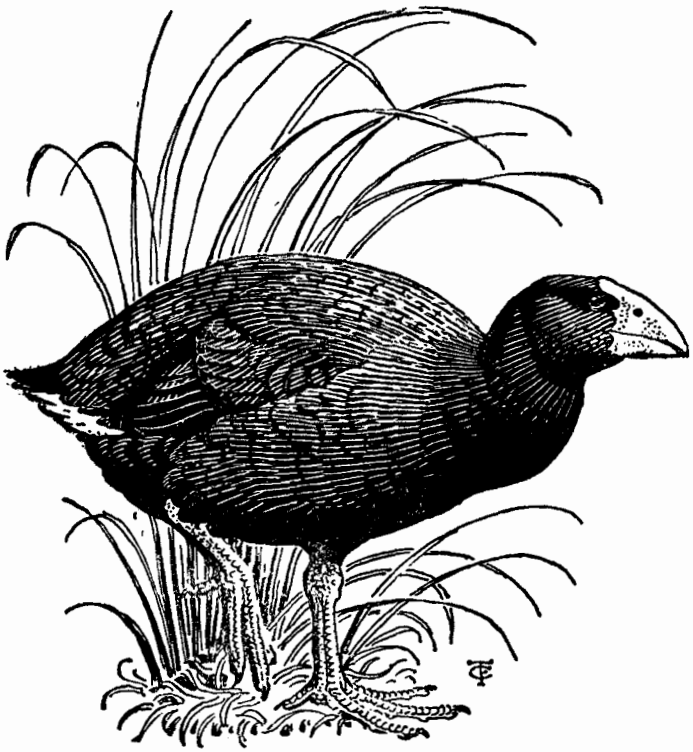
NOTORNIS

Journal of the Ornithological Society of New Zealand



Volume 30 Part 1 March 1983

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NOTORNIS

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VOLUME 30 PART 1 MARCH, 1983

INFLUENCE OF PACK ICE ON NON-BREEDING SOUTHERN BLACK-BACKED GULLS (*Larus dominicanus*) IN ANTARCTICA

By NEIL P. BERNSTEIN

ABSTRACT

Winter movements of Southern Black-backed Gulls at Palmer Station, Antarctica, correlate with shifts in pack ice. Numbers of gulls increase when open water appears near shore, exposing foraging sites, and when human wastes are available.

INTRODUCTION

Bird behaviour and reproductive success in polar regions are often influenced by ice cover (Taylor 1962, Yeates 1968, Bianchi & Karpovitsch 1969, Ainley & LeResche 1973, Watson 1975, Parmelee *et al.* 1977 and 1978, and Ainley *et al.* 1978), and many birds migrate from these areas as winter pack ice forms and prevents inshore foraging (Murphy 1936). During the 1979 austral winter, I studied effects of fluctuating pack ice concentrations on movements and near-shore foraging behaviour of the Southern Black-backed Gull *(Larus dominicanus)* in the Antarctic Peninsula region. I was interested in the following: (1) How changes in ice concentration affected movements of gulls in and out of inshore areas, (2) What climatic patterns influenced changes in ice concentration, and (3) How changes in ice cover affected food availability. Whereas several studies (e.g. Divoky 1979, Alexander 1980, Stirling 1980, and Brown & Nettleship 1981) have noted greater food supplies at the edges of sea ice than in open sea and established

the benefit of pack ice as a source of winter food, I shall emphasise the negative aspects of pack ice.

METHODS

I recorded numbers of wintering gulls daily from 1 March to 15 October 1979 in the vicinity of Palmer Station (64°45'S, 64°03'W) on Anvers Island near the Antarctic Peninsula (Fig. 1). I assessed the ice cover daily, but unlike the estimates of others, I was assessing the amount of shoreline, where gulls forage, and sea covered by ice on a 10-point scale (Fig. 2). Wind velocity and direction, temperature, dew point, cloud cover, and marometric pressure were recorded three times daily at 0830, 1430, and 2000 local time. Wind speed was converted to Beaufort scale (Fig. 2) after Ainley & LeResche (1973).

