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DISTRIBUTION OF BIRDS IN THE SOUTH-EAST KAWEKA RANGE

By R. A. FORDHAM

Introduction

An investigation of the birds inhabiting the Tutaekuri, Ngaruoro and Oamaru River Catchments of the Kaweka Range was carried out in the summer of 1959-60. Observations were made during a survey by the Forest and Range Experiment Station, N.Z. Forest Service, Napier, of watershed conditions in the Tutaekuri and part of the Ngaruroro catchments. As time did not permit complete coverage of the Ngaruroro and the Oamaru, records from these areas will be used only for comparison with the completed Tutaekuri catchment.

Fifty-three days (between 14/11/59 and 28/1/60) were spent in the Tutaekuri catchment during which time all main ridges and streams were traveresed. In addition, 21 days were spent in the Ngaruroro and Oamaru River areas, comprising two days in November, 1959, three days in January, 1960, and 16 days in February, 1960.

The area covered in the Tutaekuri, some 60 square miles, extends from the head waters of the Tutaekuri and its main tributary, the Donald River, to the south edge of the Blowhard Plateau (along which runs the Napier-Taihape Road), and east to near Puketitiri. The altitudinal range of the area is from 1,000 feet in the lower Tutaekuri to 5,657 feet on the Main Kaweka Range.

Throughout the survey, daily records of sightings and calls were made and other evidence of bird life noted. Little has been published in "Notornis" on the birds of the Kaweka Range, but a note of interest is a report by D. A. Bathgate ("Notornis" VI, 1955) of Kakapo in the head of the Ngaruroro in 1900.

The Area

The Kaweka Range, part of the main North Island mountain axis, includes the highest land in Hawkes Bay, rising to 5,657 feet at Kaweka Trig, and covering an area of approximately 400 square miles. The Tutaekuri River drains the south-east corner of the Range and flows eastward to Napier, a distance of about 40 miles. The Tutaekuri catchment includes two large plateaux, the Mackintosh and Blowhard, rising up to the Main Range in the west, and having foothill ranges up to 3,594 feet flanking them on the east. Farm land borders the eastern slopes of these foothill ranges. A scrub consisting mainly of manuka (Leptospermum scoparium) and Dracophyllum subulatum from 3 feet 8 feet high covers most of the plateaux, with occasional small pockets of podocarps on the valley sides and on the Blowhard. Red and mountain beech (Nothofagus spp.) forest occurs on the lower slopes of the Main Range, in the head waters of the Tutaekuri and Donald Rivers and in islands on both plateaux. Manuka and kanuka (Leptospermum ericoides) scrub covers much of the eastern foothills. Fuchsia, Houheria, Nothopanax spp. and other hardwoods are common near streams and rivers, while tussock grasses (Poa and Danthonia spp.) and sub-alpine vegetation predominate on the open tops.

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The Tutaekuri Birds

Thirty-eight species were recorded in the Tutaekuri catchment. No attempt has been made to discuss relative abundance apart from brief comments about each species. However, in general, the following five birds were found to be the most numerous:... Pied Tit, Greywarbler, Blackbird, Bellbird and Chaffinch. The complete list of species encountered is presented below:... Fordham

NORTH ISLAND KIWI: Although no sightings were made of kiwis, evidence points to their presence in the Tutaekuri head waters at least. An egg shell, and later a dead adult kiwi, were found in the upper Tutaekuri north of Kiwi Saddle. The egg (found on 14th November) and kiwi (which had been dead about 10 days) were photographed. Included in the stomach contents of the carcase was a large male weta (*Hemideina megacephala*), and two native land snails (*Wainuia* sp., species uncertain) about one inch in diameter. Feathers were found by two survey members above the bush-line at 4,500 feet in the absolute head of the Tutaekuri. No recordings were made in the Donald catchment.

BLACK SHAG: Seen in open and gorge regions of the lower and middle Donald and Tutaekuri Rivers. Only a few birds were observed.

PARADISE DUCK: Recorded in the lower Donald River, in the Donald-Tutaekuri confluence area, and in the lower Tutaekuri near farm land. Both Paradise and Grey Ducks were found in small numbers: about four of each being seen.

GREY DUCK: Grey Ducks were found only in the middle and lower Tutaekuri and on the east side of the Blowhard Plateau. In 1956 Grey Ducks were recorded in the upper Tutaekuri by the writer.

HARRIER: Harriers occurred fairly evenly over the area and were twice as numerous as falcons, notably in the open tops, where a third of the recordings were made.

N.Z. FALCON: Most recordings were on the east side of the catchment in the Blowhard and Black Birch Range areas. Falcons were seen in valley bottoms, over all types of vegetation, and once on the open tops below Kaweka Peak at about 5,000 feet.

PHEASANT: Pheasants were found east of a line through north Gorge Stream to Gold Stream. They were not as abundant as quail and were found in scrub or grass up to 2,000 feet, mostly on old farm land which has reverted to scrub.

CALIFORNIAN QUAIL: Recorded in the south and east parts of the catchment, i.e. on the Blowhard Plateau, lower Tutaekuri River and east of Gorge Stream in open, short scrub. Quail were seen on the south end of Kiwi Ridge at 4,100 feet in scattered, short manuka and grass. A number were recorded on the Blowhard Plateau but they do not seem to have penetrated far into the Range and were not recorded on the Mackintosh Plateau.

BLACK-BACKED GULL: Seen in flight over Don Juan (3,091ft.), and the south Blowhard Plateau. From these and other records in the Ngaruroro it seems that this gull occurs sporadically over the southern Kawekas, and individual birds are likely to be recorded alomst anywhere in the area.

PIGEON: Not present in large numbers, but does occur widely through the area. Half of the recordings were in the Donald catchment and the remainder were in the Tutaekuri head and east of Gold Stream. Pigeons were seen in the air at 5,500 feet below Kaweka Peak, and several times over 3,800 feet.

KAKA: Limited to the upper Tutaekuri beneath Kiwi Ridge and the head of the Donald. Recordings were made between 3,900

feet on Kiwi Ridge and 3,200 feet in the Donald head at Makahu Saddle. There is also a possibility that this bird is present in the Donald River gorge north-east of the Mackintosh Plateau.

