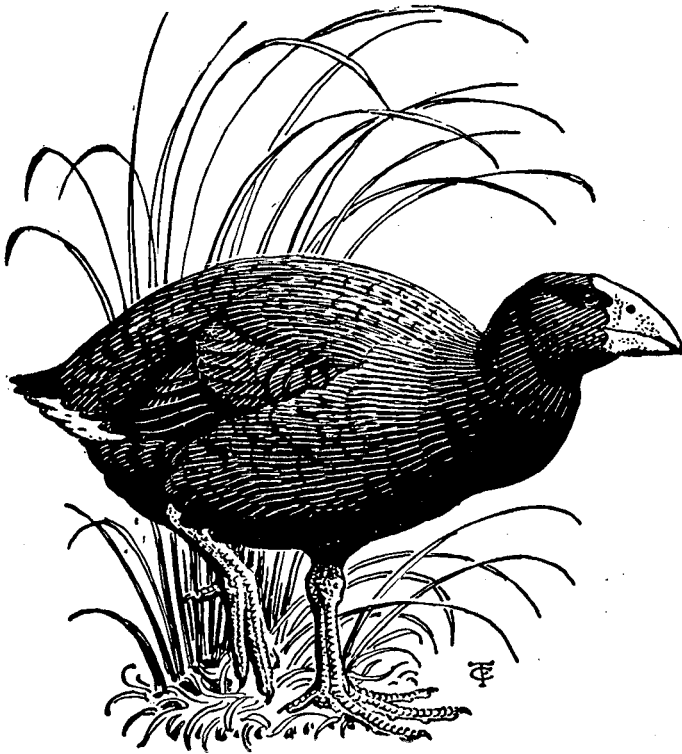


NOTORNIS

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The Ornithological Society of New Zealand*



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NOTORNIS

In continuation of New Zealand Bird Notes

BULLETIN OF THE ORNITHOLOGICAL SOCIETY OF NEW ZEALAND
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NOTORNIS

VOLUME SIX, NUMBER SIX : OCTOBER NINETEEN FIFTY-FIVE

MEMBERSHIP OF THE SOCIETY

An extract from the address of the President, H. R. McKenzie, at Dunedin

The rights and duties of the member are clearly and simply set out in the Constitution of the Ornithological Society of New Zealand. It is therefore proposed to deal no further with these, but to consider how each and every member can help the Society, help fellow members, enjoy the fun and interest in bird-watching, and create respect for this pursuit in public opinion.

Each member can help the Society. In his presidential address last year Mr R. B. Sibson stressed the importance of the part played in bird-watching by the amateur. Nearly all of our members are amateurs. Happily relations with the professionals, as Mr Sibson observes, are mutually cordial. A common loyalty to the Society is one of the greatest factors in ensuring success. Like the shareholders in a company each member puts in some capital. It may be in the form of scientific knowledge, the exploitation of some special opportunity, talent in art, photography or writing, the ability to note humble and common birds, the patience to secure by tireless vigil results valuable to all, the giving of services in organization and administration — all for the Society.

Help for our fellow members can take many forms. Some provide transport, some hospitality, some are free with their books, with help for the beginner, training for a group of watchers, or of individuals placed in specially favoured areas and anxious to learn. Travellers can make special efforts to meet members wherever they go, to their mutual benefit and pleasure. Many members have dropped out because of lack of contact with others, but where friendly help has been at hand this has not only been averted but prominent workers have been secured.

Membership is not of much use to anyone unless pleasure and interest are found in this hobby. People are not expected to support the finances of the Society as a kind of duty. Those who can go out into the field alone, or in parties, can study a wide range of birds, while those who are less able to get about can often take up special work on the common birds of the garden.

Respect for this pursuit is certainly growing. When members are seen travelling long distances regularly to study certain areas the general public is at first perhaps a little amused and scornful, then mildly curious, and, after hearing the aims and objects explained, quite approving and helpful. Many people who are not members go to much trouble to report matters of interest to their local bird students. Social and other bodies are now asking for bird pictures and talks. Vandalism is on the wane. Wanton destruction does not readily occur where watchers are working. In certain Government Departments there are keen and able members whose influence is helping to bring the Society into prominence. So is the pursuit of ornithology receiving a higher and higher measure of respect from the public.

It is therefore evident that there is no more important person than the working member, the 'Tommy Atkins', who is loyal to the Society, helpful to his fellows, enjoying the fun and interest of the game and putting this science on a high plane in public opinion.

ELEVENTH INTERNATIONAL ORNITHOLOGICAL CONGRESS

By E. G. TURBOTT

I attended the Congress at Basle, in Switzerland, from 29 May to 5 June 1954 as the Society's delegate. In addition to the ornithologists whom I had met in Britain since my arrival, I was glad to find that Mr J. M. Cunningham, and Dr L. E. Richdale, who is still working at Oxford, were to be members of the Congress.

The programme had been arranged to allow the maximum of time — two days and a half out of seven — for the extremely interesting Congress excursions to Mt Pilatus and to Berne and the Jura, while the meetings and discussions maintained a strenuous pace throughout. An afternoon was left free for a visit to the exceptionally fine Zoological Garden, which is noted for its ornithological collection and rare mammals. More extensive tours to various areas in Switzerland were available before and after the Congress; and several exhibitions relating to ornithology had been arranged — in the Museum of Natural History and Museum of Ethnology, a gallery display of bird paintings and designs by a group of artists, and bookshop displays of ornithological literature.

In spite of the full programme, a number of members spent the period between 5 a.m. — or even 4 a.m. — and breakfast in early morning excursions in the neighbourhood of the city, where about a hundred species of birds could be seen. These excursionists often arrived at the University hall — evidently breakfastless — just in time for the first paper of a full day's programme.

After a memorable opening by the President of the Congress, Sir A. Landsborough Thomson, who spoke on 'The Place of Ornithology in Biological Science', the Congress settled down to a programme consisting in the main of sections, dealing with various topics, which proceeded simultaneously. However, several 'full sessions' were included, and these were welcome as they enabled the tempo of the programme to be varied. Full sessions were held in 'Hearing and Voice' and on 'Biology of Penguins', and there were in addition three evening film sessions. Among a number of films were two by Mr Peter Scott and Dr R. T. Peterson respectively. My contribution on *Notornis* was included, Dr R. A. Falla's colour film being shown as well as my own. I might add that the session on penguin biology was especially remarkable for the fine films taken by Dr W. J. L. Sladen (Falkland Islands Dependency Survey) and by several members of the French Antarctic Expedition to Adelle Land.

Apart from the general sessions mentioned above, the greater number of papers were given under the following five section headings: (1) Evolution and Systematics; (2) Migration; (3) Biology and Behaviour; (4) Ecology and Faunistics; (5) Anatomy and Palaeontology. A joint session of the Ecology and Systematics sections was also held. As two or more of these sessions were always in progress, it was necessary to map out a programme. Sessions which I attended included most of those on evolution and systematics, and ecology. A session of particular interest in the ecology section was one including Professor J. B. S. Haldane's outline of the mathematical background for the calculation of death rates from bird-ringing data, and an address by Professor V. C. Wynne-Edwards on the regulation of population size in sea birds. There was also an interesting paper in this section by Dr J. C. Smyth (Edinburgh) on 'The Study of Wading Birds in Relation to the Ecology of the Sea Shore'.

The sessions on evolution and systematics included a paper by Professor C. G. Sibley, of Cornell University, on the significance of hybridization in birds; and a paper by Dr C. Vaurie on 'pseudo-subspecies', i.e. separate species, differentiated both ecologically and morphologically, revealed when certain continental polytypic species are re-examined.

