall plumage, and apparently short tail. When fishing it just flew low over the surface and apparently picked food from the water. At rest, the orange bill was most noticeable, as were the legs of similar hue when it took off in flight. The forehead, nape, and crown were all black, and a white band ran below the black on either side of the head. The general plumage was a greyish colour. I studied the bird closely in good light while it was preening from a range of about

ten yards. I confirmed my original opinion that it was a Black-fronted Tern in adult plumage.

— P. GRANT

[This is a very interesting record because the Black-fronted Tern, which is such a familiar bird on the riverbeds east of the Southern Alps, is virtually unknown west of the main range; and most ornithologists visiting Westland have failed to find one either along the riverbeds, some of which appear to provide quite suitable habitats, or at the estuaries.—Ed.]

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## BLACK-FRONTED TERN IN KAIPARA IN SUMMER

As far as the records go the northern limit of the winter range of the Black-fronted Tern *(C. albostriatus)* is Kaipara Harbour, where small flocks have twice been found resting on a derelict jetty at Tangaihi on the Northern Wairoa River, 16 on 23/4/55 and 14 on 15/6/57 *(Notornis* VI, 244, and VII, 197). Since it is far from certain that this predominantly South Island tern habitually travels so far north to winter, it was all the more surprising to find one in Kaipara in summer. On 11/11/62 Lt. A. Y. Norris, R.N., J. L. Kendrick, P. D. G. Skegg, R. H. Sibson and I crossed the sandy tidal flats beyond Tapora to the big island, built of sand dunes with some scrub in the hollows, and walked around it.

On the outer side facing Kaipara Heads were c. 500 White-fronted Terns *(S. striata),* some just preparing to nest — only one egg was seen — and on the edge of the colony many immature non-breeders, identifiable by the height of the white on their foreheads. Apart by itself was an obvious Black-fronted Tern. It was very approachable: and as a result was most satisfactorily photographed in colour both at rest and on the wing by J.L.K. From its plumage we judged that it was about a year old and certainly immature, for though bill and feet were orange, the crown was not black but speckled. In flight the white rump contrasted vividly with the general grayness of its upper surface.

It is perhaps worth mentioning that as we walked back across the wet sands, we counted at least thirteen Little Terns *(S. albifrons)* resting with a big mixed pack of waders, mainly Godwits and Knots. We looked in vain for a pair of Fairy Terns *(S. nereis)* which were suspected of breeding on the island last year.

— R. B. SIBSON

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## LITTLE TERNS AT OTAGO HEADS

On 13/11/62 a visit to the mole at Aramoana, Otago Harbour, showed two very small terns sitting beside White-fronted Terns *(S. striata).* Half the size of the latter, they had black bills, reddish-black legs, gray back and wings, white forehead and crown, black band round back of head to the beak, tail white with shallow notch; and on the back the spotted mottling of juveniles. They seemed to me to be Little Terns *(S. albifrons)* possibly five or six months old. After flying off they fished like the White-fronted Terns which were working far out. On a subsequent visit they could not be found.

— W. T. POPPELWELL

## SPOTLESS CRAKE ON PONUI ISLAND

On 14/6/62, a Spotless Crake *(Porzana tabuensis)* was brought in unhurt by a cat to the home of Mr. Fred Chamberlin. My wife and I saw it and identified it there the next day. After photographs were taken by Peter Chamberlin, it was released. A few days before another Spotless Crake had been killed by the cat.

Since rail habitat is plentiful on Ponui, there could well be more of these birds, but no calls have been noticed. From time to time Banded Rails *(R. philippensis)* are seen among the mangroves in the creek. Spotless Crakes occur in hill swamps to the east of Clevedon. They are also known from the Ness Valley and may be in the swampy gullies opposite the south end of Ponui.

— H. R. McKENZIE

[Unfortunately much of our information on the distribution of the two small elusive rails *P. tabuensis* and *P. pusilla,* depends on specimens brought in by cats. Buller, writing of a "good-natured household cat" which had brought in several specimens "killed but otherwise undamaged," comments: "Surely this cat merits an apotheosis in the Colonial Museum!" However, despite the menace of cats and rats, these rails are far from extinct.—Ed.]

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## PREDATION ON FAIRY PRIONS

On 20/8/61 as I was going for a walk on The Brothers Island, Cook Strait, I heard the alarm call of a Fairy Prion *(P. turtur)* coming from a patch of taupata scrub along the south bank and without difficulty located the burrow from which the agitated sounds were issuing. When I was about to put my hand down the burrow, a Tuatara appeared at the entrance with a feather in its mouth. I made the Tuatara go back down the burrow; and when the loud protests again came from within, the Tuatara re-appeared at the entrance still with the feather in its mouth.

After the Tuatara had moved away, I put my hand down the burrow and received a severe pecking. I then took out a Fairy Prion; but again there were sounds in the burrow and I brought out a second Fairy Prion. They were evidently a mated pair. There was no egg. Both birds settled down quietly when returned to the burrow.