YELLOW-CROWNED PARAKEET: Found only in the Tutaekuri head beneath Kiwi Ridge (where it is fairly common), and in the Donald head near, and on Makahu Saddle. In addition, unidentified parakeets were seen in the air over the Black Birch Range and north Kiwi Ridge. Observations were made between 3,000 feet and 4,700 feet.

SHINING CUCKOO: Evenly distributed throughout the area except for the west Blowhard and Mackintosh Plateaux where recordings are scattered. Common in occurrence in most other areas up to 4,300 feet, but not recorded in the open tops.

LONG-TAILED CUCKOO: Found throughout the head waters of the Tutaekuri up to 4,700 feet and scattered in the Donald catchment. Recordings in the Donald were at its head near Makahu Saddle. lower down west of Don Juan, and at the Donald-Tutaekuri confluence. Nearly half of the recordings of this bird were in the upper Tutaekuri.

MOREPORK: Recorded throughout the area in beech forest up to 3,870 feet. Moreporks were present down to the Donald-Tutaekuri confluence, but were not recorded on the Blowhard or Mackintosh Plateaux apart from the Mackintosh Bush.

KINGFISHER: A number were recorded in the lower Donald and in the Tutaekuri below the Donald-Tutaekuri confluence, but none were seen in the head waters.

RIFLEMAN: Over half of the recordings are from the upper Tutaekuri and a quarter from the head of the Donald. The remainder are scattered on the Mackintosh and east Blowhard Plateaux. Most stands of beech had Riflemen but they were not recorded in scrub much above 4,000 feet or on open tops.

SKYLARK: Nearly half of the recordings were on, or near the Main Range and Kiwi Ridge. The remainder were along the Black Birch Range and east Blowhard Plateau. Not as abundant as pipits and more restricted to high open ground over 2,000 feet.

PIED FANTAIL: Distribution is scattered over most of the area. Found up to approximately 4,300 feet on the Main Range in beech but not on open tops. Most recordings are from the Tutaekuri head, the Donald-Tutaekuri confluence area and the south Black Birch Range area. Fantails were also recorded on the Mackintosh Plateau.

PIED TIT: Common, and evenly distributed over the catchment in tall scrub and beech areas up to 4,400 feet. Not seen on the open tops.

NORTH ISLAND ROBIN: Found only in the upper Tutaekuri at approximately 3,000 feet below Kiwi Saddle and just west of Don Juan at 2,400 feet.

FERNBIRD: Found on several occasions on the south and east borders of the Blowhard Plateau in short manuka, toi-toi (Arundo conspicua) and Dracophyllum subulatum. This bird was also recorded in Puketitiri and there is a strong possibility that it is present on the western side of the Mackintosh Plateau. Fordham

WHITEHEAD: Frequent occurrence in the Tutaekuri head and upper Donald catchment. Also scattered recordings on the Mackintosh and Blowhard Plateaux. Seen mainly on upper valley slopes up to 4,600 feet in bush, but not on the open tops, or often near valley bottoms.

GREYWARBLER: Distributed abundantly over the entire area up to 4,600 feet in scrub and bush. Not found in grass areas or open tops. In one scrub area in the lower Donald where Warblers were especially abundant, there was a high population of small grey moths averaging about 12 to every 25 square yards.

SONG THRUSH: All recordings were east of a line from the Donald head to Gold Stream. Most of the observations were on the east Blowhard Plateau and the rest were at the Donald head.

BLACKBIRD: Found commonly throughout the catchment at all altitudes up to 4,000 feet. Apart from being seen in beech forest and scrub, Blackbirds were recorded on river flats and occasionally in low sub-alpine vegetation on the tops. Blackbirds were recorded six times as frequently as Thrushes.

HEDGESPARROW: Nearly three quarters of the recordings were east of a line from the Donald head to Gold Stream. Hedgesparrows were moderately abundant in the eastern Donald catchment and east Blowhard Plateau. Scattered occurrences in the Tutaekuri head up to 4,600 feet and on the Mackintosh Plateau. No recordings were made on the open tops.

PIPIT: The most common bird in the tops but also found widely in the area on river flats and in open scrub regions. Records were made between 1,000 feet and 5,600 feet. Pipits were not recorded east of the Black Birch Ridge (except in the lower Tutaekuri), but they are probably present on the Don Juan massif.

BELLBIRD: Quite common and almost ubiquitous, but none were recorded above 4,600 feet on the open tops.

TUI: Found mainly around the head waters of the Tutaekuri but also present in bush on the Mackintosh Plateau and around the heads of the Donald River and Gorge Stream. Tuis were not found in the eastern half of the area and generally were not common. The highest recording was at about 4,000 feet on Kiwi Ridge.

WAXEYE: Present throughout the catchment. Not very common on the south Mackintosh and west Blowhard Plateaux but were abundant elsewhere. Three were seen at 4,590 feet in sub-alpine vegetation.

GREENFINCH: Present in manuka scrub in the Tutaekuri northeast of the Lakes and on the central Blowhard Plateau. The Greenfinch is not common and is limited to the southern part of the area.

REDPOLL: Present on the open tops and in scrub areas. Half of the recordings are from the Blowhard and Mackintosh Plateaux and the rest are scattered along Kiwi Ridge, the Main Range and high ground in the east Donald catchment. Redpolls and Skylarks were the most common birds on the tops after the pipit.

CHAFFINCH: One of the most common birds in the catchment, and were found everywhere (except on the open tops and above 4,600 feet) in grass, scrub and beech. Occasional birds were recorded just above the bush-line.

YELLOWHAMMER: All recordings (except one on the Mackintosh Plateau) were in the lower Tutaekuri and north Gorge Stream, and were below 2,800 feet. Not common and was absent further in the Range.

CIRL BUNTING: Recorded once, west of Gold Stream on the north edge of the Blowhard Plateau in open scrub.

STARLING: A few were seen in the lower Tutaekuri and on the south Blowhard Plateau. They do not extend far into the Range.

AUSTRALIAN MAGPIE: Present mainly on the Blowhard Plateau and the lower Tutaekuri near farm land. No recordings in this catchment were made north of the Blowhard Plateau, and most were seen in grassy areas.