Included in the section on biology and behaviour was Mr J. M. Cuning-

ham's interesting discussion of a method of showing diagrammatically seasonal variation in bird song. In the session on Hearing and Voice, a demonstration was given by Dr W. H. Thorpe of bird song as recorded by the sound spectrograph.

The volume of Proceedings of the Congress, containing the text of all contributions to the above sessions, is awaited with keen interest.

On my return through Paris, I was pleased to visit the reading room of the Société Ornithologique de France in the Natural History Museum, at the invitation of M. Chr. Jouanin and M. R. D. Etchécopar. The journal of the French Society is received in exchange for *Notornis*, and much interest was expressed in the progress being made in our work in New Zealand.

A NEW BIRD FOR NEW ZEALAND

GULL-BILLED TERNS (*Gelochelidon nilotica*) NEAR INVERCARGILL

By H. R. McKENZIE

The first record of this species for this country was made at the Invercargill aerodrome on 26/5/55. A party consisting of Mrs Olga Sansom, Mrs McKenzie, Mr Brian A. Ellis and the writer was studying a group of godwit, South Island pied oystercatcher, and Red-billed and Black-billed Gulls, resting and feeding on the short-turfed airfield, when a strange tern flew in. It was soon joined by another of its kind. The two cruised about in low undulating flight above the other birds. They settled occasionally for short periods, enabling the party to get splendid views at twenty-five yards with telescope and binoculars. All birds are zealously protected here by the airfield staff and are consequently very tame. Those mentioned above were almost under the eaves of the buildings and were just through a fence from our vantage point in a car.

Adopting the recognised method of dealing with a bird new to the watchers, one of the party took down notes while the others worked together, describing each prominent feature from the bill to the end of the tail. Bill totally black; cap black and defined, the black including the eye and coming down on to the bill and nape, but not low on hind-neck as in the white-fronted tern; one of the two had tiny white flecks in the black of its crown; upper wings pale pearl grey; ends of wings or primaries darker; tail, rump and back all white; under surface white, the dark of the primaries showing through; fork in tail shallow, about one inch deep, in flight spreading nearly square at times; feet totally black; size, larger and more solidly bodied than White-fronted tern (*S. striata*), considerably smaller than Caspian Tern (*H. caspia*). The wings appeared long in proportion, but this may have been due to their being more or less parallel-sided in comparison with other species. The unusually long legs of this tern were not noted at the time, but this feature was remembered later. The writer was surprised that the bill was in proportion and did not look unduly heavy.

Dipping down among the other birds, the two terns fed from the short-grassed field, sometimes jostling gulls when they appeared to have found food. One was seen to pick up a worm and to swallow it as it lifted again. In feeding they touched the ground only with the tip of the bill. The habit in this species of commonly feeding over pasture, marsh and still water helps to separate it from the sea-feeding terns, the manner of inland feeding being somewhat similar to that of the White-winged Black Tern (*C. leucopterus*), which occurs rarely in New Zealand. The next day the two terns were seen again and Mr Ellis has lately reported them as present on 22/7/55. It is earnestly hoped that they are a pair and will breed in one of the many marshy areas nearby.

This species is widely distributed in the temperate zones, to some extent in the tropics, but not in the colder regions. It breeds according to the conventional seasons north or south of the equator. Several subspecies are described. The Australian one is named *Gelochelidon nilotica macrotarsa* and

it occurs throughout the country except for the south-west, though apparently only sparsely in Western Australia and Tasmania. It may be expected that the two Invercargill birds would belong to this race. Some useful information on the status of the Gull-billed Tern in New South Wales is given by Keast (*Emu*, 43, p. 180) and McGill (*Emu*, 45, pp. 84-85).

TAKAHE RESEARCH 1954-1955 SEASON: A SUMMARY

By J. G. KENNEDY,* *Wildlife Division*

The study period on this occasion was a continuous one lasting from 30 November 1954 to 23 January 1955 — that is, approximately eight weeks. There were two parties, each composed of two observers — Party No. 1 (J. G. Kennedy, Field Officer, and G. R. Williams, Biologist) was in the area from 30 November to 5 January; Party No. 2 (M. M. Small, Field Officer, and K. H. Miers, Biologist) arrived on 3 January and left on 23. Accompanying this party for one week was Mr I. C. McKellar, Geological Survey, D.S.I.R., who, in the course of doing his own work, very kindly assisted in the banding operations.

The aims before both study groups, outlined earlier by one of us (G.R.W.), in brief, were these: that, over an extended period of about three months, the degree of nesting and rearing success should be carefully ascertained — especially insofar as these might be affected by possible predators and competitors which were not to be disturbed during this time; and that banding and general observations should be continued, to the fullest extent possible without unduly disturbing breeding birds and nestlings. These aims were fairly fully realised and the object of this report is to give a brief account of results which are to be published in detail after the outcome of the 1955-56 breeding season has been studied.

DURATION OF THE BREEDING SEASON

It was clear that incubation was already well advanced in most nests by the beginning of December. Of the eight nests found that contained — or had contained — eggs, five had chicks hatched from them before mid-December. One nest contained a pipping egg on 21 December and another contained a fresh egg on 4 January. (This last was probably a result of re-nesting.) Judging from the age of some of the chicks, laying apparently began about the end of October and, from the nest described above, had occurred at least as late as the beginning of January.

LOSSES CAUSED BY DESERTION, ET CETERA

Two nests, each containing one egg, were found deserted, and in two more nests, from each of which one chick had hatched, the remaining egg was deserted. In three of these four cases the remaining egg was later found destroyed — probably by the takahe themselves. Another nest which had apparently never contained an egg was incubated for about a month.

CHICK SURVIVAL

At one time or another eight (less probably, nine) different chicks were accounted for (two coming from nests that were not found). Of these chicks, four (or probably five) were in Takahe Valley and four in the Point Burn. By late January only six of these could be traced with any degree of certainty. We know that seven of these chicks were surviving for minimum periods varying between two and six weeks. As far as this season's nests or chicks are concerned we found no direct evidence that possible predators or competitors had affected either unfavourably in any way. (Stoats, deer, opossums, harriers and wekas were all seen in the study area.)

BANDING OPERATIONS

(1) *General*: Twenty-four birds were caught and banded, nineteen for the first time. A total of 29 takahe have now been marked with a combination

*Killed by an avalanche in the Dobson Valley 4/8/55.

of numbered aluminium bands and coloured plastic bands and five more birds are unaccounted for that should bear plastic bands only. Four takahe marked with aluminium and plastic bands during the 1953-54 season were not recorded during our stay in the area, but there is good reason to believe that at least two of these were still surviving in mid-January as two unidentified birds bearing aluminium bands were seen but not captured. Because we now know that the unmodified plastic spiral or wrap-on bands may be readily lost (although some have lasted in the field for just over two years) it is very likely that the five takahe still unaccounted for that were banded with plastic rings in 1952 may never be traced. In fact, it is not improbable that some of them may have already been rebanded. In an attempt to cut down this loss, a plastic cement was used to close wrap-on bands used this year. It is too early yet to judge the extent of any improvement made. A further difficulty is that colours have shown a tendency to fade to such an extent that fleeting sight records might not be reliable. To avoid this, colours not likely to be confused with each other under these circumstances will be chosen in future.

(ii) *Breeding age*: Another prima facie case of takahe breeding in their first year is afforded by the instance of a bird caught and marked as an approximately three-month-old chick in February 1954 being twice captured with one other adult guarding a chick of about one month of age in January 1955. This family group was also identified by band sightings on a number of other occasions.

(iii) *Movements*: Present information indicates that, as a general rule, takahe take up breeding territories close to, or nearly identical with, those occupied in the previous year. It is obvious that there must be exceptions to this rule and one is known of a bird that, banded as a chick in one breeding territory, has been recorded in two different and relatively distant territories in each of the two subsequent breeding seasons.