On the afternoon of 28/10/61, I saw a Harrier *(C. approximans)* rise from a small bush of taupata, carrying in its claws a bird which at first glance looked like a Diving Petrel *(P. urinatrix),* but I had my doubts as no Diving Petrels burrow in this part of the island. I followed the Harrier for about 120 yards up the slope towards the lighthouse, and found the remains of a Fairy Prion. All the feathers had been stripped off the body, the head was missing and the body still bleeding; tail and wings were intact. Feathers were scattered over the top of the taupata scrub where the Harrier had landed.

Returning to the spot where the Harrier had first been seen, I found the head in a clump of weed with a trail of feathers leading to the burrow at the end of which was a Fairy Prion's egg. The burrow, which turned sharply, was 14 inches long. I could not help wondering how the Harrier had known the Prion was in the burrow and how it had got it to the entrance.

At The Brothers, Harriers have been seen carrying young Red-billed Gulls also.

— ALAN WRIGHT

## WANDERING TATTLER AT BLACK REEF, HAWKE'S BAY

During the visit of the R.A.O.U. to Cape Kidnappers on 10/11/62 one of the party, Dr. N. Wettenhall, reported a "Grey-tailed" Tattler, the common tattler of Australia; but after he had described the call we immediately suspected it might be a Wandering Tattler *(Heteroscelus incanus incanus)*. Later this identification was confirmed. The bird was seen by most of the party and was observed very closely by B.D.B. half a mile back from Black Reef.

This tattler was so tame that by stalking it among the rocks B.D.B. was able to approach within ten feet and was able to see the nasal groove with the naked eye, this reaching three-quarters of the way down the bill. The bird, probably a recent arrival, was feeding voraciously on the exposed rock-shelf. It was seen to eat a small crab and what appeared to be a marine worm. In between feeding it bobbed its tail up and down rapidly in true tattler fashion.

When flushed the bird would call with a trilling whistle and B.D.B. was able to make it circle around him by imitating the call. It also called while perched on the top of some of the larger rocks. The upper plumage was an even grey. The underside was almost white with grey shading coming onto the breast from the sides. This showed faded wavy transverse lines. The bill was dark greyish green and the legs greenish yellow.

— B. D. BELL
— A. BLACKBURN

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## TERRITORIAL BEHAVIOUR OF NESTING MYNAS

I recently watched a pair of Mynas *(A. tristis)* nesting and have noted their reactions when anyone or anything approached the corner of the house where the nest was situated. No other birds were permitted to approach the roof of the house where the nest was nor were they allowed to land on the roof of the houses on either side. Humans, cats and dogs approaching to within about forty feet of the house were swooped upon by the Mynas. Rowdy children in particular were very much disliked and I have seen a Myna swoop to within one foot of a child who was playing fifty feet from the house.

Although the Mynas did not themselves eat bread put out, they would not allow Starling to feed. After putting to flight any Starlings that attempted to land, the Mynas returned and took to task the Sparrows, but, being in larger numbers and less fearless, the Sparrows' departure from the bread was only temporary.

On one occasion both Mynas were seen chasing three young Starlings away from the bread when two adult Starlings approached and began to chase the Mynas. The two Starlings were joined by four other adult birds and a combat took place. After one Myna had had enough it flew to a high tree and watched its less fortunate mate being attacked by the six Starlings. Eventually the Starlings made off, leaving the Myna, which had lost several feathers, looking very dejected. For three days it was observed with ruffled feathers.

From my observations these Mynas considered that their nesting territory covered about an acre with their nest as the central point, but their behaviour of swooping on prospective predators only began when the chicks hatched.

— D. F. BOOTH

## ROOKS NESTING IN DEAD TREE

On 20/10/62 while taking part in the search for Black-fronted Dotterels *(C. melanops)* along the Tutaekuri River, I was diverted for a short while by the cawing of Rooks *(Corvus frugilegus)*. The size of the Dartmoor rookery is given as 45 nests by Bull *(Notornis* VII, 152). What appeared to be the main rookery now consisted of eight nests in the top of a very tall gum; but I was surprised to see Rooks visiting two nests in an isolated dead tree which was growing on the edge of a former river-terrace where it sloped steeply away for about 50 feet to the present river-flat. The lower ends of a few jagged limbs remained near the top of the tree. The two occupied nests, in which eggs or young birds were being brooded, were wedged up against the main trunk in crutches formed by the dead limbs at about 60 and 70 feet. They were exposed to all the winds that blow. On the river-flat were plenty of trees such as poplars and pines, which seemed suitable for nesting. But these two pairs of Rooks seemed deliberately to have sought out the most exposed site available. I have seen many rookeries, mostly in England, and as a boy collected many Rook's eggs; but I cannot recall having seen anywhere else Rooks' nests built in such a way in a dead tree or in such an exposed situation.

— R. B. SIBSON

## BLACK SWANS FEEDING ON WILLOW LEAVES

On 27/9/1962 at Lake Okareka we witnessed a strange manner of feeding by a pair of Black Swans *(C. atratus)* with two well-grown cygnets still in the down. A weeping willow growing on the lake verge had spread its long drooping shoots over the water. The parents with necks stretched to their limit, were busily pulling off the leaves and shoots and dropping them on to the water, to be greedily devoured by the young birds.