Comparison with Adjacent Areas

Three major areas are to be briefly compared with the Tutaekuri catchment. They are ____

- 1. The middle Ngaruroro River, i.e. the portion west of the Tutaekuri,
- 2. The upper Ngaruroro, and
- 3. The Oamaru River.

As previously stated 38 species were recorded in the Tutaekuri. In the Ngaruroro, 33 were recorded, and in the Oamaru, 24. The time spent in each area is to some extent reflected in the number of species contacted. Although many observations were made around the Ngaruroro and Oamaru Rivers, only the main features arising from them are used here. Points of interest concerning species found in all the areas are dealt with below, but striking differences have been placed in table form for ease of interpretation. The 21 species not listed in the table were recorded in all four regions. They were:—

Black Shag	Morepork	Blackbird
Harrier Hawk	Rifleman	Pipit
Falcon	Skylark	Bellbird
Kaka	Fantail	Waxeye
Yellow-crowned parakeet	Robin	Redpoll
Shining Cuckoo (?) *	Whitehead	Chaffinch
Longtailed Cuckoo (?) *	Greywarbler	Magpie
		37

*Shining and Longtailed Cuckoos were not recorded in the upper Ngaruroro and Oamaru Rivers but this was due, almost certainly, to the time of the year.

TABLE OF SPECIES NOT COMMON TO THE COMPARED AREAS

Species	Tutaekuri	Middle Ngaruroro	Upper Ngaruroro	Oamaru
N.I. Kiwi	*			*
Paradise Duck	*		*	*
Grey Duck	¥	*		*
Pheasant	*			*
Californian Quail	*	*		*
Banded Dotterel			*	
Black-backed Gull	*	*		
Pigeon	*	*		
Kingfisher	*			

Species		Tutaekuri	Middle Ngaruroro	Ngaruroro Upper	Oamaru
Fernbird	 _	*			
Song Thrush	 	*	*		
Hedgesparrow	 	*	4		
Tui	 	*			
Greenfinch	 	*	4		
Goldfinch	 		*		
Yellowhammer		*	4		*
Cirl Bunting	 	*			
Starling	 	*			

(Asterisks indicate presence)

To complete the list of known species, mention should be made of a pair of Blue Ducks which were observed in the middle Ngaruroro in October, 1959, by A. Cunningham, N.Z.F.S., (pers. comm.), and in the same area, since then, by Government track cutters (pers. comm.). Also of a bird answering to the description of the Bluewattled Crow reported (pers. comm.) by shepherds in the Harkness region of the upper Ngaruroro.

One similarity between the regions is that no Red-fronted parakeets were recorded. All those identified were Yellow-crowned, which were common at the Oamaru head. Robins were also common in the upper Oamaru, more so than in the Tutaekuri head. Riflemen and Tomtits were fairly numerous in the Ngaruroro and Tutaekuri, but scarce in the Oamaru. Few Pigeons were found in the Ngaruroro, whereas they were widely distributed in the Tutaekuri. Pipits were twice as numerous as Skylarks in the Tutaekuri, but in the middle Ngaruroro these two birds were almost equal in number.

Summary of Tutaekuri Catchment

From the species distribution outlined, a small group emerges, comprising Pheasant, Californian Quail, Greenfinch, Goldfinch, Yellowhammer, Starling and Magpie, which seems to be mainly confined to the southern and eastern sectors of the Tutaekuri catchment, i.e. the group is absent from the upper reaches of the Donald and Tutaekuri Rivers. As previously mentioned, the south and east borders are areas largely scrub covered, and are bordered by farmland. There is a general absence of wading birds in the Tutaekuri for although there are two small lakes at the southern end of the Range they lie in the Ngaruroro catchment. However, Pied Stilts were seen near the Napier-Taihape road about 20 miles from the Lakes towards Napier in an area which lies between the lower Ngaruroro and Tutaekuri Rivers. Of the 38 species encountered in the catchment, 24 were present in the head of the Tutaekuri itself, and 23 in the Donald head.

Acknowledgments

I wish to thank the other survey members for the observations they made available. They were ____ Messrs. A. Cunningham, R. Naylor, G. Caughley, D. Field, J. McKinnon, J. Jenkins, D. Wood and N. Elder. Also Mr. G. Caughley and Dr. R. Balham of V.U.W. for help and suggestions.

REFERENCE

Elder, N. L. (1959) — "Vegetation of the Kaweka Range," New Zealand Forest Service Technical Paper No. 27.

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SOME OBSERVATIONS ON WHITE-FRONTED TERNS AND SKUAS

By A. T. EDGAR

A nesting colony of White-fronted Terns (S. striata) on a rock at the south end of Bethells beach on the west coast of Auckland was under observation from January 16-24, 1951. On January 16 there were only 35 non-flyers left on the rock, plus two adults still brooding. The balance of the young birds could fly, and a few of the more advanced individuals were already seeking food for themselves, but the majority were still being fed by the parents, and spent their time either on the rock ledges, swimming in rock pools and shallow water, or squatting on the beach. Between fishing expeditions most of the adults rested on the rock or on the sand. On four separate occasions during a four-hour watching period, all the birds on the rock except the nonflying young took wing as if by order; the collection of birds on the beach carried out one similar flight during the same period. As far as could be seen there was no suggestion of alarm or disturbance, and the voluntary flights appeared to be in the nature of an exercise in which adults and young joined. The adults rose high in the air and circled for a few minutes on each occasion, and the young birds carried out similar evolutions, generally at a lower level; all then gradually dropped back to their original positions on the rock or the beach.

Black-backed Gulls (L. dominicanus) are a menace to rock colonies of White-fronted Terns. At Bethells and at Whatipu (where hatching started on 26/12/50) these gulls hanging around in the air over the colonies were frequently mobbed by terns and driven off or forced to settle on the water. At Bethells there was a gull nest on the pinnacle of the tern rock, at which sat a non-flying young gull. While one of the exercise flights was in progress an adult gull landed on the lower rock ledge and walked slowly towards the small congregation of non-flying young terns, but several of the adults broke off their circling flight to attack it and drive it away.