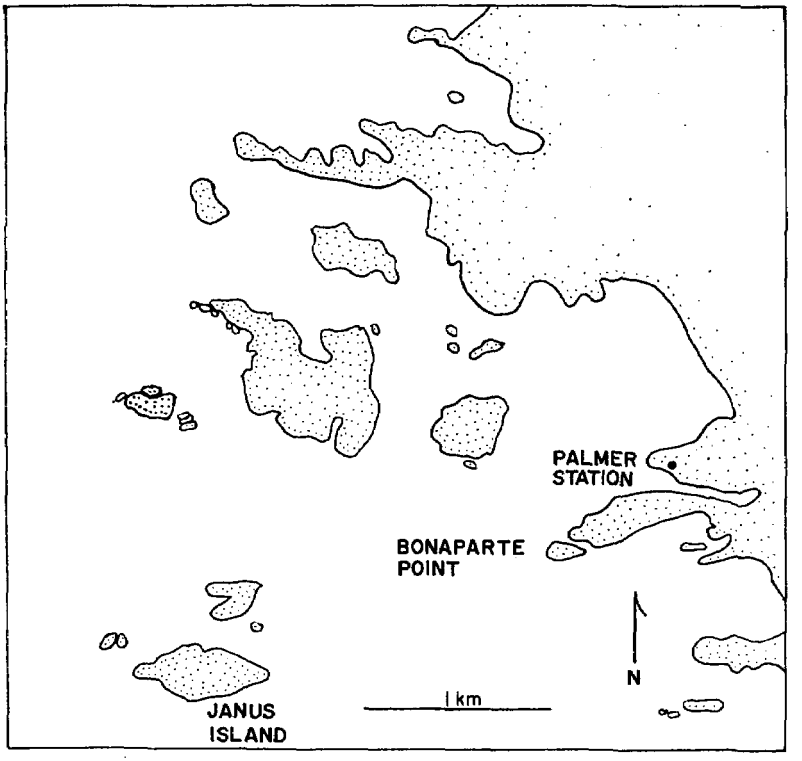
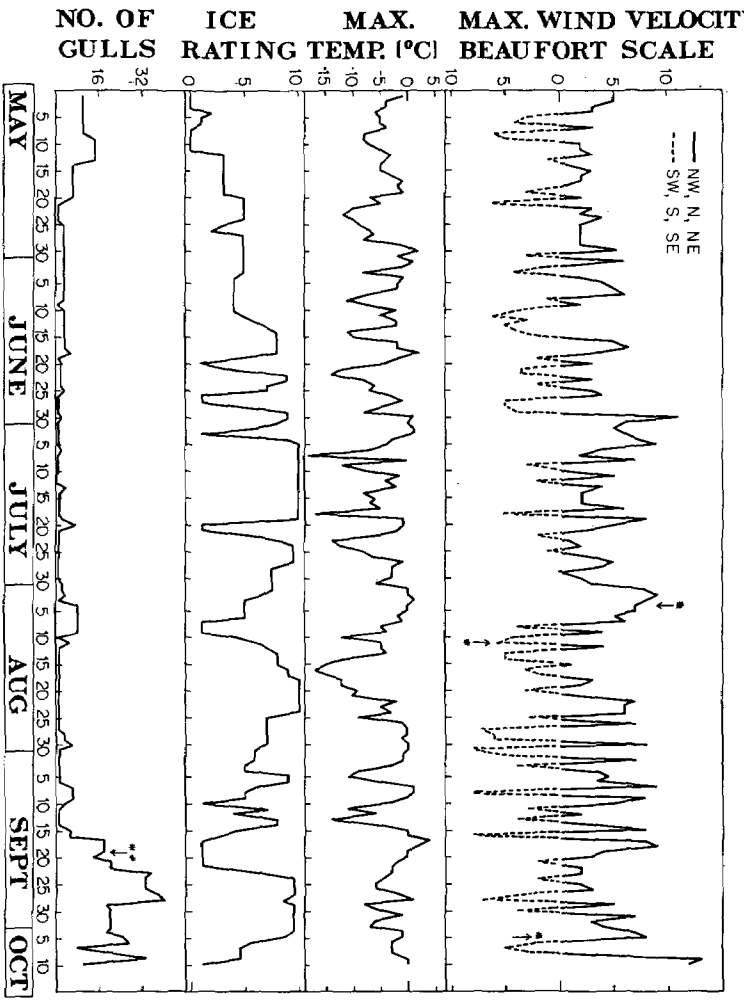


FIGURE 1 — Location of Palmer Station in Arthur Harbour, Anvers Island, Antarctica



* Northerly gusts up to force 12

** Onset of cannon-net baiting

Ice conditions: 0 = most of area and shorelines ice-free; 1 = area within 1 km mostly ice-free, possibly with pack ice beyond; 2 = loose brash and thin pancake ice with most shorelines ice-free; 3 = thickening of the ice with over 50% of the shorelines ice-free; 4 = ice almost completely frozen, together with less than 50% of the shorelines ice-free; 5 = only harbour area within 1 km of the station ice covered, but areas beyond mostly ice-free; 6 = area covered by pack ice with large areas of open water; 7, 8, and 9 = area covered by pack ice with small patches of open water of decreasing size; and 10 = no ice-free areas. Beaufort Scale (km/h): 0 = up to 1.6, 1 = 4.8, 2 = 11.3, 3 = 19.1, 4 = 28.8, 5 = 38.4, 6 = 49.6, 7 = 60.8, 8 = 73.6, 9 = 86.4, 10 = 100.8, 11 = 115.2, 12 = 217.6

FIGURE 2 — Relationship between climatic variables and gull numbers during the austral winter of 1979 at Palmer Station, Antarctica

RESULTS AND DISCUSSION

Observations of breeding gulls during the austral summers of 1978-1979 and 1979-80 clearly showed that their main food was the Antarctic limpet *(Nacella concinna)*, which the gulls captured in shallow coastal waters by plunging from short heights or by dabbling. Although Fraser (pers. comm.) noted a large winter population of gulls foraging for limpets at Palmer Station throughout the winter of 1976, limpets were not conspicuous and the number of gulls was small in the winter of 1979. Nevertheless, examination of three regurgitations and one stomach during the winter of 1979 showed that gulls were finding at least a few limpets. All garbage is sealed at Palmer Station and was not available to scavenging birds. Therefore, all inshore foraging of gulls depended on lack of ice cover.

Whereas about 50 gulls regularly breed on or near Bonaparte Point (Fig. 1), all but 5-10 gulls left the area in March 1979, when almost all limpets disappeared from shorelines. The breeding gull population did not return until 17 September, when the ice suddenly cleared (Fig. 2) and revealed thousands of limpets below the sea surface on all shorelines. Picken (1980) noted similar downward autumn migrations and synchronous spring spawns of limpets at Signy Island, 100 km north of Palmer Station. The 5-10 gulls stayed at Palmer Station until mid-May, when brash and pancake ice formed in Arthur Harbour. Thereafter, only 1-3 gulls were regularly seen until mid-September (Fig. 2). One colour-ringed bird remained all winter. It occasionally consumed raw station sewage that was pumped directly into Arthur Harbour, and it also foraged on limpets when available.

I did not find the large, stable winter population of territorial gulls that Fraser (pers. comm.) had found in 1976. Despite sudden reductions in ice cover on 20 June, 26 June and 3 July, gull numbers did not increase, but at the next ice-free period, 20 July, gull numbers increased rapidly from 2 to 9. The extra 7 birds departed when ice refilled the harbour 12 hours later. Sudden fluctuations in gull numbers in response to ice shifts were also observed between 3 and 10 August and 5 and 10 September (Fig. 2). Gulls were apparently associated with open water close to the station (ice condition 5 or less).

The influence of ice cover on the station's gull population was obvious on 17 September when winds created an unseasonable ice-free harbour and 18 gulls, including some colour-ringed breeders, suddenly appeared. These gulls remained, even though pack ice drifted into the harbour and new ice formed on 23 September. Cannon net baiting provided food for gulls from 19 September onwards, and 40 remained on 28 September when warm air temperature (1.0 °C) melted the freshly frozen surface ice that had held the old pack ice beyond Bonaparte Point (Fig. 2). On 29 September, overnight southerly winds had moved pack ice close to shore, and only 19 gulls appeared at the baiting.