Some idea has been obtained of the considerable extent of movement of individual birds or family groups that may occur from day to day. More information is needed on this subject, but the difficulties of observing and identifying the birds in the thick snowgrass make the collection of these data slow and rather tedious.

(iv) *Pair formation*: Three instances are known of birds changing mates in different breeding seasons. It is not possible to be certain at present whether the original mates were surviving at the time the new pairing occurred.

Now that what must be a considerable proportion of the takahe inhabiting the two main colonies has been banded, some extremely interesting results may be expected from future study periods. Among other things it may be possible under certain conditions to estimate the total population size by using a modified Lincoln-Petersen index, and, of course, raw material for a life-table study of the species is now in existence and will be added to continuously. There is no indication that properly fitting bands are causing the birds any discomfort or inconvenience.

Other birds banded: Wekas and keas in Takahe Valley are being banded with numbered aluminium and coloured bands as opportunities arise. So far, three wekas and one kea have been so marked.

MEASUREMENTS, ET CETERA

All birds captured during the last two seasons have been weighed, various standard body measurements taken and the appearance of the plumage and soft parts noted. Because the sexes are so similar in plumage, colour of the soft parts and size, discrimination between them has depended in the past solely upon supposed behaviour differences and this method has never been satisfactory. Now one of us (G.R.W.) has suggested a technique (using a combination of weight and culmen measurement) which seems reliable for sexing captured adults. However, it will be subjected to further testing during the next breeding season and this in turn should throw more light on the extent of sexual differences in behaviour. By means of the plumage and

soft parts study it is hoped that the technique for ageing the birds will be much improved, too.

GENERAL OBSERVATIONS

Information on various aspects of takahe behaviour such as copulation, feeding habits and calls, and territorial fighting between takahe themselves and takahe and wekas has been added to and will be discussed at the end of another season's work. As the opportunity has arisen observations have been made on the behaviour of other species that may perhaps play a significant role in the ecology of the takahe. For example, during the breeding season confusion may arise – unless care is taken – between at least two of the calls of takahe and weka, especially as wekas very frequently answer takahe. Confusion of these calls could cause misinterpretation of the significance of behaviour, and re-reading of some observations that have already been published suggests that such misinterpretation has occurred in the past.

DEER AND TAKAHE (K. H. MIERS)

Although deer do not seem to be significant competitors with takahe on the valley floors where *Danthonia rigida* is dominant, in the head basins where feeding and nesting requisites of takahe are at a critical level the modification of the vegetation being brought about by deer is a cause of some concern and should be carefully watched. In May 1954 deer heavily grazed small areas of *Danthonia flavescens* on the bench in the head basin of Takahe Valley, where a pair of birds are believed to have nested in previous years. This summer the extent of the heavy grazing was considerably greater – so much so as to deplete seriously the amount of *D. flavescens* available to the birds. Experience has shown that presence of this species in a flourishing state is almost certainly an important element in site selection by nesting birds in such areas, and in almost every head basin examined the presence of takahe sign is associated with the distribution of *D. flavescens* rather than that of any other species of plant in the subalpine zone. Checks on the extent of the utilisation by deer of various plants, including *D. flavescens*, are being maintained.

A CASE OF ASPERGILLOSIS IN THE BLACK-BACKED GULL

By G. R. WILLIAMS, Wildlife Division

In April this year an honorary ranger of the Wellington Acclimatisation Society reported seeing a number of dead Black-backed Gulls (*Larus dominicanus*) on the Shendon Golf Links near Trentham. A specimen was obtained and sent to the Wallaceville Animal Research Station, where the cause of death was found to be aspergillosis. According to the Diagnostic Officer's reports 'examination of the bird showed a heavy growth of moulds on all the airsac membranes and accumulations of caseous material in all the cervical airsacs. The mould was also recovered from the lungs, although macroscopically they appeared normal. The caseous material was full of mycelia. The mould has been confirmed as *Aspergillus fumigatus*.' No other specimen has since been submitted for examination, but it is presumed that the other gulls had died of the same disease.

This observation is worth recording as it is apparently the first of aspergillosis being found among a wild population of birds in New Zealand, although the disease has been reported from a number of wild species overseas. In North America it has been described from four species of gull: the Herring gull and Thayer's gull, *Larus argentatus smithsonianus* and *L. a. thayeri* (Davis and McClung, 1940; Cowan, 1943; and Beaudette, 1945), the Glaucous-winged Gull (*L. glaucescens*) (Herman and Bolander, 1943), and Western and Californian Gulls (*L. occidentalis* and *L. californicus*) (Herman and Rosen, 1947).

Other wild species in which infection has been reported include – from North America – the American coot, *Fulica americana* (Gullion, 1952), the Snowy Owl, *Nyctea scandiaca* (Meade and Stoner, 1942), and various waterfowl (Bellrose, Hanson and Beamer, 1945); and, from Europe: the Mute Swan, *Cygnus olor*, the Pheasant, *Phasianus colchicus*, the Jay, *Garrulus glandarius*, and the Waxwing, *Bombycilla garrulus* (Christiansen, 1949).

Known also as mycotic pneumonia and brooder disease, aspergillosis is – in other countries – the commonest fungous disease of game farms, where, apparently, it is usually fatal. However, relatively little is known of its incidence in wild populations. An excellent account of the disease and its symptoms may be found in Biester and Schwarte, 1952.

I am grateful to the Diagnostic Officer of Wallaceville Animal Research Station for giving me the information upon which this note is based and to Dr R. W. Balham and Mr K. E. Westerskov for making available to me some references on aspergillosis.

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SOME NOTES ON THE BLACK-BILLED GULL (*Larus bulleri*) AT LAKE ROTORUA, WITH SPECIAL REFERENCE TO THE BREEDING CYCLE

By M. S. BLACK

The Black-billed gull breeds on the volcanic plateau, and probably one of the largest known colonies of this species in the North Island is sited on a low reef of silica rock which juts into Sulphur Bay, an arm of Lake Rotorua, immediately to the east of and approximately 200 yards from the Ward Baths. Offshoots of this colony also breed on the several small islets and rocks at the approaches to the bay, in one or two suitable localities within the Whakarewarewa Reserve, and at Lake Rotomahana. Doubtless there are other small colonies nesting in isolated areas in this region. R. B. Sibson (Bull. No. 2, pp. 7-8) mentions in his review of this species, 'a rather inaccessible lake on Mount Tongariro where "small" gulls nest . . . these might well be *Larus bulleri*.' However, the purpose of this article is to deal only with the Rotorua colony as this is the one that I am most familiar with.

Generally speaking this gull is present here all the year round, a few stragglers remaining over the winter months after the exodus of the main body, which usually, though not habitually, takes place between mid-April and the end of May. Indeed the numbers fluctuate considerably throughout

the year, and sudden irruptions may occur at any time. In June 1952 and July 1954 counts of 200 plus and 160 plus respectively were made, and for a few hours on each occasion the reef was white with gulls, and the noise deafening. Then they are gone as suddenly as they came. All very puzzling these unseasonal irruptions. With regard to the autumn migration, the diminution in numbers at Rotorua is not markedly noticeable until mid-May, and by the end of that month only stragglers remain. By that time the Redbill (*L. n. scopulinus*) irruption from the sea has ended, and the presence of the Black-bill here is easily overlooked. Very rarely does one encounter this bird in the streets of Rotorua, where the Redbills are in great force. A few Buller's gulls take to scavenging, but practically all the birds seen in the town, clustered in front of the places where they are fed daily, are Redbills, for this species is a notorious scavenger.