For the first few days of the period most of the fishing was well out to sea and $1\frac{1}{2}$ -2 miles or more north of the colony. On January 22 and 23 there were strong easterly winds, the shoals of fish were offshore from the southern half of Bethells beach, and the large congregation of gannets, shags, shearwaters, gulls, terns and skuas could be more easily watched, though visibility was still limited by distance and windblown spray.

About 80 Gannets (S. serrator) were present at the shoal, and provided a fine exhibition of vertical diving. When the hunt was at its height they flew to and fro low over the water and engaged in shallow diving, entering the water at an angle of about 45 degrees. After each period of intense feeding activity many of the Gannets rested on the water; subsequent takeoff was a laboured operation, accompanied by strong wing-flapping and paddling with the feet.

Spotted Shags (S. punctatus) were constantly on the move between the shoal and Ihumoana at the north end of the beach, in singles and small parties of up to six birds. When the fishing was at its best Edgar

the number of shags present at the shoal usually varied from 50-100 at any one time.

On January 22 and 23 the concentration of skuas numbered at least twenty. Most of the time they worked on the main body of fishing terns, and only occasionally came closer inshore while chasing a tern that was flying back towards the rock. Periods of intense activity alternated with periods of rest, during which a good proportion of the skuas sat on the water, sometimes fairly close to the beach, usually singly, though on two occasions I saw four skuas swimming together, once with a fifth bird nearby. Normal flight is graceful, with a good deal of gliding; on one occasion twelve skuas were seen to fly line ahead low over the water, followed at some distance by a thirteenth. When in pursuit, flight was accelerated to an extraordinary degree, both wings and tail being used to the limit in following every turn and twist of the hunted tern; the feet of the skua, normally held close to the body, were frequently dropped during the chase. Single skuas circling in the air usually attacked from above; skuas which had been swimming and rose from the water to return to the hunt were seen to attack both from above and from below. Frequently two, sometimes three, and once four, skuas attacked a single tern; usually only one skua dropped to retrieve the fallen fish but on one occasion two skuas swooped down and appeared to be squabbling for possession, on the water. Usually the chase was pursued with great persistence until the tern dropped its fish, but on January 22 and 23 when there was the greatest profusion of fish, the skuas seemed inclined to give up the chase much more easily if the tern was agile enough to escape in the early stages of the attack. At one time on the 23rd when most of the terns were resting and the shoal was attended mainly by gannets and shearwaters, some skuas were observed to join in the fishing and catch fish for themselves.

Roughly two-thirds of the skuas were in light phase plumage; several in adult dress with dark cap, some with and some without darkish pectoral band, and with varying amounts of barring on upper and under tail coverts. One younger bird (probably second winter) had a brownish crown, whitish face with darker lores, dark wings and tail and fairly definite barring on the underparts, strongest on the breast; another (perhaps first winter) appeared altogether a greyer bird with underparts continuously but more obscurely barred and the head and neck whitish but much tinged with brown.

One dark bird had a general appearance of mixed brown and light brown; a second was much darker brown, with small pale tips to the wing quills and underparts below the breast obscurely barred brown and greyish white; this bird was on two occasions observed to fly down and pat the water with its feet. Most of the skuas were undoubtedly Arctic (S. parasiticus) but of the remaining dark birds on which little or no barring was noticeable one, watched for a considerable time sitting on the water close to another dark bird, both birds in the same field of my binoculars, was so markedly larger than its companion that I think it must have been Pomarine (S. pomarinus), although the diagnostic projecting tail feathers were not visible from my observation point. In flight the skuas showed varying amounts of white on the wing quills but what with the extreme activity, the distance and the driving spray I was unable to make any very useful notes on this point.

SHORT NOTES

LITTLE EGRET AT GREYMOUTH

A Little Egret (Egretta garzetta) was found by me at the abattoir paddock on 15/5/60. The day was very hazy although fine. The bird was first seen when preening its neck feathers and I was struck by its slight build as compared with a White Heron (E. alba). The Little Egret was scary and I was not able to get near to it for a start. However, it flew a short distance and landed on a lagoon edge near a road. This enabled me to obtain a view from about fifteen yards and to get a closer look at its bill, which is not nearly as heavy as that of a White Heron. In the afternoon I was able to make a comparison with a White-faced Heron when the two were feeding in the same shallow pool, ignoring the vigorous protests of a Pied Stilt.

From a range of ten to fifteen yards I used a 20X telescope and 10 x 50 binoculars. The Little Egret is of much the same height as the White-faced Heron but has a slighter body although they appear much the same until the Little Egret unfolds its neck, which adds to the apparent body size. The tip of the bill was black on both mandibles. The upper mandible was black for about two thirds of its length, then changed to patchy orange and black before changing to yellow orange, which was the same colour as the skin on its face. The lower mandible, apart from the black tip, was more of a lemon colour, and at medium range, without the use of binoculars, did not show. The effect was to give the appearance of a slightly down-curved bill as the black on the upper mandible and the black on the tip of the bottom mandible showed up reasonably well. The iris appeared to be a lemon colour. The plumage was white and at times there appeared to be a partial ruff at the bottom front half of the neck. Small plumes were developing in a tuft at the nape at about the same level as a line through from the mid-line of its bill. These were quite difficult to see unless the bird was at a favourable angle and would be about one inch to one and a half inches long. It appeared to raise a crest at times, but this was possibly caused by the wind blowing in behind its head feathers. The plumes were showing when all other feathers were lowered. The legs were a dark grey but at the back on the tarsus and slightly above appeared to have a greenish colour hard to describe __ perhaps a gascape green. The feet appeared to be yellowish green underneath but this was hard to tell, as the feet were seen at about forty yards as the bird changed from a one-legged resting position to a two-legged stance. In flight the Little Egret shows more slender wings and a shorter and quicker wing beat than that of the White Heron. The flight of the White-faced Heron is much more bouncy ____ slow bounces.