Feeding was stopped on 1 October to see if the gulls would leave for lack of food. Only 5 birds appeared at a mock baiting on 3 October, although more were seen that day, and after 2 days of a severe, widespread storm, only 4 birds were present at 1330 on 6 October, a clear cold day with almost full ice cover. At 1630, the temperatures rose from −8.0 to −3.5 °C in less than 5 minutes, and north-eastern gusts (force 7) opened water west of Janus Island (Fig. 1) as freshly frozen surface ice melted. By 1730, as the winds moderated, 18 gulls were at the station; 15 minutes later, 27 gulls were there regurgitating limpet shells on the ice. I later inspected the western shore of Janus Island and found that limpets were near the surface. These observations demonstrate not only how the gulls are associated with open water, but also how inshore pack ice can prevent foraging.

Although ice cover was the ultimate factor influencing presence or absence of gulls inshore, weather was the proximate mechanism by affecting movements of pack ice. Because winters at Palmer Station are not alike, meteorological data had to be used to interpret winter observations of gulls. In some winters, winter pack ice remains solid after formation, but in 1979, ice conditions were highly variable. All nine of the sudden reductions in ice cover were attributed to north winds, especially north-easterly winds, usually of at least force 7 (Fig. 2). High winds in Arthur Harbour are therefore usually of the right direction to clear the harbour of ice.

In this study, wind-caused shifts in pack ice exposed gull feeding areas and resulted in sudden increases in numbers of gulls near Palmer Station, whereas decreases in open water resulted in lower gull numbers. Open water within the pack ice some distance away may have provided pelagic foods for the small population of gulls, which quickly moved into the harbour whenever the ice cover decreased. Similar observations of bird movements correlated with wind-caused changes in ice concentrations were noted at Cape Crozier, Antarctica, by Ainley *et al.* (1978).

While it is known that at least two banded juvenile gulls migrated from the Palmer area to Argentina and Chile (Parmelee, pers. comm.) and that juveniles and adults form separate groups before autumn migration, it is not known where the majority of birds of both age groups go. In contrast, despite greater pack ice cover, Faraday Base (Great Britain) reported no reduction of adult gulls throughout the seasons. Faraday Base, however, has an open garbage dump, as did Palmer Station until January 1976. The high winter population of gulls observed at Palmer Station by Fraser in 1976 may be attributed to the gulls foraging at the Palmer dump because too few limpets would have been available to support so many gulls in mid-winter. These observations and those made during the cannon net baiting show that the availability of winter food is very important.

Gulls that winter in Antarctica are closely associated with open waters, unless an artificial food supply is provided. Weather-caused shifts in pack ice affect the availability of inshore prey and so influence winter population levels of gulls near land. However, for a complete picture of the winter ecology of the gulls, studies are needed of how climate affects winter foraging of gulls at sea.

ACKNOWLEDGEMENTS

My thanks to the 1979 winter-over crew of Palmer Station, especially A. W. Cull and M. G. Faust for their help with this study, to B. D. Earnhardt for collecting daily weather data, to A. C. Hawkins for providing information from Faraday Base, to W. R. Fraser for unpublished information, and to K. Kohn, B. Medvecky, and D. Berube for help with graphics and typing. Helpful criticisms of the paper were made by D. G. Ainley, E. C. Birney, B. D. Heather, J. A. Haarstad, R. E. Lee, and M. W. Weller. Special thanks to S. J. Maxson and D. F. Parmelee for their encouragement and guidance. The work was supported by NSF Grant DPP77-22096 to D. F. Parmelee.

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NEIL P. BERNSTEIN, *Field Biology Program, Department of Ecology and Behavioural Biology, Bell Museum of Natural History, University of Minnesota, Minneapolis, Minnesota 55455*

Present address: Mount Mercy College, 1330 Elmhurst Drive NE, Cedar Rapids, Iowa 52402

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CORRECTION

On page 277 of the Sooty Shearwater paper in *Notornis* 29 (1982) errors occur in two places. On line 20 for 'burrows/m^2' read 'burrows/100 m^2' and on line 34 the figures given for surface eggs are also per 100 m^2. The errors were of the authors' making.

JOHN WARHAM

BULLER, HUTTON, HAAST AND HECTOR: A STORM IN A VICTORIAN TEACUP

By C. A. FLEMING

In *George Edward Lodge. The unpublished New Zealand bird paintings* (1982: 194), I made the statement that Walter Buller (1838-1906) was not a little piqued at Hutton's publication of his *Catalogue of the birds of New Zealand, with diagnoses of the species* in 1871, just before the appearance of Buller's *History of the birds of New Zealand,* issued in parts during 1872-73, the first of which was dated March 1872. This article documents the reasons for that statement, which was based on three letters now in the Alexander Turnbull Library.

Captain Frederick Wollaston Hutton (1836-1905), after joining the navy, studying geology at Sandhurst, and serving in the Royal Welsh Fusiliers at Crimea and in the Indian Mutiny, resigned his commission in 1866 and settled in the Waikato. He wrote reports on geology for the Geological Survey and was curator of Auckland Museum, but in 1871 he joined the Geological Survey, moved to Wellington, and spent three productive years writing catalogues of New Zealand fossil and living animals, which the Colonial Museum and Geological Survey published in accordance with the policy of its Director, Dr James Hector (1834-1907).

The first of these was the *Catalogue of the birds of New Zealand,* " prepared by direction of Dr. Hector, with the view of enabling naturalists in New Zealand to name correctly any bird . . . It has been drawn up chiefly from the collection of birds purchased from Mr. Buller for the Colonial Museum, which contains type specimens of all his new species, except *Gerygone assimilis* and *Creadion cinereus;* but in addition, I have examined all the public Museums in the Colony . . ." In addition to the Introduction, from which this extract is quoted, there is a bibliography, an analytical key to the families, a section called " Birds introduced by European Settlers," and 10 pages of "critical notes" justifying changes in nomenclature and containing comments. For example, Hutton states that the spider's webs " of loose texture and dull green color " mentioned by Buller as used in a warbler's nest " are fresh water algae." There are also indexes to English and Maori names and an arrangement of the genera according to " the modern system." The main *Catalogue* gives scientific and some vernacular names, author, a brief description, generally with dimensions, egg description (when available) and distribution. In this catalogue Hutton named *Larus bulleri* and *Colluricincla concinna,* which proved to be an Australian straggler (Black-faced Cuckoo Shrike).