The wintering ground of the Rotorua Black-bills is not known for certain. Some observers believe that the bulk of the birds which regularly, year by year, congregate on the shores of the Firth of Thames are Rotorua migrants. In this I agree with them, but am of the opinion that part of the migrational movement is eastwards to the Bay of Plenty. The only way to elucidate this mystery is by 'banding'. Since the 1951-52 breeding season this has been impossible because of the wanton destruction of the gull colony by vandals, and in a lesser degree by dogs and vermin. During that season E. G. Turbott and the writer banded some thirty-odd chicks, but up to time of writing — 1/6/55 — none of these banded birds has been recovered. Many more could have been 'ringed' during the season under review were it not for the nature of the terrain. To approach the site of the colony from landward on foot, or by boat from the lake, unobserved by the breeding gulls, was quite impossible. Immediately the intruder is spotted the old birds hustle the chicks into the water and shepherd them well offshore. These chicks of course are the ones we want as they are old enough for 'banding'. The innumerable 'nestlings' which are too young to escape are also too young to ring.

The Red-billed Gull also nests with the Black-bills, but is an earlier breeder, from two to three weeks as a rule. This species appropriates the best nest sites, which include three small rocky islets off the end of the reef, and it is amazing how many nests the small area of these islets will accommodate. Last season, 1954-55, the count was 70 nests, the terrain being completely covered with brooding gulls. Unfortunately, not one chick from this congregation even left the nest! All were ruthlessly destroyed by humans. A few pairs made a further effort to raise a brood, but harriers and Black-backed gulls wiped them out. During this period the Black-bills (c. 150 nests) were also destroyed by the same agency. Owing to the proximity of the breeding site to the Government gardens and Baths, and as it is within the boundaries of the borough of Rotorua, the colonists are frequently subjected not only to deliberate persecution by vandals, but also from well-meaning but thoughtless people, mostly tourists, who out of curiosity disturb the brooding birds, maul eggs and chicks, take photographs and generally disrupt the even tenor of this avian household. Canines loom large on the list of predatory quadrupeds, killing chicks, treading on eggs and barking, terriers and gun dogs being the worst offenders. Feral cats and their domestic congeners, stoats, harriers and black-backed gulls do some harm, but humans and dogs are the gulls' worst enemies. Both Black-billed and Red-billed Gulls are protected by law. After the autumn exodus, the vanguard of the Black-billed colonists reappears in August. From then onwards to October and early November contingents arrive to swell the ranks until the numbers present reach a total of from 500 to 700 gulls excluding half that number of Red-billed Gulls which remain to breed after the wintering population of this species has departed for its coastal breeding grounds.

But it is practically impossible to assess the full numerical strength of either the combined or individual species, as a great number of both Red-bills and Black-bills are non-breeders. Nest counts I have realised are no criterion of a true census of a colonial bird population. However if an accurate count

of nests is made we know that, say, 150 occupied nests means 300 owners. During the day great numbers go inland to feed, many feed and procure food for their offspring over many square miles of lake surface, and there are to my knowledge three large roosting sites around Sulphur Bay, besides the colony under review. The most successful season for many years was that of 1951-52, when the count of Black-bill nests was 220, plus about 70 Red-bills, these latter occupying the islets already mentioned and also a part of the extreme eastern end of the reef. After the arrival of the main body the next phase is the claiming of territory. This is the occasion for much squabbling, bickering and general clamour. Every bird tries to outdo the other in a regular screeching contest reminiscent of a crowd of humans at a bargain sale. This goes on for several weeks before any attempt is made at nest-building. Then on a day in the middle of October, the colony suddenly becomes a hive of industry, and the air is alive with gulls carrying building material to the site and returning for more. To and fro, to and fro! After the nests are completed there is a lull, and a period of inertia sets in lasting from five to ten days, sometimes longer, before the first egg is laid.

The nests of the Rotorua Black-bills cannot compare with those of their South Island congeners, whose nests are generally well constructed affairs, raised from four to eight inches above the terrain. The Rotorua birds make the most of the holes, dips and crevices which occur on the silica reef, merely placing a few bents or rootlets on the bottom of these depressions and laying the eggs thereon. When the nest is sited on an eminence or a flat surface, more material is employed.

Two eggs is the normal clutch of the Black-bill, as it is of the Red-bill. In the season under review, 1951-52, the colony as previously stated contained a maximum (in mid-December when at its peak) of 220 nests of Black-bill gulls. Approximately 15 per cent of these nests contained three eggs and about 10 per cent one only. 'One-egg' nests are inclined to be rather misleading, for several reasons: (1) The second egg may have been taken by a marauding Black-backed gull, or filched by a neighbour. (2) The owner may be an aged female. (3) An egg may have been accidentally smashed by its owners. This refers of course to eggs advanced in incubation. As far as I could ascertain the period of incubation occupied from 22 to 24 days.

So restricted was the area occupied by the brooding birds, and so closely packed were the nests, that on one isolated slab of rock that jutted into the lake, and the dimensions of which were 15 feet by 12 feet, no less than twenty-five occupied nests were counted.

The first food of the fledgling appears to be the partly digested larval form of the smelt. Lake Rotorua teems with this small fry. This is regurgitated on to the ground, then picked up by the parent and placed in the open maw of the chick. When the chick is old enough to move around it feeds itself from the food regurgitated, and is sometimes beaten to the draw by a neighbour's offspring. The chick does not seem to make much headway until it is nearly a fortnight old, after which it grows rapidly and becomes extremely active. About this time the parent birds, by alternate coaxing and coercion, introduce the chick to its natural element, and it is amusing to watch this performance as I have done many times with the aid of binoculars.

Reluctant to leave terra firma, its guardians will get it eventually into shallow water of a depth of a few inches, where it hesitates to swim out to the parent a yard or two ahead, and breaks back to the land. All this time it is keeping up its thin piping whistling, but eventually it is induced to swim out to the waiting parent, after which, like the human 'toddler', it likes it. The second chick, if there is one, is similarly initiated.

The 1951-52 season was exceptionally dry and the lake fell in consequence, exposing a sand bar about a hundred yards from the reef. When the youngsters' plumage was well advanced, and the wing feathers about half developed, the chicks were taken from their place of hatching to this sandspit. This was their jumping off place into the wide world.

Their sojourn here lasted until the full-fledged stage was reached, and from here they took off on their first flight. The training for flight was the replica of that employed by the parents in the swimming debut. The parent (one only by this time — presumably the female) would fly for about 20 yards and settle on the water. The youngsters, after much wing-flapping, would fly to her. The next lap would be further, and so on, until the young gulls were taken far out on the lake, where they were doubtless given tuition in the art of obtaining their own food. This last performance too I had the good fortune to witness on several occasions. It appears to me that the parent gulls display the greatest solicitude for the safety of their young during the period between hatching and the first swimming lesson.

Once afloat, the juveniles are safe from all but aerial foes. Should a harrier, Black-backed gull, bittern or any large bird approach the colony it is immediately pursued with vim and tenacity — not, I believe, by the parent birds, but by what I imagine may be an organized band of scouts, which invariably are the first to take wing and harass the intruder. From the earliest days of the colony's formation it was noticed by me and several others who studied the birds daily that a number of individuals took no part in nest-building activities, but stood about in small groups and exhibited an air of alertness that was not apparent in other members of the community. Not only were these supposed special guards the first to meet the invader, but they were also the last to relinquish the pursuit.

On the approach of an enemy, all brooding gulls rise and hover over the nest. When the danger is past they drop vertically on to the nest and resume their brooding. All of which reminds me that I have never yet seen an attacking gull make actual contact with the foe, although I have heard it stated frequently by other observers. They seem to rely wholly on 'bluffing' the enemy, and in the case of aerial predators the bluff usually works. Not so however with ground vermin.