On 19th and 20th May, 1960, I located the Little Egret at Cobden Lagoon, where it appeared to be keeping company with Whitefaced Herons, though it was moving about quite a bit because of their alert nature. However, it was feeding at times about twenty yards from a White Heron, so that a comparison of stance and feeding was facilitated. The Little Egret appears much smaller than the White Heron and is a much more active bird. It carries itself in a purposeful but almost furtive manner and keeps its neck tucked in and head held low. It kicks the weed to stir out fishes (a White-faced Heron habit) and may gallop quickly after them, before making a thrust with its low-held head. This constant activity and quick walking down the pool is quite unlike the normal movements of a White Heron, which walks slowly and carries itself erect, holding its neck and bill high. The neck appears to have a backwards kink in it about two thirds of the way to the head. While fishing the bird is very deliberate and is stationary frequently. It holds its head high with neck outstretched, slowly reaches forward and out while lowering its head somewhat and flexing the neck a little, then catches its food with a swift thrust. Once only, in many hours of observation, have I seen a White Heron run. It caught a fair sized Yellow-eyed Mullet (commonly referred to hereabouts as a Herring) and attempted to change its grip, but dropped the fish, which left a "v" shape in the shallow water as it made off rapidly. The White Heron ran in a most ungainly fashion for about ten yards then gave up, assuming what appeared to be a most indignant attitude. The heavier orange bill, heavier body, more upright stance, and generally more deliberate movement aid identification of the White Heron. Perhaps the manner of carrying its head held high is the most important feature. The Little Egret keeps its head low.

It appeared that if the Little Egret and White Heron came into competition for food supplies, then the Little Egret would get more, than its share in shallow waters.

_P. GRANT

★

ANTING OF STARLINGS AND CHAFFINCH

I have been very interested in the notes on "Anting" as, from 18th December, 1959, until 27th April, 1960, Starlings (Sturnus vulgaris) were anting about 30 feet away from my kitchen window. The performance took place at any hour of the day from 8 a.m. until 5.45 p.m. and the procedure was similar to that described by Bathgate (Notornis VIII, 265) except that the birds, if disturbed, immediately flew off.

The most spectacular exhibition I was fortunate enough to witness was that of a Chaffinch (*Fringilla coelebs*) where the bird was much more excited and appeared to be in a greater frenzy than the Starlings.

All the anting was done in one particular portion of my neighbour's lawn under and to one side of a maple. During December and January, when the Starlings were accompanied by young, in no case did the young birds "ant." From my observations, the young Starlings had almost completely attained adult plumage before they began anting.

Although Blackbirds (Turdus merula) were frequently feeding in this particular area, at no time did I ever see a Blackbird ant.

__ L. E. WALKER

FEMALE CHAFFINCH SINGING

Among other birds a pair of Chaffinches (*Fringilla coelebs*) resident in the garden is attracted by kitchen scraps suitable for bird food put out on the lawn. On 15/8/59 the hen settled on the short grass and moved about seven feet to the food, singing as she went. While feeding she continued with short bursts of song. The usual final notes of the full song were not added. The movement of her bill and

The throat was clearly observed throughout at twenty-seven feet.

cock, a fine bird in good colour, was not present at the time. B. W. Tucker (The Handbook of British Birds) states: "Im-perfect song occasionally from female." That this bird was a female can hardly be doubted. It was as pale as a Chaffinch is ever seen; whereas in August even a young male would show some darker shading or definite colour. Besides the male bird the only other Chaffinch seen about at that time was an undersized female, which could have been a chick of the previous season. The garden pair later built a nest near the house, but deserted after two eggs had been laid.

___ (Mrs.) H. M. McKENZIE

one male and one female

showing juvenile markings.

ARE RIFLEMEN POLYGAMOUS?

During November and December of 1959 and 1960 I found seventeen nests of the South Island Rifleman (Acanthisitta c. chloris). Of these nine were 10ft. or more from the ground and were not followed further; and two others were not studied through lack of time or opportunity. Thus there were six nests which were observed from a photographic hide, set at 3¹/₂ft. from the nest, for periods ranging from four to eight hours each.

Of these six nests, four had more than the expected complement of two birds in attendance, viz.

Nest No. 2: 1 male and 2 females No. 13: 2 males and 2 females,

No. 9: 2 males and 1 female

No. 10: 1 male and 2 females

(v. Plate XXIX) At all four nests the essential criteria of having three (or four) birds at the nest at the same time, all carrying food and all being seen to enter the nest, were fulfilled.

While this is a small series, an incidence of four cases of polygamy (if polygamy is the word to use without too much being assumed) out of the six nests which were watched closely, seems to me a sufficiently high proportion to warrant the assumption that this behaviour is not just abnormal. Since Riflemen are quite strongly territorial, the occurrence of two males to a single female was therefore doubly surprising.

The occurrence of the two birds with juvenile markings I do not attempt to explain. The possibilities, though, provide interesting speculation. (a) That unoccupied birds on discovering a nest take a hand in feeding the young. There is something 'old' which goes on with Yellowheads (M. ochrocephala) which could possibly be explained along these lines. I believe, too, that Guthrie-Smith enter-tained similar suspicions of Whitehead (M. albicilla) and Southern Skua (Catharacta lonnbergi) (v. Bird Life on Island and Shore 73-79 and 182-192). In my opinion the Rifleman is too strongly territorial to tolerate this.

(b) That they were part of an earlier brood helping with the nest. If this was so then they were doing something which \overline{I} have not seen recorded about any other bird.

If neither of these suggestions is acceptable, then we are back to polygamous nesting, which by definition implies sexual maturity. The differences between adult and immature Riflemen are very marked, particularly the streaky spotting on the under surface, which leaves no



[M. F. Soper

XXV — Once again we are indebted to Dr. Soper of Queenstown for a set of superb photographs. Shoveller (A. variegata) duck approaching nest. Note filter bristles along the side of the bill.



IM. F. Soper

XXVI — Male Banded Dotterel **(C. bicinctus)** with newly-hatched chicks. That on the right is still wet. Within $2\frac{1}{2}$ hours after hatching all had left the nest.



[M. F. Soper

XXVII — Wrybill (A. frontalis) returning to its eggs on the Rakaia. The nest-site among large, round stones, free of drift and growth, is typical. Note the stone-like eggs.



[M. F. Soper

XXVIII --- Gray Warbler (Gerygone igata) at its nest in a mata-gouri.