Hutton and Buller disagreed on many minor points in their publications on birds in the early 1870s, Buller perhaps being especially 'prickly' about Hutton's comments on his *Birds of New Zealand* first published in the *Ibis* for January 1874 and reprinted, together with Buller's replies to criticisms, in *Trans. NZ Inst.* vol. 6, pp. 126-138 (1874). I think the honours were just about even at this stage and that most of Hutton's comments were reasonable, even if some were misjudged. Hutton admitted his error in dismissing the green spider's cocoons as fresh-water algae, even citing an identification of the spider responsible, but he did not credit Buller with the correction, in spite of what he says at the end of the letter below. Buller certainly gave grounds for complaint when he published Hutton's name for the Chatham Island Black Robin before Hutton's description of it had appeared because Hutton had sent the specimen to London for Buller to see, as a courtesy, on Hector's instruction, after Hutton had drawn up his description. This type of competition and jealousy was part of the excitement of being an ornithologist in a pioneer age when there were still new birds to name, but some things obviously rankled, as the following correspondence shows. The letters that follow were given to me by Sir James Hector's grandson, Mr Stephen H. Saxby of Lower Hutt, for ultimate lodgement in the Turnbull Library.

Otago Museum
Dunedin
15 April 1875

My dear Buller,

Dr. Haast was here last Tuesday and in the course of conversation he mentioned that you had been saying, on Dr. Hector's authority, that I had urged Dr. Hector strongly to allow me to publish my catalogue of birds of New Zealand, and that at last he had consented. I should be much obliged to you if you would inform me whether this is correct or not, for if it is I must take steps to contradict it, as it is altogether untrue.

The truth of the matter is this. You will remember that before you left New Zealand I drew up for you short diagnoses of all the petrels. Dr. Hector saw me doing this and asked me whether I could do the same for all the New Zealand birds. I replied that it would be very easy, and he then told me to do so. I stated at the time that perhaps you might not like it, and he said that it would do you a great deal of good, as it would popularise ornithology in the colony, and make your book sell; and also that the Museum had bought your collection of birds and ought to make use of them. All this was of course before you had left New Zealand. Subsequently he gave me definite instructions to begin the catalogue, which he said was to be the first of a series that he had determined to bring out on the New Zealand fauna (see Museum Report 1871). Of course I naturally thought that he had written to you about it; at any rate I, as his subordinate, had only to obey orders. I feel sure that Dr. Hector will not deny this and you are quite at liberty to send him this letter.

While on the subject there is another point between us that ought to be cleared up. In the **Ibis**, and in the **Trans. N.Z. Inst.**, you accuse me

of having concealed the fact of you having pointed out to me that my **Colluricincla concinna** was **Grauculus melanops**. This was a very natural error for you to fall into, nevertheless it was an error. I found out my mistake myself when unpacking the collection of foreign birds in the Colonial Museum, and my letter to the **Ibis** was posted and had left New Zealand about a fortnight (if I recollect rightly) before I got your letter on the subject. The dates of your letter from Melbourne, and mine to the **Ibis** will probably prove this, but I have not got them here.

I would not do such a mean thing as that which you impute to me, and I think that you must know that I have always fairly acknowledged my mistakes, and said to whom I am indebted for correction.

Yours truly,

F. W. Hutton.

The Terrace
Wellington
April 19, 1875

My dear Hutton,

I received today your letter of 15th instant.
I am sorry that Dr. Haast said anything to you about **" Cat. B. of N.Z."** because it seems like raking up old grievances to no good purpose.

I felt very sore at the time that my own Collection of Birds was made use of for your **Descriptive Catalogue,** in direct anticipation of my book, and I told Hector so. He assured me that he did not know the exact nature of your 'Catalogue' till it was actually in print — that in fact he directed you to prepare merely a synoptical list for the purpose of identifying the specimens.

I think he said he was away from Wellington when the "Catalogue" was published; and he called my attention to the circumstance that in this instance his name as Director does not appear on the title page. He admitted that the publication of your Catalogue was unfair to me; but he disclaimed on your behalf any intention of doing me harm.

This is a simple statement of the facts and just as I gave it to Haast, although as it would appear, not exactly as repeated to you. Hector never said that you had "strongly urged" the case, but simply that you had done the work without his seeing it, and that, although technically responsible, its character was quite unknown to him till after its publication.

As you demanded an explanation I have given it; but I think it is a great pity that Hector's name is made the subject of ungenerous discussion while he is away from the Colony and cannot be heard for many months. For my part I was satisfied with Hector's statement, and time had removed any little soreness I had felt. So it was a pity Haast raked the matter up.

Unless we all manage to pull more together, I fear we shall lose the good name we have at Home for co-operation.

Now for the other matter. Your explanation is quite satisfactory; and if you wish it, I will put the matter right, as regards **C. concinna,** in my next budget of " Notes."

You sometimes acknowledge mistakes but not **' always.'** Remember the case of the " fresh-water **Algae** " ! !

In my History of **Gerygone flaviventris** I gave you a cutting footnote; but when the proof sheets came, I magnanimously struck it out !

The " **Trans.** Vol. VII " makes good progress, and will be issued in about four weeks. I am glad you have given us Finsch's " Revision," which will be useful.

With Mantell's permission I have added an Editorial footnote **re Podiceps hectori.**

Faithfully yours,

W. L. Buller.

Wellington
May 8, 1875

My dear Hector,

We hope soon to hear of your safe arrival with Mrs. Hector, in the Old Country.

We are jogging on as usual out here. The Volume of **"Trans"** VII is making satisfactory progress. The reprint of Vol. I will be out, I understand, in about a month.

You will see from the enclosed that I have been in correspondence with Hutton about the " Catalogue." He has replied to my letter of April 19 in a very nasty spirit and says he is forwarding the correspondence to Newton. However, I will send you his last letter after I have replied to it and you will see how the case stands.