What was so surprising was the systematic method employed by the adults. The tough whip-like shoots were pruned to the maximum height of the reach, i.e. about four feet, of the long necks before starting on a new section. In other words, a section of the area was completely eaten out before the birds attacked another. In effect an unwitting display of avian economy.

— C. D. BLOMFIELD
— M. J. S. BLACK

## SELECTIVE FEEDING OF SHINING CUCKOO

On 18/12/62 a slightly injured Shining Cuckoo *(Chalcites lucidus)* came into my hands, and the opportunity was taken over a period of several days to observe its feeding preferences. Caterpillars of all kinds were taken avidly, and passed rapidly through the bill from end to end, up to eight times with the large specimens, the caterpillar at the same time being very vigorously shaken, obviously to expel some unpalatable juices. It was then swallowed, however large, in one rapid motion. Pear-slug, the larva of the introduced European saw-fly *(Caliroa limacina)* was also much favoured, and swallowed without any preliminary maceration. No interest was shown in earthworms, wood-lice, or other ground-dwelling bugs, nor in various wood-boring grubs. Spiders and houseflies were at first accepted, and then discarded as though distasteful. Small cicadas were readily taken, however, and given a few hard knocks, but insufficient to kill or stun the insects, which were swallowed while still very much alive.

— A. BLACKBURN

# FIELD STUDY COURSE, SOUTHLAND
## 18th - 26th January, 1962

The course was attended by twenty-six members. Many of these were residents of Southland, others travelled from Otago, Canterbury, Wellington, Manawatu, Gisborne, South Auckland, Auckland and the Far North. Eleven of the visitors camped comfortably at Witheford Hall, Otatara, kindly lent for the period by the Church Committee, and five were entertained in private billets.

The object of the course was to study the birds of coastal Southland from Tewaewae Bay in the west to Toetoes Harbour in the east— a distance of nearly 70 miles as the shag flies and very much further, if one takes into account the deeply indented coastline.

The most ambitious project so far undertaken by O.S.N.Z., it was a notable success. Southland R.O. Barrie Heather had devoted much time and thought to planning, organisation and map-making, and during the week was not only busy in the field by day but also worked late into the night arranging details of teams and transport for the following day's work. On hot, sunny days, everything was plain sailing, but when the weather changed and a succession of cold fronts brought rain, hail and high winds, the necessary adjustments to the planned programme complicated the organiser's task. It is a tribute to his efforts that so much was accomplished in so short a time, and so little left undone.

The total count of waders was just under 15,000 birds and about 10,000 of these were found on Oreti Estuary. Relative abundances, expressed as approximate percentages of total waders, was as follows:—

| | |
|---|---|
| South Island Pied Oystercatcher | 43½% |
| Bar-tailed Godwit | 28 % |
| Turnstone | 9 % |
| Banded Dotterel | 8½% |
| Pied Stilt | 8 % |
| Other wader species | 3 % |
| | 100 % |

It seems that the far north and the far south of New Zealand are the areas most favoured by Turnstones. At some future date it may be an interesting exercise to work out the relative seasonal abundance of wader species in different parts of the Dominion.

A full report of the course is being prepared for publication. All that need now be mentioned are some of the highlights, such as a flock of 35 Sharp-tailed Sandpipers at Little Waituna; 16 Curlew, 9 Stints and 5 Little Terns at Waituna Lagoon; a Greenshank at Oreti Estuary; and at Waimatuku River Mouth a White-winged Black Tern, a Wrybill and a Black-fronted Dotterel! Northern visitors were interested in the relative scarcity of Knots and Kingfishers and glad to have an opportunity to observe Stewart Island Shags, Spur-winged Plover, Black-fronted Terns, Little Owls and South Island Fernbirds. Patrols on Oreti Beach recorded remains of three species of Penguins, five Sooty Shearwaters and five Mottled Petrels, plus an assortment of

dessicated Prions. A Broad-billed Prion was picked up just before it died at Lochiel, 20 miles from the sea, and another flew aimlessly around over the tideline at Awarua Bay.

A feature of the course was the warm co-operation extended by Southland Acclimatisation Society. O.S.N.Z. members greatly appreciated permission to visit the Game Farm, and Roger Sutton was a tower of strength. We were glad, indeed, that he seemed to enjoy taking part in the course as much as we enjoyed having him with us.

A public meeting held at Southland Museum on 24th January was attended by 55 members of O.S.N.Z. and kindred organisations. The President opened the meeting and discussed results so far achieved, drawing attention to the value of this and similar organised study courses, which not only collect valuable information but also provide a useful basis for follow-up work by members resident in the areas studied. Mr. Kinsky spoke on the Banding Scheme, a selection of slides by Messrs. T. M. Smith, J. G. Timlin and B. D. Heather was shown, and the meeting ended with a beautifully illustrated talk on Fiordland coast by Mr. J. Mackintosh.