Copulation takes place continuously from the first settling of the colony apparently right up to the date of the laying of the full clutch, and spasmodically thereafter, in many instances when the female has been brooding the eggs for a considerable period. During the act of coition the male bird hovers over the female, drops on to her back lightly and continues to flap his wings until the operation is completed. I have never seen copulation take place on the water — always on land and frequently with the brooding hen bird on the nest.

My observations of the Black-billed gull here and on the wide river beds of the South Island have revealed the fact that all breeding birds have reached full adulthood. I cannot recollect a single instance of immature nesters. In full breeding plumage the adult Blackbill is indeed a beautiful bird, with its blue-grey upper surface, the black wing-pattern finalized, back, rump, tail and under surface snow-white, with at times the evanescent roseate reflections emanating from the breast plumage, visible only at close quarters. The streamlined body, slender bill black as jet, irides very pale grey and the black tarsi, toes and webbing. Add to this the long, narrow, sharply pointed pinions, the graceful airy flight, and you have an aristocrat of the gull family. The Black-headed Gull of the Northern Hemisphere (*L. ridibundus*) is without doubt the Blackbill's closest relation.

I cannot end these notes without a word or two on protection. *Larus* is not a game bird, to be protected, nurtured and duly slaughtered in season, so is of little account — or so it would seem! Year after year the tragedy is repeated, and vandalism goes unpunished. The whole area of Sulphur Bay and its immediate hinterland is a dedicated sanctuary for all time, but the Act has apparently never been enforced and the area remains a sanctuary in name only! The word 'protection' has no meaning within its precincts — certainly not in the case of the nesting gulls.

NOTES ON SOME BIRDS OF THE WESTERN PAPAROAS,
WESTLAND

By J. G. PENNIKET

For two years the writer has been continuously and exclusively engaged in trapping opossums in an area in the Western Paparoas bounded by the coast in the west, the top of the range in the east, the Seventeen Mile Bluff in the south, and Bullock Creek in the north. This has afforded unusually good opportunities for bird-watching, and it is felt that there can be comparatively few land-bird species present which have not been observed.

The district includes substantial areas of almost every conceivable type of terrain, including coast swamps and lagoons, farm land, inland swamps, scrub, shingle riverbeds, mountain rivers, low and high beech forests, sub-tropical rain forest, high rata-kamahahi forest and open tops.

The rat population is comparatively low, the stoat population high. Feral cats are present but very scarce. Some observations on predator density, and relationship to bird life, follow the list.

Sea and shore birds have in all except a few special cases been purposely omitted; so much time has been spent watching land-birds that the list is fairly exhaustive, and the absence of any species may be regarded as significant. This would not be the case with the sea-birds, as too little time has been spent in their haunts. Observations are in general confined to the area defined above, except where a particularly interesting species has been seen reasonably near, in which case the exact locality is given.

GREAT SPOTTED KIWI (*A. haasti*). Distributed evenly throughout the bush. About thirty kiwis seen personally in this area have all been of this species. Not noticeably more nor less common on the high ridges than on river-flats.

WESTLAND BLACK PETREL (*Procellaria westlandica*). Breeding (winter). Some thousands. Currently being investigated by Mr R. Jackson.

BLACK SHAG. Common.

PIED SHAG. A few.

WHITE-THROATED SHAG. Common. Occasional birds of the white-breasted phase.

SPOTTED SHAG. Common. Breeding just outside the area: Twelve Mile Bluff, Perpendicular Point.

WHITE HERON. Always one or two about, except in the breeding season.

REEF HERON. Present in very small numbers.

WHITE-FACED HERON. Very common. Seen almost every day. Preferred habitat, wet fields, but also lagoons and the more open swamps. Usually in groups of three to five birds. Almost certainly breeding, but not proved. Universally known as the 'Blue Heron'. This bird is so common in much of Westland that there is a fair amount of agitation to have both it and the pukeko removed from the protected list.

BITTERN. Evenly but not plentifully distributed through the swamps.

BLACK SWAN. Occasionally a few birds. Not resident.

PARADISE DUCK. About ten birds more or less resident, plus visitors.

GREY DUCK. Common.

MALLARD. Very few.

NEW ZEALAND SHOVELER. Good numbers breeding in spring and summer. Not seen at other times.

BLUE DUCK. A few near the heads of the larger streams and rivers.

AUSTRALASIAN HARRIER. Very common.

NEW ZEALAND FALCON. Rare. Only four seen in two years, but at widely separated localities.

WESTERN WEKA. Thinly but very evenly distributed throughout the river-flats and the bush, ranging up to at least 3,000 feet. Known to extend at least as far north as the Four Mile River. About one weka is seen to every two kiwis; remembering the confident ways of the diurnal weka, it is felt that it is much less abundant than the kiwi.

PUKEKO. Very common. A few birds live permanently in non-typical areas such as rather dry fields bordered by thick bush, without adjacent swamps.

NEW ZEALAND PIGEON. Common.

SOUTH ISLAND KAKA. Moderate numbers on high rata-kamahi ridges only. Birds here appear to be noticeably darker than those at Jacksons.

KEA. Two caught in opossum traps at 2,000 feet elevation on a rather open beech ridge.

SHINING CUCKOO. In spring and summer, common throughout up to 1,000 feet.

LONG-TAILED CUCKOO. Common in spring and summer on high beech ridges, the same habitat as the brown creeper.

MOREPORK. Often seen.

NEW ZEALAND KINGFISHER. Common.

SOUTH ISLAND RIFLEMAN. Found only on high ridges, and not to be seen every day even there. May be particularly subject to attack by stoats.

SKYLARK. Common in the drier flat open areas.

SOUTH ISLAND FANTAIL. Very common throughout up to about 3,000 feet. Black phase about 15 per cent.

YELLOW-BREASTED TIT. Very common throughout, including semi-open farm land, and ranging up beyond 3,000 feet.

SOUTH ISLAND ROBIN. Absent, except fair numbers in Bullock Creek, the western limit being a point about four miles in from the coast. The northern limit is not known, but they have not been seen on occasional trips up the Fox and the Four Mile, which are the next two main streams to the north. The bird is not known to old residents of the district.

SOUTH ISLAND FERNBIRD. Does not appear to occur in the area proper, but is found sparingly in pakihi country just south of the Four Mile River.

BROWN CREEPER. Sporadic on high beech ridges. Very common on one ridge. Ranging down as low as 400 feet in spring. Several nests, rather like those of the goldfinch, were found seven to twelve feet up in scrubby ratas and beeches. Another (occupied) was in a hole in the trunk of a very large live beech, about sixty feet from the ground. In spring, rival males fight savagely, and are often seen to whirl down to the ground with beaks interlocked, for all the world like a pair of cock sparrows.

GREY WARBLER. Very common to 3,000 feet.

SONG THRUSH. Very common in low open or semi-open country. Does not penetrate heavy bush to any extent.

BLACKBIRD. Very common in most terrains, including the heaviest bush at all altitudes, but not seen in pure beech country or on open tops.

BRITISH HEDGE SPARROW. Very common at low altitudes except in heavy bush.

NEW ZEALAND PIPIT. Common on all open reasonably dry country both above and below the bush.

BELLBIRD. Common throughout except in pure beech country and on the open tops.

TUI. Fairly common, but not necessarily to be seen every day. Outnumbered by the bellbird at least ten to one.

WHITE-EYE. Very common throughout except on open tops.

GREENFINCH. Evenly distributed through the low country, but not particularly common.