[M. F. Soper

XXIX — Rifleman (A. chloris) female with juvenile markings taking food to the nest. This nest was attended not only by two adults (m. & f.), which did most of the feeding of the still-downy chicks, but also by two juveniles (m. & f.), which brought food to the nest approximately half-hourly. 130



[P. Morrison

XXX — The Kakapo (Strigops habroptilus) has become very scarce. Ornithologists have read with interest and relief that four have been captured in the Tutoko valley and that an attempt will be made to breed this curious 'owl-parrot' in captivity.



[P. Morrison

XXXI — In these two photographs are shown the first (wire in background) and third Kakapos captured alive, after some years' searching, in January, 1961.





XXXII — White Tern (Gygis alba) and chick on a typical nesting-bough. Norfolk Island and the Kermadec Islands are its nearest breeding places.

SHORT NOTES

possibility of error for the photographer in a hide. These events were duly recorded on 35 m.m. Kodachrome. Questions which remain are:______ (a) How long do young Rillemen retain immature plumage? Could, for example, a late nestling of last season still be in juvenile plumage in November? (b) Is it possible for a Rifleman in what appears to be obviously immature plumage to be sexually mature?

M. F. SOPER

FAIRY PRION CHICK ATTACKED BY TUATARA

On the night of 25/12/60, as I was walking down the footpath below the lighthouse on The Brothers, I heard a petrel chick crying. I had a torch with me and I soon noticed the tail of a Tuatara protruding from the burrow from which the sound was comnig. The tail disappeared and shortly the Tuatara came out of the burrow with the small chick of a Fairy Prion (*P. turtur*) in its mouth. The chick was held by the tail and was crying loudly. The Tuatara stopped and watched me for a short while before making a dash for the taupata scrub about a yard away. As it reached the scrub I seized the Tuatara by the tail and pulled it out. It still held on to the chick until I squeezed it by the neck.

On examining the Prion nestling, I found its rear quarter was badly torn with most of the down missing. I called Mr. Staley and Mr. Clearly and explained what had happened. Then as we knew the burrow from which the chick had come we returned it, though its chances of survival were small.

At various times I have found around this lighthouse station a number of dead chicks with heads missing and parts of the body eaten.

A. WRIGHT

(It has often been suspected that Tuataras may maim and partly devour small petrel chicks (cf. Notornis VIII, 135). This seems to be the first eye-witness account of an actual assault.__Ed.)

*

MOREPORKS IN A NESTING BOX

Moreporks (*Ninox novae-seelandiae*) were known as regular nocturnal visitors to the grounds of King's College, Middlemore; and on one occasion one was seen roosting by day in the gloomy heart of a large holm-oak. As there were no hollow trees in the vicinity where a Morepork might nest, a nesting box, measuring 15in. x 10in. x 9in., with hole of 3in. diameter, was hopefully put up in this tree in 1958. Starlings, Mynas, Opossums showed some interest, but it appears that the box was finally occupied by rats.

In 1959 the holm-oak had to be felled, so the nesting box was transferred to one of a row of *Cupressus macrocarpa*, some 300 yards away and re-erected at about 40ft. The same year the box was used by a pair of Starlings; and Starlings again appeared to have reclaimed it late in September, 1960. But on 2/10/60 both Starlings were high in the tree screaming abuse in the direction of the box, in the entrance of which a Morepork was visible. During the ensuing weeks a Morepork was usually in or near the box.

The first egg was laid on 20/10/60 and a second probably on the

next day. The eggs measured 38.25×33 and 40×33.5 m.m. After 30 days the first egg hatched early in the morning of 19/11/60 and the second early the next morning. This rather long incubation period is corroborated by Moon (*Focus on N.Z. Birds*, p. 45) who gives 30.31 days. For the first few days the chicks were fed largely on insects, among which were tree-weta identified by their mouth parts, and huhu beetle. Gradually mice, young rats and birds were added to their diet. The remains of Housesparrow, Goldfinch, Chaffinch and Waxeye were identified from the box. At one examination, for instance, it contained four Housesparrows and a mouse; at another a Waxeye, a Goldfinch, two mice and bits of weta.

During the incubation period only one bird at a time occupied the box. Two days before the eggs hatched, the mate of the sitting bird began to roost in the dark recesses of a nearby tree during the daylight hours; and for a week after the chicks had hatched it continued to roost close at hand.

After a week the fluffy white down of the owlets gave way to a coarser grey down. Three weeks after hatching they were almost fully feathered on head, breast and back. They were still in the nest when term ended on 12/12/60.

Despite the noise of heavy roadmaking machinery and of rifle shots from the school range not twenty yards distant, the clutch was successfully reared. Our visits to the nest seemed to be taken as a matter of course. It seems that by thinning out the Housesparrow population and by taking rats and mice, Moreporks can serve a very useful purpose in a built-up area. Other naturalists may be interested to try a similar experiment for themselves in areas where there is a lack of natural nesting sites.

M. J. HOGG P. D. G. SKEGG

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COMMUNAL DISPLAY IN THE SHINING CUCKOO

Perusal of a recent note on this subject by M. Fitzgerald (Notornis IX, 9) prompts me to record a personal observation made at Bethells in January, 1951. Between 15th and 18th January Shining Cuckoos (C. lucidus) were observed daily in ones and twos, in trees around the homestead and feeding on caterpillars among the lupins on the sandhills. About midday on the 16th and again on the afternoon of 17th January, parties, each of four cuckoos, were seen in a grove of pohutukawa trees. On both occasions the birds were very active, moving by short flights from branch to branch and from one tree to the next, usually keeping to the top layer of foliage. During the periods of five to ten minutes for which this activity continued the birds kept up a constant trilling chatter; at the end of each period they dispersed. On the first occasion the cuckoos were the only birds on the tree, but on the second occasion White-eyes, Housesparrows and a Chaffinch were also present. I noted at the time that two of the cuckoos were heavily barred on the whole of the undersurface, but the barring of the other two appeared browner and more mottled, except on the sides of the body where the bars were darker and more regular.

A. T. EDGAR

PIED STILTS' SHORT INCUBATION AND FLEDGING PERIODS

On 25/8/59, a pair of Pied Stilts (*H. leucocephalus*) was seen making a nest in a wet hollow, the site of the first nest of 1944.

Aug. 27th, 2 eggs; 28th, 3; 29th, 3 at 8 a.m.; 30th, 4 at c8 a.m.