All were disappointed at the absence on holiday of Mrs. Olga Sansom, who, however, performed signal service to the Society by contributing an article describing the aims and objects of the course to one of the local papers. Several press notices recording progress and findings appeared during the week.

Proverbial Southland hospitality was extended by Mrs. Linscott, Thornbury, whose house was a haven for lunching ornithologists on the day of the western beat; by Mrs. Lobb, Lower Mataura, whose splendid aviary was a delight to visit; and by Mrs. Barlow, Invercargill, who turned her house into a conference room for one of the most rewarding discussion groups of the week. To these ladies and to those others who in so many ways helped to make the course successful and the camp enjoyable, the Society tenders its grateful thanks.

—A.T.E.

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# REPORT OF DELEGATE TO INTERNATIONAL ORNITHOLOGICAL CONGRESS at Ithaca, New York, 16th - 24th June, 1962

I have the honour to report that I was able to attend this Congress accredited as a delegate of the Ornithological Society of New Zealand. I was also in my capacity as a member of the International Committee of the Congress, required to attend the pre-Sessional and post-Sessional meetings of that Committee, at which a decision was made that the next Congress would be held in the United Kingdom, Dr. David Lack, President.

The Congress was attended by about 800 delegates, all of whom were comfortably housed in the campus buildings of Cornell University. Generally, facilities and organisation were excellent throughout.

The large number of papers necessitated the holding of three concurrent sessions which meant of course that no participant could possibly attend all the sessions of interest and it was at times difficult to make a selection. However, there were some attempts at grouping

the papers and most of us managed to attend the sessions in our special fields. The duties of chairmanship were shared out and I was able to undertake one half-day chairing the session in which Dr. Westerskov presented his paper on the Royal Albatrosses at Campbell Island. The other direct New Zealand contribution was that of Dr. B. Stonehouse, who presented a short paper on the Adelie Penguins, Cape Royds, Antarctica.

There were a number of papers of outstanding interest to New Zealand ornithologists and it would be invidious to try and make a full selection. A notable study ably presented was that of Dr. Robert Carrick, of Canberra, on the Internal Regulation of a Population of White-backed Magpies.

New techniques in field experiment were reported by some of the contributors, e.g. an ingenious method of altering the colour of eyelids in some of the northern gulls with consequent radical effect on the behaviour patterns.

Sound recordings and analyses thereof were widely used and some excellent papers were forthcoming on this subject. Special committees, including an international group concerned with bird banding, met during the course of the Congress and the evening film sessions and lectures were of a high order. No less impressive were the visits to institutions in the area such as the Ornithological Laboratory at Sapsucker Woods. This fine reserve was in fact visited every morning at daybreak by parties of members who returned to the Congress for breakfast at 8 a.m. Other and more extensive excursions were equally popular.

Printed summaries of practically all the papers were available and it is expected that the full report of the Congress will be available within a much shorter time than is usual with these international fixtures. I should perhaps add that in the week preceding the Congress I was able to attend in New York City a meeting of the International Council for Bird Protection and was there accredited as national representative from New Zealand. To this I am afraid my only contribution was a short and hastily prepared summary of recent developments in New Zealand in respect of the organising of conservation authority and the work of the Wildlife Branch, Department of Internal Affairs, with rare and vanishing species.

— R. A. FALLA

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# ITEMS OF SPECIAL INTEREST FROM THE 10th AND 11th ANNUAL REPORTS OF THE BANDING COMMITTEE

The tenth report deals with all birds banded and recovered between 1/4/59 and 31/3/60. A report on birds banded overseas and recovered in N.Z. is also included. The number of birds banded was 12,782, so that the grand total rose to more than 53,000. 81 species have now been banded in N.Z. Species banded for the first time were:— Silver-grey Fulmar, Spur-winged Plover, Antarctic Skua, S.I. Fantail, Redpoll and Rook.

The following are among the more noteworthy or significant recoveries:—

An adult White-capped Mollymawk banded off C. Campbell on 4/3/58 was caught off Port Nolloth, South Africa, on 3/5/59.

A Sooty Shearwater banded at Glasgow Island, Cook Strait, on 5/11/58 was caught in a fishing net off Hokkaido, Japan, on 20/5/59. 12 Gannets banded at C. Kidnappers (9) or White Island (3) as nestlings were recovered in Australia in their first or second year.

A Harrier banded at Tikokino was shot three years later near Invercargill.

Two Caspian Terns banded as nestlings at Palliser Spit in January were recovered in June of the same year in Manukau Harbour and at Gisborne.

After a gap of five years 5 White-fronted Terns were recovered in south-eastern Australia within a year of being banded as nestlings at Kaikoura (2), Miranda (2) and Crusoe Island (1).

Among the more valuable longevity records are:—

Two Light-mantled Sooty Albatrosses banded as adults at Campbell Island on 25/2/47 and recaptured there breeding in December 1959, nearly thirteen years later. A White-fronted Tern, banded at L. Ellesmere as a nestling in January, 1954, and found dead in August, 1959, at Port Phillip Bay, Victoria, Australia.

Three Silvereyes banded as adults at Mahina Bay in winter 1954 and retrapped at the same place in winter 1959. All must have been over five years old.