The next five species are dealt with together:

GOLDFINCH
LESSER REDPOLL
YELLOW HAMMER
HOUSE SPARROW
STARLING

These five species are all common at low altitudes except in heavy bush. The normal range of the redpoll, however, includes the open tops, and odd individuals and flocks are occasionally seen in the tops of the trees in heavy bush at all altitudes.

The following species, while not proved to be present, deserve special mention for various reasons:

LITTLE SPOTTED KIWI (*A. oweni*). It would normally be very difficult to say that a possible kiwi species was absent from a given district. But in view of the large number (thirty-odd) of other kiwis seen by the writer in the district, it is felt that the Little Spotted Kiwi, if present, would have been seen by now.

NEW ZEALAND BANDED RAIL, MARSH CRAKE and SPOTLESS CRAKE. Much time has been spent looking for the three small rails, but without success. The swamps, lagoons and estuaries are continually under observation by flax-cutters and, in the season, by duck shooters. None of these has seen any small rails. Remembering the Banded Rail's habit of frequenting open estuaries, it is felt that the bird if present would have been observed. The other two, however, are so small and unobtrusive, and this area with its miles of flax and raupo swamps seems so eminently suited to them, that I feel they cannot properly yet be ruled out. Odd birds are recorded from time to time near Greymouth.

KAKAPO. Local residents recall large numbers about thirty years ago. A careful though not very intensive search by the writer revealed no traces. There have been no recent reports.

PARAKEET. A reliable local observer, formerly much in the bush, says they have always been present, but never in any numbers, and that he last saw some three years ago about five miles up the Pororari River. This is the one area in the district which the writer has not visited. Furthermore it is very close to where the robins are, and, in Westland, these two species do show a tendency to occur together.

SOUTH ISLAND BUSH WREN. Presumed absent, in view of the very large amount of time spent by the writer in probable habitat.

ROCK WREN. Not seen, but in view of negligible amount of time spent by the writer in usual habitat, presumed likely to be present.

YELLOWHEAD. The Yellowhead normally shares the habitat of the Brown Creeper. The writer has seen about 1,000 creepers here and no yellow-heads. It therefore does not persist in any numbers, if at all.

SMALL MAMMALS

A picture of the vermin position is obtained by comparing the numbers of rats and mustelids trapped with the number of opossums trapped, and reducing this to a per 1,000 opossum basis, but the results may be biased if some species trap more readily than others. The numbers of opossums trapped (shown in brackets in Table 1) are regarded as sufficiently large so that the figures can be taken as fairly accurate, especially as opossums are more or less evenly distributed throughout the area. Bullock Creek has been separated from the remainder. Figures are included for a piece of Waikato bush where a fellow trapper is operating using identical trapping techniques, but here the basis is taken as 2,000 opossums since opossums are just over twice as dense there (this has been carefully calculated). The mustelid species involved are, in the Waikato, about even numbers of stoats and polecats; in Bullock Creek all stoats; in Barrytown/Punakaiki all stoats except for one weasel (the skin of the latter was sent to the Animal Ecology Section of the Department of Scientific and Industrial Research, who confirmed the identification).

TABLE 1

	Rats	Mustelids	Opossums
Waikato	320	5	2,100 (4,500)
Barrytown/Punakaiki	45	14	1,000 (9,000)
Bullock Creek	5	4	1,000 (2,000)

The table cannot fairly be used to establish (for example) an absolute rat-opossum ratio for any district, since any two species will vary in susceptibility for the same trapping technique. What is claimed, however, is that it can be stated that rats are seven times as plentiful in this part of the Waikato as they are in Barrytown/Punakaiki, and about sixty times as plentiful as in Bullock Creek. Mustelids are about on a par in Bullock Creek and the Waikato area studied, but three times as dense in Barrytown/Punakaiki.

The ratio of bird-life densities in the three areas is estimated at Bullock Creek five (very plentiful), Barrytown/Punakaiki three (plentiful) and Waikato one (moderate). Furthermore, Bullock Creek retains the robin. It would be dangerous to embark on a comparison of the Waikato situation with either of the other areas — environmentally they are too dissimilar, and the evidence available is too meagre. But the two Westland areas are very similar, except that the Bullock Creek bush is less lush, and less productive of fleshy fruits. This may account for the comparative scarcity of rats.

Remembering that rats no doubt usually form an important item of mustelid diet, it remains to account for the comparatively high mustelid population in this part of Westland. The extreme abundance of the introduced whistling frog may have something to do with it — as also with the abundance of harriers.

In conjunction with the bird observations the table rather suggests:

1. Robins and stoats can co-exist. Rats may be the more serious menace to the robin, and indeed to many birds, by competing for food.
2. The large spotted kiwi and the stoat can co-exist.
3. The weka and the stoat can co-exist, but the weka does not seem to have much of a margin. Wekas, it should be mentioned, while still not exactly common, seem to be about three times as numerous in Bullock Creek as elsewhere. But this again may be because of less competition for food with the rat.

4. A high stoat population does not necessarily mean a low bird population.
5. The stoat may well be more of an asset as a rat destroyer than a liability as a bird destroyer.
6. The time for an exhaustive study of the diet of rats and mustelids in the New Zealand bush is long overdue.

STOATS and WESTLAND PETRELS

A rather higher than normal density of stoats was noticed in the areas where the Westland Petrel nests. It will be interesting to attempt to ascertain whether the bird has diminished in numbers in recent years, and whether or not it does so in the future. Also, this is one case where the rat-stoat-bird relationship is not complicated by competition for food between the rat and the bird.

SHORT NOTES

TERRITORY THREAT DISPLAY OF THE BLACK OYSTERCATCHER

(*Haematopus unicolor unicolor*)

On 5/1/55, while I was watching a pair of black oystercatchers and their chick on the southern end of Butterfield's Beach, Halfmoon Bay, Stewart Island, another black oystercatcher landed in their territory. The resulting threat display was very interesting, especially as the birds ceased calling and flying around me, although I was only a few feet from the chick, and they had already lost one of their brood to a dog the day before.

Number one of the pair ran to number two with head held noticeably high and with the beak roughly parallel to the ground. Number two adopted a position in which the bill almost touched the ground and the shoulders of the wings were hunched well above the back. As soon as number one was beside number two, it adopted number two's attitude; then, following a slight pause, they both started to run, side by side, in step, and in this strange position — bills almost touching the ground, and with the shoulders hunched, while all the time uttering shrill cries. After several 'flat-out' chases around the beach in this position, during which the pair were only a few yards behind the intruder, the lone bird was at last driven from the beach. The chased bird did not take up any strange attitude like the pair, nor did it make any attempt to stay on the beach or utter any cry when being chased away. The pair, having satisfied themselves that the bird would not return, resumed aggressive behaviour towards me, the chick having remained frozen during the interlude.

It would be interesting to know which sex ran to the other at the beginning, as there was no hesitation as to what positions to adopt. The display took place just after a cool shower and there was a cool, moderate breeze with a weak sun and dull clouds.

James Watt

PROBABLE WHITE-CAPPED (LESSER) NODDY IN KAIPARA

At the invitation of Mr M. A. Waller a small group of Auckland ornithologists visited South Kaipara Heads on 11/10/53. M.A.W. was soon describing a black tern-like bird which on the day before, during the rough weather which had prevailed at the time of the London to Christchurch air race, had flown in from the north-west and made a clumsy landing in a big Norfolk Island pine growing on the top of the cliffs. The bird was so tired that M.A.W. climbed the tree to examine it more closely. It was quite black except for a conspicuous white cap, and its long beak was like that of a White-fronted Tern. It was about the size of a prion or a little bigger. From this description there was little doubt that the straggler was either a Common Noddy (*A. stolidus*) or a White-capped Noddy (*A. tenuirostris*), with the evidence strongly inclining towards the latter.