Haast has returned from Melbourne and I am happy to add that his wife is perfectly restored. He is naturally very angry with me for bringing up his private letters and says it was a " breach of trust." But he left me no alternative and has no right to complain. The following appears in this morning's Telegrams.

Believe me

Ever faithfully yours,

W. L. Buller.

The press cutting mentioned in the last sentence is no longer attached. This correspondence took place after Hutton had become Provincial Geologist in Otago and Curator of Otago Museum. As recorded by Heinrich von Haast (1948), Hutton's relations with Hector were not always cordial. Julius von Haast (1822-87) had been deeply upset by the Moa Bone Point Cave controversy (fully described in his biography by his son), which began in August 1874. His bitterness towards Hector persisted at the time of the above correspondence, and so his role as a "stirrer" is understandable. Hutton's reply to Buller, mentioned in the last letter, is not available but may turn up in other collections. Hector received the letters in London and maybe for this reason kept them at home among his private papers. He was wriggling a little, as he walked on a tightrope, to avoid falling out with his colleagues and was too good a politician, perhaps, to put any reply in writing.

Hector, however, could hardly evade responsibility for the *Catalogue.* In the Sixth Annual Report on the Colonial Museum and Laboratory, dated 31 July 1871, kindly brought to my notice by Dr Ross Galbreath (DSIR, Mt Albert, Auckland), Hector reports the

donation of the Buller Collection of 265 bird specimens "in consideration of his receiving assistance towards the publication of an illustrated work on the Ornithology of New Zealand" and then continues:

" From this collection and that in the Christchurch, Dunedin, and Auckland Museums — and assisted by an excellent critical notice of the New Zealand birds in the European collections, published in the German language by Professor Otto Finsch, of Bremen, — Captain Hutton has been enabled to draw up a complete catalogue, with a diagnosis of each species of bird in New Zealand, both native and introduced. This work will shortly be published, and it is hoped will prove of great assistance towards stimulating the study of Natural History in the Colony." (Hector 1871, p. 4).

Hector, Hutton and Buller were about the same age, 12 to 18 years younger than Haast. Hector, whom Buller (1872) called " the father of the scientific institutions in the colony," had a seniority that sprang more from his position as the Government's chief scientific adviser and from his academic status, as the only university graduate and a Fellow of the Royal Society since 1866, than from his slightly greater age. In 1874, Buller and Hutton both knew that their scientific advancement, in particular their chance of election as F.R.S., depended on Hector's good will. In 1875 the Colonial Museum was extended by erection of a two-storey office block, designed by William Clayton, on the frontage of Museum Street, the last major extension on that site (Dell 1965). Hector, 41 years of age, had justified his appointment as Director of the Colonial Museum and Geological Survey and Manager of the New Zealand Institute by many services to the Government. By 1881, he directed the Geological Survey, Colonial Laboratory, New Zealand Institute, Colonial Botanic Garden, Colonial Observatory (and time service), Meteorological and Weather Department, the Chief Inspector of Weights and Measures (and custodianship of standard weights and measures), and the Patent Office Library and the Wellington Public Library, which apparently embraced the combined libraries of the Museum, Institute, Geological Survey and Wellington Philosophical Society. Hector faced criticism from scientific colleagues, especially Hutton and G. M. Thomson in the South Island, and his organisation and influence declined in importance after the Liberal government came to power in 1891 under John Ballance and especially when Seddon succeeded Ballance as Premier in 1893.

Apart from Haast's biography, few studies of early New Zealand naturalists have been published; yet letters like those here published can shed a good deal of light on the history of ornithology and the relationships between the leading figures in Victorian science. I hope that reading these examples will lead to publication of other correspondence between our pioneer ornithologists. The final sections of the first two letters are here reproduced in longhand so that examples of Hutton's and Buller's handwriting may be available for comparison with museum labels, registers and other manuscripts.

natural error for you to fall into, nevertheless it was an error. I found out my mistake myself when ~~you~~ unpacking the collection of foreign birds in the Colonial Museum, and my letter to the Ibis was posted and had left NewZealand about a fortnight (if I recollect rightly) before I got your letter on the subject. The dates of your letter from Melbourne, and mine to the Ibis will probably prove this, but I have not got them here.

I would not do such a mean thing as that which you impute to me, and I think that you must know that I have always fairly acknowledged my mistakes, and said to whom I am indebted for correction

Yours truly

T. M. Hutton

Remember the case of the "fresh-water Algae"!! In my History of Gerygone flaviventris I gave you a cutting footnote; but when the proof sheets came, I magnanimously struck it out!

The "Trans. Vol. VII." makes good progress, and will be issued in about four weeks.

I am glad you have given us Finsch's "Revision", which will be useful.

With Mantell's "Remarks" I have added an editorial footnote re Podiceps hectori.

Faithfully Yours W. L. Buller

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C. A. FLEMING, *42 Wadestown Road, Wellington*

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SHORT NOTE

ORIENTAL CUCKOO IN SOUTHLAND

On 15 January 1983, I received a phone call from Mr C. S. Nicol, farmer of Kapuka, Southland, to report that there was an unusual bird in his garden. He further said that he thought it was a cuckoo but not a Shining or Long-tailed Cuckoo, both of which he was familiar with. From his very good description we provisionally identified the bird as an Oriental Cuckoo *(Cuculus saturatus)*.

The following day I visited the area and had excellent views of the bird at a distance of 5-20 metres through the open window of the Nicol homestead. The bird was about the size of a large Tui and obviously a cuckoo. Conspicuous features were a barred black and white breast, blackish-white spotted tail tipped with white, yellow legs and feet, head and back bluish grey.

The bird was actively feeding on earthworms which were emerging from a rain-sodden lawn. From sundry perching positions around the lawn, the bird was frequently flying to the ground to catch worms, which were eaten on the ground.

Colour photographs of the bird were taken in a poor light. To enable closer photographs to be taken, earthworms were collected and thrown from the open window. The bird approached with a minimum of caution to about 5 metres to eat these worms.

Having consulted New Zealand, Australian and British and European field guides, I have no doubt that the bird was in fact an Oriental Cuckoo.