Eight Giant Petrels banded at South Shetlands (1), South Orkneys (1), Macquarie (4), Nellie Island, near Wilkes Station (2) were found in N.Z., one first year bird having travelled 6000 miles in about 3½ months.

The most surprising recovery of a bird banded overseas was that of a Grey Teal, banded at Lara, Victoria, in May 1957, and shot almost exactly two years later at Lake Whangape in the lower Waikato.

The eleventh report deals with birds banded and recovered between 1/4/60 and 31/3/61. A third category of recovery, a 're-trap,' has been introduced. A special study of the dispersal of Red-billed Gulls by means of colour-banding was started at colonies on Kaikoura Peninsula, Lake Grassmere, The Brothers, Stephen Island, Nelson and Kapiti. The scheme is planned to continue for another three years.

The number of birds banded was 18,070, so that the grand total then stood at 71,414. The number of species banded in N.Z. has now risen to 93. Species banded for the first time were:— Broad-billed Prion, Antarctic Prion, Hutton's Shearwater, Grey-backed Storm Petrel, Northern Oystercatcher, Black Oystercatcher, Sooty Tern, Morepork, Kingfisher, Skylark, Brown Creeper. Tui.

The following are among the more noteworthy or significant recoveries:—

A young Royal Albatross banded at the nest on Campbell Island on 17/11/60 was taken only three months later on 19/1/61 off Valdivia, Chile, 5000 miles E.N.E. This is the third recovery of a N.Z.-banded Royal Albatross in South American waters.

Two Cape Pigeons banded at the Tory Channel Whaling Station one on 27/8/58, the other on 8/6/59, were re-taken evidently at their breeding station at Signey Island, South Orkneys, 6000 miles distant on 9/11/60 and 17/10/60 respectively.

A Sooty Shearwater banded as an adult on Stephen Island on 25/1/60 was taken on a fishing line off Hokkaido, Japan, on 19/5/60.

15 Gannets from Cape Kidnappers (10), Horuhoru (3), White Island (2), were taken in Australia within six months of being banded as nestlings. The farthest traveller was banded at the nest on Horuhoru on 21/1/61 and found dead at Surfers, South Australia, only a month later, 2000 miles W.

Further evidence of the northward autumn migration of Caspian Terns is provided by a young bird banded at Palliser Spit on 8/1/59 and found dead at Gisborne. But some north-bred Caspians may wander south, as is shown by one which was banded as a nestling in Kaipara on 9/1/55 and was found dead on 3/10/60, nearly six years later, at the Wairau rivermouth, 350 miles S.

Longevity records deserving of mention are:—

Six of the C. Kidnappers Gannets are known to have been carrying bands for nearly ten years.

A Harrier banded at Tikokino (H.B.) on 25/5/54 was found dead 135 miles W.N.W. on 22/8/60.

Three Giant Petrels, banded as nestlings at Signey Island, South Orkneys, reached N.Z. within a few months.

A Tasmanian Muttonbird ringed at Babel Island, Tasmania, on 24/3/59 and stranded near C. Kidnappers on 26/12/59, has already been mentioned (*Notornis* VIII, 260).

— R.B.S.

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## REVIEWS

*G. W. Leeper (editor). The Evolution of Living Organisms* (Melbourne University Press, 1962; £A6/6/0).

In 1959 the Royal Society of Victoria celebrated a double centenary — the one of its own grant of royal title from Queen Victoria and the other of the publication of Darwin's *Origin of Species.* A symposium under the above title has now been published as a handsome book containing 36 articles by Australian and visiting biologists, the following being of special interest to ornithologists.

Ernest Mayr, official guest of the Society, gave the opening address — "Accident or Design, the paradox of evolution." Allen Keast, well-known to readers of the *Emu,* has a stimulating and comprehensive paper on "Vertebrate Speciation in Australia: Some comparisons between birds, marsupials, and reptiles," extending his conclusions on bird speciation dealt with fully in the *Bulletin of the Museum of Comparative Zoology* (1961). Professor B. J. Marples' "Observations on the History of Penguins" is a summary of his own and other work on the fossil penguins of New Zealand, Australia, Patagonia, and Seymour Island and includes discussion of loss of flight, and of the differences between the four subfamilies, of which one alone embraces all the living penguins.

— C.A.F.

*Subantarctic Campbell Island,* by Alfred M. Bailey and J. H. Sorenson. Proceedings Number 10. Denver Museum of Natural History. Distributed in N.Z. by A. H. & A. W. Reed. 72/6.

Despite the attentions of sealers and an attempt which lasted nearly forty years to turn its forty square miles into a sheep-run, Campbell Island remains comparatively unspoilt, a subantarctic treasure-house for the zoologist and botanist and especially for the bird photographer, for among its many 'big' attractions are three breeding species of penguins, five of albatrosses and three of seals. Following upon Kaj Westerskov's modest but informative 'Birds of Campbell Island,' we now have 'Subantarctic Campbell Island,' liberally, not to say lavishly, illustrated by one of America's most eminent bird-photographers and by several New Zealanders.