Sept. 21st, 6 a.m., one chick almost out of egg. The other three eggs chipped a little. 6 p.m., one chick two yards from nest and two others just hatched, being still wet.

Sept. 22, 7 p.m., three chicks away from nest. The fourth egg still chipped. The bill of the chick was seen moving.

Sept. 23rd, 6 a.m., last chick had hatched.

Sept. 24th, last chick dead one foot from nest. Its hatching was abnormal, so is not further treated.

The incubation period, from Aug. 29 or 30 to Sept. 21, was either 23 or 22 days, depending on whether the last egg was laid after 8 a.m. on Aug. 30, and whether incubation began on 29th or 30th. It is unlikely that the bird started to sit before Aug. 29 as all the eggs chipped on the same day, Sept. 21. It seems highly probable that the incubation period was only 22 days.

On Oct. 18 the three young Stilts all flew. The hatching to flying record, Sept. 21 to Oct. 18 is definitely 27 days. These chicks grew very fast and were fine specimens.

Summary

The incubation period was almost certainly not more than 23 days and is thought to have been really 22. The shortest record previously was 23 days for one chick only of a brood in 1947 (N.Z.B.N. III, 108). Previous records have been 23 (one only) to 27 days, with an average of 25.

The hatching to flying period was 27 days, also the shortest yet recorded. The shortest periods previously were 29 days for one brood and for one chick of another brood (*Notornis* IV, 119). Earlier records were 29 to 37 days and averaged 32.7, excluding winter breeding.

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A. F. STOKES

TATTLER AND HUDSONIAN GODWIT IN THE HEATHCOTE-AVON ESTUARY

On 17/7/60 a Tattler (H. incanus) was present with about 3000 Oystercatchers (H. o. finschi) and 115 Godwits (L. lapponica baueri) at the high-tide roost near the entrance to the Heathcote-Avon estuary. A strong south-west wind was blowing and the Tattler was standing with the Godwits, maintaining its foothold with difficulty; in fact, it seemed literally to be sheltering behind them. Characters particularly noted were the yellow legs; a dark line through the eye, white face, uniform dark crown and back; faint bars on upper flanks but otherwise no markings on the underparts. It was evidently a young bird. If adult, it should have assumed breeding plumage and left New Zealand in March or April instead of staying over a southern winter. After its discovery by E.G.T., it was closely studied by several members of the O.S.N.Z. when they were carrying out a quarterly wader count.

It could not be found amongst the larger waders when approximately monthly observations were made during the following five months (E.G.T., J. R. Jackson and E. H. Southerill). It was possibly missed owing to the numbers of birds present. However, it is likely that it shifted to roost amongst gulls in the north of the estuary, or shifted quarters to adjacent areas, viz. Waimakariri lagoon or Lake Ellesmere.

What was presumably the same Tattler was again found by R.B.S. on 10/1/61 on the South Brighton sandspit at full tide. It was standing on dry sand up the beach about fifty yards from the water's edge, the only smaller wader among about 1500 very approach-Yellow legs, dark line through eye and white superable Godwits. ciliary stripe were conspicuous features. It was more nervous than the Godwits, bobbed its head and ran among them till it was lost to sight. Shortly after, it was seen in flight at the head of a small group of Godwits and a doube call-note, not loud but somewhat resembling that of a distant Oystercatcher, was heard twice. As the tide began to ebb, the Tattler fed, especially among floating and stranded green sealettuce (Ulva sp), often running quickly, while a fence of protecting Godwits continued to drowse. At no time while it was under observation did it associate with Oystercatchers. No barring on the underparts was noted; but there was faint shading on either side of breast and lower neck. Though the length of the groove in the bill could not be discerned, there seems to be little doubt in view of the distinctive double note that it belonged to the Siberian race brevipes; the call of the American race (incanus) is a longer rippling series of notes. Sight records of brevipes have been made previously in Parengarenga (1950-51 and Manukau (1955-59) and of incanus in Kawakawa Bay, Clevedon (1948-49). The Siberian race regularly visits eastern Australia and according to Sharland (Tasmanian Birds, p. 58) occurs every year in the Derwent estuary near Hobart.

This constitutes the first record of a Tattler for the South Island and the Heathcote-Aven estuary becomes the southernmost point which this arctic wader has been known to reach.

> E. G. TURBOTT R. B. SIBSON

On 18/8/60, during a short stay in Christchurch, I paid a visit to the Heathcote-Avon estuary. At high tide most of the waders had congregated at the eastern side of the estuary, not far from the estuary bar. As I approached, Bar-tailed Godwits were flying off in small flocks and parties to the early-exposed mudflats nearby, whilst on a shelly sandbank further on over 2,000 S.I. Pied Oystercatchers in two flocks waited for the tide to recede further. About 20 Godwits still roosted with these, but they flew off as I drew near and as they flew past me I noticed one very dark godwit amongst them. The flock flew back past me along the tideline and settled about a hundred yards away, but in the time that the flock was flying away from me I had time to see that the dark godwit had a black and white tail. I immediately followed up the flock and observed it both on the mud and in flight. The black-tailed godwit could be picked out fairly easily from the others with its dark grey-brown neck and chest, and uniform upperparts of the same colour. On being put to flight the black auxillaries and sooty underwing were very conspicuous, thus proving that it was a Hudsonian Godwit (L. haemastica). In all respects it was very similar to the bird seen at the Manawatu estuary earlier this year.

On being flushed a third time the Hudsonian Godwit flew to a mudflat now exposed well out in the estuary and could not be observed further. Its alar bar was distinct and irregular, and the white or buffy tip to its tail was not seen. It was probably an immature bird, as it was either in eclipse or juvenile plumage. Evidently it was spending the winter in New Zealand.

M. J. IMBER

(All previous records of the Hudsonian Godwit in the South Island have come from L. Ellesmere. According to the Checklist the last of these was in 1921....Ed.)

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TROPICAL TERNS ASHORE ON THE AUCKLAND WEST COAST

On 22/5/60 the remains of a White Tern (Gygis alba) were found on Bethell's Beach (Te Henga) on the Auckland west coast by two schoolboys, N. J. Ledgard and B. Jones, who accurately identified the remains and brought them to me. The specimen is very battered, but enough is left to enable a certain identification to be made. The skull, with its distinctively upcurving lower mandile, is intact; the feathers are strikingly white and four surviving primaries show the dusky shafts which are mentioned in all authoritative descriptions of this small white tropical tern. Feet and tail are missing; so that the only significant measurement which this specimen provides is of the exposed culmen, 39 mm.