R. R. SUTTON, *Lorneville, No. 4 R.D., Invercargill*

[Copies of colour photographs are on file with the Rare Birds Committee. — Ed.]

Tyto alba (Aves : Strigidae): A DELETION FROM THE NEW ZEALAND SUBFOSSIL RECORD

By P. R. MILLENER

ABSTRACT

Bones of an owl, from Holocene dune sands in the North Cape area, North Island, considered by Scarlett (1967) to constitute the first subfossil record of the Australian Barn Owl *(Tyto alba delicatula)* in New Zealand, are shown to be those of the endemic Laughing Owl *(Sceloglaux albifacies)*.

The current checklist of New Zealand birds (Kinsky *et al.* 1970) records four species of owl from New Zealand. The Morepork *(Ninox novaeseelandiae)* is common and widely distributed. The Laughing Owl *(Sceloglaux albifacies)*, which occurred sparingly in the southern North Island but was reasonably widespread in the eastern South Island last century, is now almost if not completely extinct, the last fully substantiated sighting having been made in 1914 (Williams & Harrison 1972, Williams & Given 1981). Bones of both these species, but of the latter more often, have been found in subfossil deposits in both the North and South Islands (Millener 1981). The Little Owl *(Athene noctua)*, which was introduced from Central Europe in 1906-10, is now widespread throughout the South Island east of the ranges and has been seen occasionally in the North Island. The Australian Barn Owl *(Tyto alba delicatula)* has been reported as a vagrant on three occasions, all in Westland (Kinsky *et al.* 1970). However, it is also listed subfossil by Kinsky *et al.* (1970: 61), Condon (1975: 217), Scarlett (1979: 76) and Falla *et al.* (1979: 171, 174) as a consequence of Scarlett's (1967) attributing to this species bones from sand dunes in the far north of the North Island.

Tyto v. Sceloglaux : *tibiotarsi and tarsometatarsi compared*

The four bones which were the subject of Scarlett's paper were collected by J. A. Grant-Mackie in 1966 from a deflation surface among Holocene dunes at Tom Bowling Bay, North Cape. They are held by the Canterbury Museum under the catalogue number Av20876. The series comprises a left tibiotarsus and two right and one left tarsometatarsi (incorrectly given as "one right and two left" in Scarlett's text p. 218, but correctly, as above, in his table of measurements on p. 219). In addition, two further right tarsometatarsi, collected from the Tom Bowling Bay dunes by Scarlett and Grant-Mackie in 1968, are listed in Canterbury Museum files as " *Tyto albo* subsp." (Av 21795, Av 21832 Fig. 1, 4).

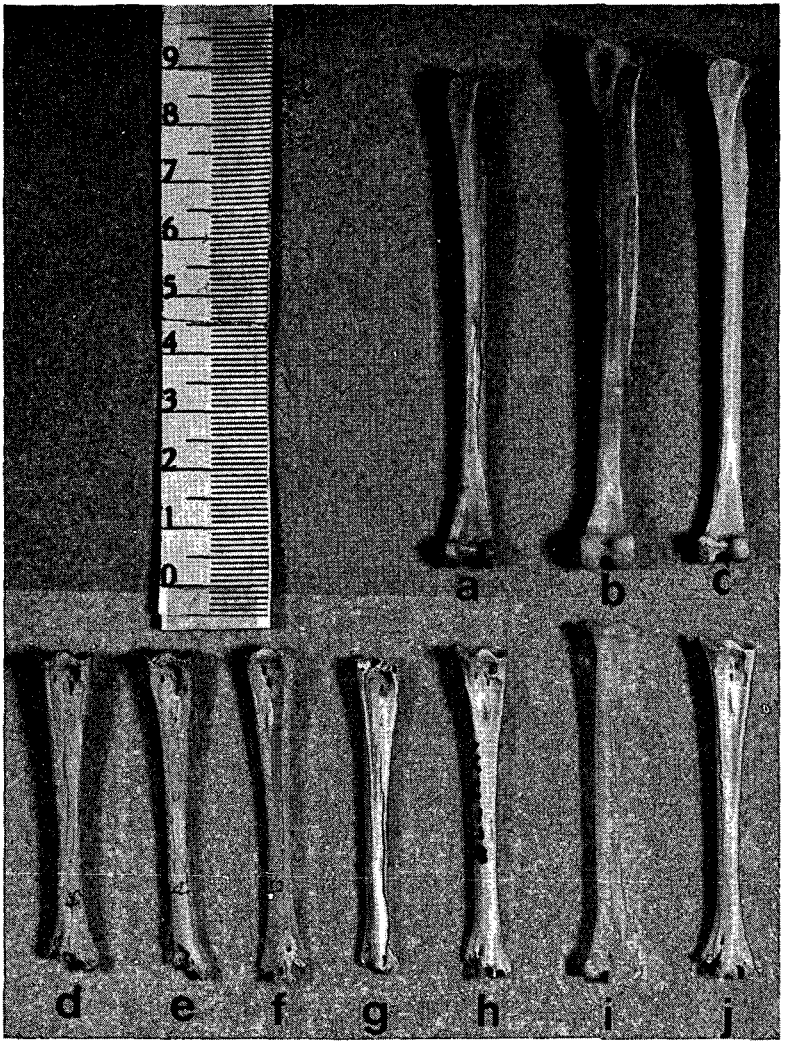

FIGURE 1 — Anterior views of left tibiotarsi (a-c); left (f) and right (d-e, g-j) tarsometatarsi. Scale numerals are centimetres. (a) **"Tyto alba"** Av20876, (b) **Tyto alba lulu** AM699, (c) **Sceloglaux albifacies** AU4834, (d-f) **"Tyto alba"** Av20876, (g) **"Tyto alba"** Av21832, (h) **"Tyto alba"** Av21795, (i) **Tyto alba lulu** AM699, (j) **Sceloglaux albifacies** AU4834