The book, however, is much more than a portrait gallery. The authors have been able to use the notes of members of the Cape Expedition and of meteorologists and naturalists who have followed them, so that the text provides data on breeding and studies on population which are of great value to student and conservationist alike. It is very pleasing to have included for comparative purposes Dr. Fleming's account of the Wandering Albatrosses of the Auckland Islands.

Not only breeding species but also migrants and stragglers are discussed and the list is lengthened by the inclusion of some rather unsatisfactory sightings. Quite unacceptable is the record (p. 257) of Hudsonian Godwit. This rare wader has by no means a 'uniform greyish plumage' but in flight shows a distinctive pattern of contrasting grey, white and black. Might the wader which flew off with 'yelping calls' have been a tattler? Was it really necessary to shoot the Spur-winged Plovers? Surely they presented no difficulties of identification. Perhaps had they survived, an insular race, adapted to subantarctic conditions, would now be evolving!

There is still much research to be done at Campbell Island, for example on its petrels and shearwaters, and the effect of rats and cats. Nevertheless it now has a book well worthy of its magnificent fauna and flora, an 'island book' that can be set beside Rankin's 'Antarctic Isle' and Stonehouse's 'Wideawake Island.' It would make an ideal prize for the young biologist or geographer. The question is:— "How many schools have a prize-fund which can afford it?"

— R.B.S.

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*Birds of Western Australia,* by D. L. Serventy and H. M. Whittell. 3rd edition. Published by Paterson Brokensha Pty. Ltd., Perth, W.A. £A2/10/0.

Though New Zealand and Western Australia are geographically far apart, they have many birds in common, tubenoses, shags, terns, herons, rails, migratory arctic waders, and even a few passerines and extra-limital stragglers. Since 1948 "Serventy and Whittell" has been one of the most helpful and instructive books on Australian birds. A second edition appeared in 1951 and now we welcome a third, with additional plates and drawings, and accounts of recent discoveries, irruptions and changes in status.

Tidily planned and authoritatively written, clearly and cleanly printed on strong paper, this handbook caters conveniently for the

field-worker. An excellent chart (p. 80) for the identification of storm-killed prions owes much to New Zealand research. The drawings (p. 185) done to show the plumage patterns of the Spur-winged Plover and allied species might one day be useful in New Zealand. The sketches (p. 188) of the heads of the three difficult migratory dotterels from Asia are helpful but not entirely convincing. But so wisely and thoroughly have the authors fulfilled their task that the voice of carping criticism is hushed. The book is a 'must' for the serious student of Australian ornithology; and the enthusiastic amateur could easily spend his money far less wisely than on acquiring a copy for his shelves.

— R.B.S.

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## PERSONALIA

Congratulations to Mr. Roy H. Traill, a foundation member of the Society, on being awarded an M.B.E. in the New Year Honours.

Several well-known ornithologists and writers on natural history have recently visited New Zealand and been entertained in one locality or another by several of our members.

Among the visitors have been: John Warham, R. M. Lockley, Gerald Durrell, Professor V. C. Wynne-Edwards, Lt. A. Y. Norris, R.N., from Britain; Jan Strijbos, from Holland, and Jean Delacour, from France and U.S.A.

21 Australian and one N.Z. members of the R.A.O.U., with the President and Brian Bell as guides, toured New Zealand during October-November, 1962. The tour was most successful. The visitors logged 114 species. In a number of centres members of the O.S.N.Z. were able to meet fellow bird-watchers from across the Tasman.

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## OBITUARY — A. S. WILKINSON

Alexander Stanley Wilkinson, whose death occurred at Levin on December 28th, will be remembered in New Zealand ornithological circles as the cutodian of Kapiti Bird Sanctuary whose untiring work on that sanctuary ensured its reclamation from the ravages of browsing animals.

When he took up his duties on the island in 1924, it was over-run with wild goats and sheep and it was during the eighteen years of his stay on the island that it was freed from these animals, which had eaten out the undergrowth from much of its area.

With the help of a trapper and others, at least 300 goats and 1500 sheep were destroyed. This campaign, with those accounted for before he took over in 1924, removed a very serious threat to the future of the island as an effective sanctuary.

Mr. Wilkinson had a deep interest in the native birds and plants and throughout his residence on the island he took notes of the habits and occurrence of the birds of the island and its waters. In collaboration with his wife, he published, in 1952, in book form, under the title of "Kapiti Bird Sanctuary," a summary of his observations. This book was illustrated with many fine photographs taken by himself

and by his even more skilful wife. Their photographic achievements included a picture of a Whitehead feeding a young Long-tailed Cuckoo in a Whitehead's nest.

Mr. Wilkinson was a member of the Royal Australasian Ornithologists' Union for more than forty years, for much of that period as a member of the council representing New Zealand; and was a foundation member of both the Forest and Bird Protection Society and the Ornithological Society of New Zealand. He was a member, too, of the Royal Society of New Zealand for a great many years. He was awarded the Silver Jubilee Medal in 1935 for his work on the island. He is survived by a son and two daughters.