On 21/11/54 another visit was made to South Kaipara Heads and through the courtesy of Mr E. G. Turbott, of the Auckland War Memorial Museum, M.A.W. was shown specimen skins of both these noddies. Without hesitation he picked that of *A. tenuirostris* as agreeing with the bird which had flown into his garden. This species has not previously been recorded from the mainland of New Zealand. It has a wide distribution in the tropics and breeds in some numbers at Norfolk Island, which well may have been the provenance of this bird.

R. B. Sibson

NEW ZEALAND YELLOW BUNTINGS (YELLOWHAMMERS)

By Dr JAMES M. HARRISON, Sevenoaks, Kent, England

Editor's Note: In the *Bulletin of the British Ornithologists' Club*, vol. 74, No. 9 (1954), and vol. 75, Nos. 1 and 2 (1955), Dr Harrison has published an important paper, 'Remarks on the Taxonomy of the Yellow Bunting, *Emberiza citrinella* Linnaeus', in which he discusses geographic variation in this species throughout the Continent of Europe, and also compares a small series of New Zealand specimens with the European races. The subspecies recognised are: (1) *E. c. citrinella* - Scandinavian Peninsula, Western Siberia and Baltic countries. (2) *E. c. sylvestris* Brehm - central Germany, Switzerland, much of the Great Lowland Plain of Europe, Italy, south-western France and probably northern Spain and Portugal. (3) *E. c. nebulosa* Gengler - England, eastern and south-eastern counties. (4) *E. c. caliginosa* Clancey - Scotland, Wales and Eire, intergrading with (3) *E. c. erythrogenys* Brehm - Jugoslavia, Bulgaria, and eastwards into Asia Minor and western U.S.S.R.

Because the *Bull. Brit. Orn. Club* is not readily accessible to New Zealand readers, and because Dr Harrison modified his original pronouncement upon the racial affinity of the New Zealand birds, we here reproduce the section of his paper dealing with the New Zealand skins.

'The introduction of the Yellow Bunting into New Zealand, about which there is unfortunately no exact information as to the source from which the birds were obtained, makes a detailed study of the characters of birds taken in the Islands of unusual interest and importance. I have been enabled to examine a small series of both sexes through the kind offices of Mr C. A. Fleming. The writer believes that it is most unlikely that the original stock were of British breeding birds, but that the birds would have been trapped in the non-breeding season, and may therefore have included a percentage of Continental immigrants.

A study of the characters the specimens presented bears this out. The males examined do not wholly match Gengler's race, *E. c. nebulosa* (*sensu stricto*), i.e. from the eastern and south-eastern counties of England. They diverge from that form in the following respects: firstly, in the rather small sample investigated, the mantles are variable, both in colour and pattern.

In some, this region is rather brownish, but not so dark and uniform and not so heavily striated as in the populations in the extreme western half of England, Wales, and in Scotland and Eire, while the mantle striations tend to be somewhat heavier than in birds from the eastern side of England. On the upper parts, the specimens fit best into series of this species from north-western Europe, a point which thoroughly supports the hypothesis that the stock originated from immigrants to the British Isles trapped in the non-breeding season.

Secondly, the most significant feature is that the underparts of all the males examined are of an intensely bright yellow colour, this character exactly matching the central European form *E. c. sylvestris* and also the eastern race *E. c. erythrogenys*; they are, however, different from the latter in being less heavily marked with chestnut striations over the pectoral region and on the flanks; also the outer edges of the secondaries in the New Zealand birds match those of the central European birds.

It would seem that in the New Zealand population, under altered environmental influences and far removed from gene-interchange, we can see the effect of the elimination of the genes which are responsible for the extreme variability of the characters as seen in the populations in north-western Europe. The effect is that by the in-breeding of a stock now isolated and remote, the disclosure and importance of the central European form, *E. c. sylvestris*, as one of the cardinal racial genotypes, has been made evident. These birds, in fact, exemplify the phenomenon of autophoric reverse mutation, and the gradual elimination of heterozygous elements, which in the populations of north-western Europe, are constantly being re-introduced to maintain variability. Upon further consideration, following the examination of the large general series which has been available in the course of this research, the author is now of the opinion that the New Zealand birds should be regarded as more nearly approaching the central European population, *E. c. sylvestris* Brehm, rather than the nominate form *E. c. citrinella* Linnaeus.

The small series of New Zealand birds available does not allow of any useful analysis of measurements, but in the males the wings measure: 85 mm., 88 mm. (2) and 89 mm., which, it will be noted, is small when compared with topotypical *E. c. sylvestris*; an examination of a longer series of this species from New Zealand is very desirable before a more definite assignment is possible as to racial identity. (C/f Checklist of New Zealand Birds, 1953, p. 66.)

PIED FANTAILS (*Rhipidura fuliginosa*) SEEKING SHELTER

At Sawyers Bay, Dunedin, on the afternoon of 8/6/55, two fantails (apparently a pair) flew frequently at the window of the kitchen of a house situated near a tree-lined creek. Snow lay deep on the ground, while the weather was cold and stormy. The birds also flew into the adjoining wash-house, round and out again quite often. Later, as evening approached, the kitchen window was left open just to see what would happen. Almost immediately the pair flew in, quite unconcerned at the presence of children playing or of tea preparations. They busied themselves with the odd flies resting on the ceiling. After that they apparently disappeared. However, as tea progressed, a squeaky noise was heard coming from wires stretched above a fuel stove and on which clothes were hanging to air. Investigation disclosed them sitting pushed close up to each other with their heads tucked into each other's neck feathers. At 7.15 p.m. one flew round and round the kitchen and found the last fly, with a tiny snap-snap of its beak. It was soon called back to its mate, which protested loudly at being left alone. They slept thus during the evening and through the night. Next morning they remained on their perch when lights went on about 7 o'clock, flew around often till 9 o'clock, but refused to go out of the open door or window. It was not till the day was clear and warm that they disappeared outside. These little birds seemed to have shown a knowledge of the desirable conditions inside the house

and a determination to make use of them for the night and until the weather cleared next morning.

W. M. BURROWS

GOLDFINCH (*Carduelis carduelis*) COLLECTING NESTING MATERIAL

On the fine afternoon of 21/1/55 a goldfinch was seen gathering nesting material from under the eave of a shed. Along the wall of this building was trained an apricot tree. Flying to a small branch, the bird reached forward to seize a mouthful of brown, silky spider's nest which was firmly attached to the rough surface of the wall. Tugging with all its might, it gradually pulled the silk away till its head was back to the normal starting position. But still the silk held firmly to the wall. Wits its head raised high, it continued to pull, throwing its weight outward till it was lying horizontal to the branch — back down and belly up. The silk still held. It then swung downward till it could pull no further. Then, fluttering its wings, it gave a jump outward so that its whole weight plus the wing beats jerked most of the silk clear. It flew away trailing some six inches of the gossamer to its nest in a tree nearby. All this took about a minute, during which the cock bird (presumably) sat on a nearby branch watching and calling. When the hen flew, he followed her to the nest. The observer, looking out from a netting window unseen in the darkened interior of the shed, was within two feet of the hen bird and thus had a very good view. The process was repeated till the supply of material was exhausted.