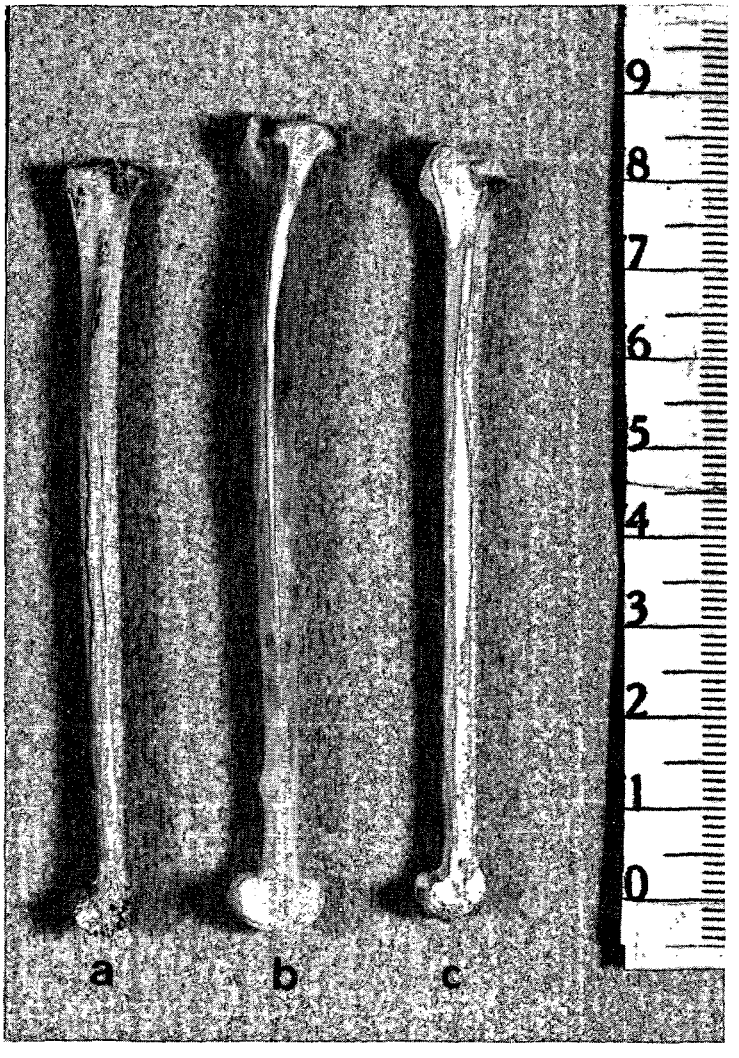

FIGURE 2 — External lateral views of left tibiotarsi. Scale numerals are centimetres. (a) **"Tyto alba"** Av20876, (b) **Tyto alba lulu** AM699, (c) **Sceloglaux albifacies** AU4834

In Fig. 1-4 the bones which Scarlett considered to belong to *Tyto alba* are shown alongside comparable bones of *Tyto alba lulu* (AM 699, recent specimen, Savai'i, Western Samoa) and *Sceloglaux albifacies* (AU 4834, almost complete skeleton of individual, subfossil. Tokerau Beach, Northland).

I have compared, carefully, Scarlett's *"Tyto alba"* bones with four recent skeletons of *Tyto alba* (*T.a. lulu* - AM699, Western Samoa; and NM17581, Nuie Island; *T.a. delicatula* - NM22102, Canberra, ACT; and Av21757, Victoria, Australia) and with all available subfossil *Sceloglaux* material (see Millener 1981: 630).

Although Scarlett (1967: 219) considered that " the bones from Tom Bowling Beach conform in every way except smaller size with those of *Tyto alba delicatula,*" it is obvious from Fig. 1-4 that, in fact. there are clearly definable differences between them and those of *T. alba.* Conversely, it is equally clear that they agree in every respect with those of *Sceloglaux albifacies* and so should correctly be assigned to *Sceloglaux.*

The differences between the tibiotarsi and tarsometatarsi of *Tyto* and *Sceloglaux* that I consider to be diagnostic I have detailed as follows, using the nomenclature of Howard (1929) and Baumel (1979).

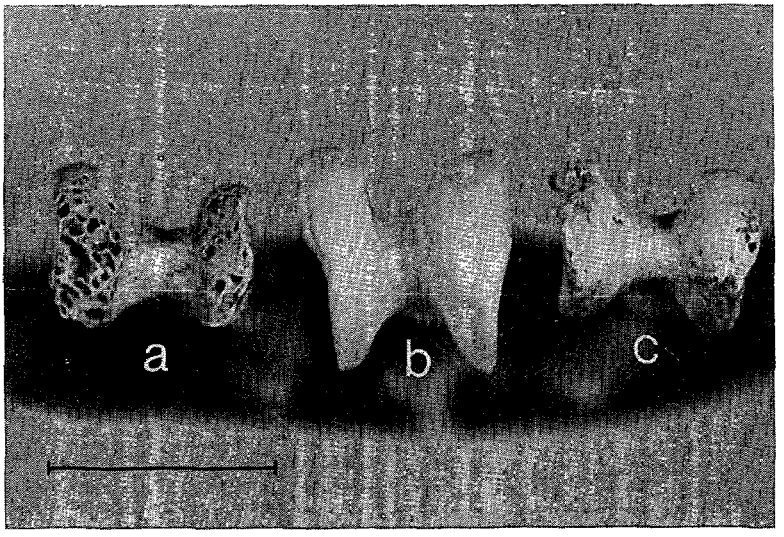

FIGURE 3 — Distal views of left tibiotarsi. Scale bar is 10 mm. (a) **"Tyto alba"** Av20876, (b) **Tyto alba lulu** AM699, (c) **Sceloglaux albifacies** AU4834