The present flourishing state of the Kapiti bush and sanctuary stands as a memorial of his work and it is fitting that his ashes and those of his wife are to find a last resting-place on the island that they both loved so well.

— R.H.D.S.

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## RECORDING SCHEME

A note in *Notornis X*, 128, announced that Classified Summarised Notes would no longer be published as such, explained the considerations which led Council to make this decision, and mentioned the inauguration of a Recording Scheme. The following is a short explanation of how it is proposed to work the Scheme, and what service it can be expected to provide.

The intention is that the Recording Scheme shall function as a Central Registry of unpublished ornithological information. The scheme as conceived has a dual purpose, firstly to ensure that all available information is recorded and nothing lost, and secondly to encourage co-operative field study of New Zealand birds and to co-ordinate the results of field work in different parts of the country. Instead of piecemeal publication of minor items, these will be recorded within the framework of the scheme, on species files which will be kept in triplicate. As soon as sufficient material has been gathered on any given species, steps will be taken to have it summarised for publication. As time goes on the gaps in our recorded knowledge of distribution and behaviour of certain species will become increasingly obvious, and positive steps can then be taken to close the gaps. When special enquiries are undertaken by the Society the scheme will be in a position to act as clearing house for the collection of information. Members working on specific subjects will of course have access to all relevant material collected under the scheme.

It is hoped eventually to extend the scheme to include locality lists, lists of museum accessions, whereabouts of study skins and mounted specimens of rare birds, etc. If the scheme works as planned it should be of considerable value to the Society. Its success will depend on the support of members who provide the material, and on the extent to which members use the scheme to obtain information which they require.

The present system whereby R.O's. collect, classify and send notes to the Editor once a year, is well established and should continue.

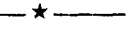
The Editor will extract from material received such items as are considered suitable for publication as Short Notes, and the balance will go to the Recorder for the species files. The 1962 batch of notes has been received and will now be recorded. A considerable amount of information extracted from private letters and replies to R.O. circulars is already on record, and this includes a few useful locality lists compiled by regional parties on field days, etc. All available notes on the 1962 dispersal of Royal Spoonbill, White Heron and Little Egret have been sent for summarising.

Many useful notes lie dormant in the notebooks of individual members. Notebooks may be mislaid or accidentally destroyed and their valuable contents lost for ever. If members care to send in their notes, past or present, they will be listed, indexed, filed and preserved. Several senior members have already agreed to provide such material and it is hoped that more will do so as time goes on. Some members are gathering notes with a view to eventual publication. If publication is likely to be long delayed, it is suggested that as a precaution, copies of these notes might be deposited with the Recorder in case the originals are lost; they could if necessary be marked " Not for publication without consent of originator."

An Annual Report on the progress of the scheme will appear in *Notornis,* listing the names of those who have supplied material and indicating localities and species on which further information is urgently desired.

As Recorder, I would welcome any suggestions for increasing the scope or improving the working of the scheme. The more notes that are sent in, either through R.O's or direct to me, the better the scheme will work. At this end I will do my best to ensure that the records are well kept. I ask for the co-operation of members in providing material to make the scheme a comprehensive and worthwhile asset to the Society.

— A. T. EDGAR



**NEW MEMBERS** to 25/1/63

Baker, R. R., 55 Moa Street, Taihape
Barnett Miss M. F., 71 Ocean Road, Paraparaumu Beach
Bateman, Robert, Brookby, R.D.2, Manurewa
Calvert, D. E., Riverview, R.D., Kerikeri
†Clark, C. M., 38 Hillary Crescent, Upper Riccarton, Christchurch
Connolly, J. T., P.O. Box 521, Christchurch
Cragg, Allan, 1 T.V.E.P.B. Blk., Main Taupo Road, Tokoroa
Cragg, Miss P. J., C/- Mr. Allan Cragg, 1 T.V.E.P.B. Blk., Tokoroa
Darby, J. T., Dept. of Zoology, University of Canterbury, Christchurch
Dawson, Miss R., 27 Per Street, Richmond, Christchurch
Denny, Miss A. N., 34 North Street, Te Awamutu
Dorward, Dr. D. F., Dept. of Zoology, Monash University, Clayton, Victoria, Australia
Emmens, Keith, 119 Nayland Street, Sumner, Christchurch, 8