W. M. BURROWS

BEHAVIOUR OF BUSH HAWK (*F. novaeseelandiae*) IN WELLINGTON

On 18/5/55 my sister, Miss Z. A. Wilkin, placed a cage containing one yellow and one blue budgerigar on a chair near a closed upstairs window overlooking a gully, which has a little creek at the bottom and many trees along the sides, and is situated between Kelburn Park and The Terrace, near the centre of Wellington City. The weather was fine and warm. Suddenly at 4 p.m. a dark brown, very graceful hawk with fine white eyebrows and with the under-tail and thighs flecked with cream-beige, appeared fluttering at the window trying to get at the budgerigars through the glass. Miss Wilkin opened the window and the hawk then tried to get at the budgerigars by attempting to settle on her arm and shoulder, and she had to push it outside again. The hawk was very gentle and quite noiseless, even the wing beats being inaudible. The budgerigars fluttered around in their cage and one was so terrified that it fainted on the bottom of the cage, but came round again later. When the window was shut again the hawk settled on a tree close outside and returned nine times, fluttering about the window as if trying to gain entrance. It remained close by for about twenty minutes, during which time Miss Wilkin obtained a camera and attempted to photograph it. When Dr R. A. Falla, Director of the Dominion Museum, was consulted about the hawk, he said that the above was a good description of a young Bush Hawk.

FRANCIS E. WILKIN, Wellington

SHARP-TAILED (Siberian Pectoral) SANDPIPER NEAR INVERCARGILL IN MAY

On 17/5/55 we noticed a small wader feeding beside one of the small pools which were dotted about the floor of what was once L. Hawkins, near Invercargill. As it tended to stay by itself and showed no desire to consort with a scattered flock of Banded Dotterels (*C. bicinctus*), we had little difficulty in watching it for as long as we liked at about the distance of a chain; and as soon as it was seen in a favourable light we were able to identify it as a Sharp-tailed Sandpiper (*C. acuminata*) in breeding dress. So richly

was it marked on the chest that we had to make certain that it was not an American Pectoral Sandpiper (*C. melanotos*); but against this were the crescentic marks on the flanks and the gradual fading-out of the gorget, which in the American species ends abruptly. Other points which we noted in favour of its being *C. acuminata* were (a) no yellow was visible at the base of the bill, (b) the legs were greenish-yellow rather than yellow, (c) its call when it was flushed was softer than the distinctive 'kriek' of *C. melanotos*.

The Sharp-tailed Sandpiper has been obtained several times at L. Ellesmere, but its discovery at L. Hawkins extends its known southward range by some 200 miles. According to Wall (*Emu* 53, 83-84) it is a regular visitor to southern Tasmania, but has not been recorded in winter; and much further north, according to Hindwood and Hoskin (*Emu* 54, 244), 'they are absent from the Sydney district from early May until the first week or two of August.' It is therefore all the more remarkable that this bird should have been found near Invercargill in mid-May. There is one other winter record of the Sharp-tailed Sandpiper in New Zealand. One was seen in July 1949 in the Firth of Thames by Mr H. R. McKenzie, who by good chance arrived in Invercargill on the day when we found the bird at L. Hawkins and was able to see it a few hours later.

R. B. SIBSON, D. A. URQUHART

TO THE EDITOR

Sir,

One of my colleagues here, Mr G. A. Knox, has received a letter from a South African worker who requests 'fleas of penguins and other sea birds of the southern ocean' and who 'recently published a review largely based on material collected by ANARE.'

He goes on to say: 'Very much more material is required if we are to understand the distribution problems and I appeal to you for help. The fleas are mostly found in nests, burrows, etc., of birds and occur in quite large numbers.'

I wonder if you would be so kind as to put a small note in *Notornis* about this so that perhaps someone who has the opportunity of sending material may do so. I know penguin burrows are good here and I imagine petrel burrows would yield interesting results. The address is:

Dr Botha de Meillon
The South African Institute for Medical Research
Hospital Street
Johannesburg
South Africa

E. W. DAWSON

Department of Zoology,
Canterbury University College, Christchurch C.1.

Sir,

I am making an investigation into the aerodynamics of various types of birds, and would be most grateful if any of your members could make some measurements for me. I particularly need measurements of Diving Petrels, Australian Gannet, and Albatrosses, but measurements of any other birds would be welcome, especially those of sea-birds. I give below details of what I want.

Would you be so kind as to bring this to the attention of any of your members who would be willing to help me?

JOHN BARLEE

Royal Naval College,
Dartmouth, Devon, England.

Measurements required

1. *Weight* — as accurately as possible.

2. *Wing span* — measured from tip to tip when the wings are fully stretched *at right angles* to the body line. (It may be more convenient when measuring a living bird to take the distance from one wing tip to breast-bone, and double it.)
3. *Wing area*. One wing to be fully stretched *at right angles to the body line*, laid on a piece of paper, and a line drawn carefully round it. Line of body at base to be drawn also.
4. To be written on same piece of paper: Species. Sex, if known. Locality. Date. Adult/Immature. Noticeably fat/Thin. Any other relevant details. Also name of measurer.

It would be particularly valuable if measurements could be made of a number (say, five?) of each species.

NOTICES

WEEK-END COURSE ON NEW ZEALAND BIRDS

The Victoria University College Council of Adult Education is planning a three-day course of study on New Zealand Birds to be held in Wellington over Labour Day Week-end, Saturday 22 October to Monday 24 October 1955. The course is being run in co-operation with the Dominion Museum, Wellington, and Dr R. A. Falla will be the main tutor.

The course will present an outline of bird structure, bird biology, behaviour, and methods of field study. It will consider both the scientific and recreational aspects of bird study, and opportunity will be given for field identification of birds.

For further information regarding syllabus, timetable and fees write to 'Bird School', 192 Tinakori Road, Wellington N.1.

MOTURAU MOANA: STEWART ISLAND

For some years there has been available at Stewart Island accommodation for small groups of people who may be visiting the island for the purpose of scientific research or local investigations. The accommodation is at 'Moturau Moana', a two-storeyed property about one mile from the wharf at Half Moon Bay. Some particulars of the property are attached. It is administered by the Department of Internal Affairs, which will be pleased to furnish further details of bookings, travel, etc.

It is important that the privilege of using 'Moturau Moana' should not conflict with regular tourist houses, boarding houses and hotels at Stewart Island. Applications should, therefore, clearly indicate that the purposes of a proposed visit include some form of bona fide study.

1. The house stands in about three acres of gardens which are a show place on the island and visited by thousands of people during the holiday season. Behind the house is a bush walk of some thirty acres which is also part of the property. A custodian and his wife are in charge.

2. The house has electric light and hot water. There is an upstairs and a downstairs bathroom, and central heating is supplied by an oil-burning stove.

3. There are at present five single beds in the three bedrooms available for guests. This limits the maximum number of guests to five, but this could be increased to six if the necessity arose.

4. The tariff is £4 per week. This charge includes all meals, linen, etc.

GREETINGS CARDS

The committee which was appointed to examine ways and means of producing a special O.S.N.Z. Christmas Greetings Card is glad to announce that these will be on sale after the middle of October. The well-known artist Mr A. C. Hipwell, who has been a member of the society for some years, has graciously done paintings of four birds, Banded Dotterel, Stilt, Gannet and Silvereye.

It is hoped that members will support this new venture. When the initial production costs, which are not inconsiderable, have been met, the proceeds of the sale of these cards will go into the 'Illustrations Fund' of *Notornis*.

The cards with envelopes may be obtained from

Mr B. S. Chambers,

P.O. Box 3496, Auckland C.1.

The price is 5/- per half dozen or 9/- per dozen; and purchasers of fifty or more cards may have their own name and address printed on them by Messrs Conway Clark Ltd, 81 Hobson Street, Auckland, at 16/- extra per 25 and 4/- for every additional 25.

When ordering, please state whether you want a selection of cards or cards all of one kind; and enclose 4d postage. Cheques should be made payable to B. S. Chambers and crossed. Please add exchange to country cheques.

As a publication of the O.S.N.Z. the cards will be on sale to the public in the usual shops at a higher price.