The bird had obviously been ashore for some time and must have strayed south into the Tasman, possibly from Norfolk Island in late summer or autumn, the season when other tropical sea-birds such as Bosun-birds, Frigate-birds, Brown Boobies are most frequently reported off the New Zealand coast.

The half-dozen previous records of the Sooty Tern (S. fuscata) in New Zealand all seem to show that it may be expected off the coast of the North Island in late summer especially after a northerly blow. It was therefore with some surprise that I was asked to examine two specimens which had been driven ashore in the third week of August, 1960.

During a stay at Bethells from August 16-20, 1960, Mr. N. M. Gleeson patrolled the beach daily, usually finding a few prions (*P. turtur, salvini, belcheri*). On August 19 he picked up, soon after it came ashore, the first Sooty Tern (*S. fuscata*) to be recorded in New Zealand since 1951. Then on 23/8/60 M. J. Hogg, N. J. Ledgard and P. D. G. Skegg visited Muriwai to find that the beach was strewn for some miles with wrecked sea-birds, most of which must have been cast ashore in the previous week. The wrecked birds were mostly tubinares of southerly origin and included, among many others, Gray-headed and Buller's Mollymawks, prions of five species and single specimens of Blue (*H. caerulea*), Gray (*Pr. cinerea*) and Westland (*Pr. westlandica*) Petrels. Curiously out of place among these frequenters of colder seas was a second Sooty Tern.

Both specimens, which appear to be adults in full breeding dress with very long tail streamers, were measured.

		Date	Wing	Tarsus	Bill	Tail	Depth of fork
(a)	Bethells	19/8/60	298	21.5	42	206	114 m.m.
(b)	Muriwai	23/8/60	297	21	47	201	108 m.m.

The measurements of these two birds for wings and tail do not agree very closely with those given by Oliver (1955, p. 342).

R. B. SIBSON

LIBRARY

JANUARY, 1961

The publications listed below can be obtained on loan by members upon application being made to the Librarian, Ornithological Society of New Zealand, C/o Auckland Institute and Museum, P.O. Box 9027, Newmarket, Auckland S.E.1.

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NOTICES

A STUDY OF THE RED-BILLED GULL

In "Notornis" Volume Nine, Number One, June 1960, notice was given to O.S.N.Z. members of the following planned project:

- (a) A census of breeding colonies of Red-billed Gulls throughout New Zealand and
- (b) A study of the dispersal of Red-billed Gulls from their breeding colonies, based on a large-scale colour-banding scheme.

(a 1) Members knowing of colonies or large night roosts were asked to forward information on these to either F. C. Kinsky, C/o Dominion Museum, Wellington, or to L. Gurr, C/o Massey Agricultural College, Palmerston North.

Up to the present time, 31/12/60, except for colonies situated in the middle districts of New Zealand and one colony each on the West Coast of the North Island and on the East Coast of the South Island, no reports were received. The co-operation of all members of O.S.N.Z. is therefore again solicited.

(b 1) Colour banding of Red-billed Gulls was started this year on the following 6 colonies:

> Kaikoura Peninsula Lake Ellesmere Nelson Brothers Islands Stephens Island Kapiti Island Rotorua

and it is hoped that more gulls will be colour-banded on their night roost on Somes Island during the forthcoming winter.

Different colours were used for every colony, and a total of nearly 4,000 chicks were banded.

All chicks banded this season (1960-61) carry a metal band on their right leg and a colour-band on their left leg. This sequence will be changed from year to year, so as to enable the establishment of age groups.

All members having the opportunity of observing Red-billed Gulls either on beaches or at other feeding or roosting sites throughout New Zealand, are asked to carefully examine every flock of this species for colour-banded birds, and to report results to F. C. Kinsky, C/o Dominion Museum, Wellington.

The following data are important:

- (1) Place
- (2) Date or dates
- (3) Colour of band or bands
- (4) The position of the bands (i.e. colour left leg, metal right leg, etc.)
- (5) Number of colour-banded birds seen
- (6) Proportion of colour-banded and non-banded birds observed in flock
- (7) Numbers on aluminium bands (if read)

At some places where large numbers of Red-billed Gulls concentrate, as for example in Christchurch, Avon-Heathcote Estuary, Wellington Harbour, Waikanae, etc., colour-banded birds will be seen, starting from early February all through the winter months, and possibly throughout the whole year. Therefore as many reports as possible or summaries of observations for longer periods will be most welcome.

BLACK-BACKED GULL STUDY AT WELLINGTON

A study of the Black-backed Gull is being carried out at Victoria University of Wellington. In this connection Wellington members of the Ornithological Society are asked if they would kindly help by collecting any freshly dead birds that they may find and forwarding them either to R. A. Fordham at the Zoology Department, V.U.W., or to Mr. F. C. Kinsky at the Dominion Museum. A brief note with the specimen, stating the locality and date of finding would be very helpful.

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SPECIAL APPEAL

BACK NUMBER VOL. 9, No. 1

The June, 1960, issue of "Notornis" is in very short supply. Will members who do not keep their back numbers please send this copy to:___

Mrs. Hetty McKenzie, Journal Despatch Officer, P.O. Box 45, Clevedon.

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BACK NUMBERS OF "NOTORNIS"

Members are reminded that back numbers of Notornis and the earlier N.Z. Bird Notes are obtainable from the Society. Enquiries about costs and the parts still held in stock should be made to:______ Mrs. Hetty McKenzie, Box 45, Clevedon, Auckland.

Other publications available are: The Takahe (5/-); Identification of Albatrosses (1/-); Reports and Bulletins, 1939-1942, with Index, (12/-), Index Alone 1/6. These precede Vol. I of N.Z. Bird Notes and record the first three years of the Society's work.

As there is a steady demand for back numbers of *Notornis* and especially for the earlier N.Z. Bird Notes (1943-1950), members are asked to offer to the Society, for gift or sale, past numbers which they no longer need.