George, Keith L., 263 Elliott Road, New Plymouth
Goffin, R. B., 76 Witako Street, Lower Hutt
Graham, Mrs. E., 52 Celia Street, Redcliffs ,Christchurch
Gunson, G. F., "Ngaruru," P.O. Box 8, Onga Onga, H.B.
Hamilton, W. G., 80 Shelly Beach Road, Herne Bay, Auckland
Harris, L., 68 Colenso Street, Sumner, Christchurch
†Hawkes, G. M., 195 Great North Road, Grey Lynn, Auckland
Hill, Miss E. M., "Oldeburgh," West Coast Road, R.D. Oratia
*Hood, J. B., Private Mail Bag 26, Joanna, Via Naracoorte, South Australia
Horne, Peter, 808 Matai Street, Hastings
Huffadine, A. S., 354 Elles Road, Sth., Invercargill
Lacey, A. R., Monrad Street, Palmerston North
†Langbein, Dr. I. E., 276 Nayland Road, Stoke, Nelson
Lawrence, Mrs. A. C., 29 Weka Street, Fendalton 4, Christchurch
Lindsey, Terence, C/o Hudson's Bay Company, Thompson Townsite, Manitoba, Canada
Mawson, W. R., Brookside, R.D., Leeston
Merton, Miss J. G., Hunua, R.D.3, Papakura
Merton, Mrs. N., Kiri Kiri Hill, R.D. 2, Papakura
McKain, G. H., 99 Chalmers Road, Gisborne
MacKenzie, Roderick, C/- Mr. N. B. MacKenzie, Pakowhai, R.D. 3, Napier
O'Brien, J. F., Wildlife Branch, Internal Affairs Dept., Private Bag, Wellington
Officer, Brigadier H. R., Olinda, Victoria, Australia
Ohman, C. G., C/o I. O. *Mekaniska, Bankeryd, Sweden*
Payne, Robert, 281 Richmond Road, Auckland, W.2
Peace, Colin, 145 Seddon Road, Hamilton
Pengelly, W. J., 42 Smithfield Road, Wanganui
Peterson, Ian, 2 Bridge Street, Opotiki
Rann, C. F., 46 Maraetai Village, Mangakino, via Hamilton
Reid, Brian, C/o Mr. C. A. LeLievre, R.D. 3, Whakatane
†Satherly, R. E., 30 Parnwell Street, Burwood, Christchurch 6
*Schreiber, Mrs. M., Rangiwai Road, Titirangi*
Shailer, L. C., P.O. Box 5, Rongatea
Smart, Russell, The Spur, Clifton, Sumner, Christchurch
Smith, T. M., 128 Margaret Street, Invercargill
Taylor, Mrs. H. J., Strathearn, Wairua R.D., Clinton
Taylor, R. J., Beach Road, Haumoana, H.B.
Teague, Bernard, Wairoa, Hawke's Bay
Thomas, R. N., 27 Holly Street, Auckland, S.W.3
Timlin, J. G., 55 Wilfrid Street, *Invercargill*
University of Alberta, (Library, Periodicals Dept.), Edmonton, Alberta, Canada
Veitch, C. R., Wildlife Branch, Dept. of Internal Affairs, Private Bag, Wellington
*Wettenhall, Dr. N., 14 Lascelles Avenue, Toorak, S.E.2, Victoria, Australia
Whateley, John, Houchen's Road, No. 2 R.D., Hamilton
Zumbach, D., 18 Collingwood Street, Nelson

* Life Members

† Endowment Members

# NOTICES

## XIV INTERNATIONAL ORNITHOLOGICAL CONGRESS

Preliminary Announcement

It was decided at the close of the XIII International Ornithological Congress at Ithaca, N.Y., that the next Congress would be held in Great Britain in 1966, with Dr. David Lack as President. At a meeting of the British members of the International Ornithological Committee, Dr. N. Tinbergen was elected as Secretary-General and, after full consideration of various possibilities, it was decided to hold the Congress in Oxford. A British Executive Committee was formed.

In view of the decision of the full International Ornithological Committee that there was no need to hold the Congress in the breeding season (the intention being that, if practicable, it should be held outside the breeding season), the British Committee decided that the meeting should take place in late July. It is not possible to meet in Oxford during August.

In view of the further decision of the full International Committee that the 1966 Congress need not be preceded nor followed by excursions, the British Executive Committee decided that, if it proved practicable, only one excursion would be organised — a week's cruise of Scottish sea-bird islands in a ship of sufficient size to accommodate most members of the Congress. The provisional dates are: 16th - 23rd July, 1966, for the cruise, and 24th - 30 July for the meeting in Oxford.

The British Executive Committee gratefully acknowledges a cheque for $200 already received from the American Ornithologists' Union towards the cost of the next Congress. If other countries wish to contribute, cheques should be sent to the Treasurer (Mr. A. G. S. Bryson), 7 Forres Street Edinburgh 3.

## ANNOUNCEMENT

The South African Ornithological Society intends to organise the Second Pan-African Ornithological Congress from 21st to 25th September, 1964. The Congress will be held at Pietermaritzburg, Natal, and will be preceded and succeeded by excursions. Further particulars will be announced later. Interim enquiries may be addressed to:

The Honorary Secretary,
South African Ornithological Society,
C/o Percy FitzPatrick Institute of African Ornithology,
University of Cape Town,
RONEDOSCH, C.P.
South Africa.

## REQUEST FOR INFORMATION

Mr. G. A. Tunnicliffe, University of Canterbury, Christchurch, is making a study of the Pukeko and would be grateful to receive information on its breeding, distribution and general habits.

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Beach Patrol Records for 1962 are now being analysed. Would people who have not sent in their 1962 records kindly do so as soon as possible. Anyone with records which formerly would have gone into Short Notes should send such records to the undersigned.

B. W. BOESON, P.O. Box 30, Carterton.