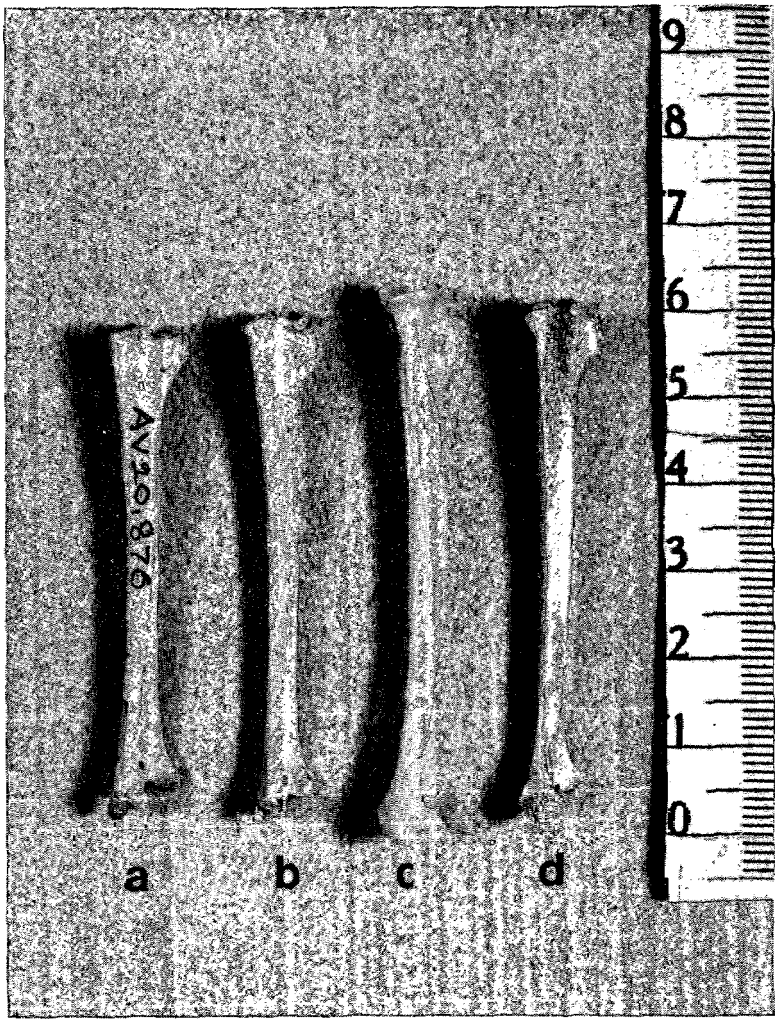

FIGURE 4 — Internal lateral views of right tarsometatarsi. Scale numerals are centimetres. (a) **"Tyto alba"** Av20876, (b) **"Tyto alba"** Av21795, (c) **Tyto alba lulu** AM699, (d) **Sceloglaux albifacies** AU4834

1. *Tibiotarsus (Fig. 1-3)*
   (a) Proximal end: Both inner and outer cnemial crests are shorter and more angular in *Tyto* than in *Sceloglaux*.
   (b) Shaft: That of *Tyto* is relatively stouter and has a greater degree of anterior/posterior curvature in the proximal third of its length. Viewed in anterior aspect the distal portion of the shaft, in the region of the tendinal groove, flares sharply toward the internal condyle in *Tyto*, but more gradually and symmetrically in *Sceloglaux*.
   (c) Distal end: Here the differences between the two taxa are most pronounced. From every aspect the internal and external condyles in *Tyto* are clearly far larger, and the anterior intercondylar fossa and posterior intercondylar sulcus are far narrower and deeper, than those in *Sceloglaux*.
2. *Tarsometatarsus (Fig. 1, 4)*
   (a) Proximal end: In *Tyto* the intercotylar prominence is larger and extends further anteriorly than does that in *Sceloglaux* (Fig. 4) In lateral aspect, the inner calcaneal ridge in *Tyto* is almost rectangular, whereas in *Sceloglaux* it extends further proximally and is more nearly triangular.
   (b) Shaft: That of *Tyto* is relatively stouter and more nearly parallel-sided. Whereas in *Tyto* the shaft flares sharply to meet the proximal articulatory surface, in *Sceloglaux* it does so smoothly and gradually from its narrowest point. In *Tyto* there is no evidence of an ossified bridge (retinaculum extensiorum tarsometatarsi) through which M. extensor digitorum longus passes, as there is in *Sceloglaux* (note that in the specimens illustrated this bridge has been broken, post mortem, in all but Av21795 Fig. 1 h.).
   (c) Distal end: In *Tyto* the trochleae for digits 2, 3, 4 are relatively more massive than those in *Sceloglaux*, and that for digit 4, in particular, extends further distally. Also, in *Tyto* the distal vascular foramen is situated more distally than that in *Sceloglaux* (cf. Fig. 1 h, i).

CONCLUSIONS

In the various features noted above and shown in Figures 1 to 4, the bones from Tom Bowling Bay (Av20876, 21795, 21832) which Scarlett considered to belong to *Tyto alba*, clearly differ significantly from those of that species. In fact, as they have all the diagnostic characteristics of *Sceloglaux albifacies*, they can be correctly assigned to it.

Subfossil avian remains are known from late Pleistocene and Holocene deposits at more than 800 localities throughout New Zealand (see Millener 1981), but the only record of *Tyto alba* has been Scarlett's. The invalidation of this record leaves the current status of *Tyto alba* in New Zealand as that of only a rare recent vagrant.

ACKNOWLEDGEMENTS

I am particularly grateful to Ron Scarlett (Canterbury Museum) for his permission to study the Tom Bowling *"Tyto alba"* specimens. Access to reference material was kindly provided by Ron Scarlett, by the late Sylvia Reed and Brian Gill (Auckland Museum) and by John Yaldwyn (National Museum). My thanks also to Roy Harris, Geology Department, Auckland University, who produced the illustrations, and to Vicky Moir for typing the manuscript.

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P. R. MILLENER, *Geology Department, University of Auckland*

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SHORT NOTES

CRESTED GREBES ON FROZEN LAKES

On 25 July 1982, Derek and Peter Howden, Marion and Ross Lane and I visited the main Ashburton lakes in Canterbury to count the Southern Crested Grebes *(Podiceps cristatus australis)*. We counted 21 birds, which can be compared with 21 counted in July 1980 and 42 in July 1981 and is well below the summer counts of 58, 57 and 54 in 1978-1980 (Sagar & O'Donnell 1982, *Notornis* 29: 143-149).

The region had been subjected to a series of severe frosts, and so very little open water was available to the grebes. Lake Emma was almost completely frozen over with only about 50 x 50 metres of open water. The one grebe seen was on the ice some distance from the open water. Lake Camp had a similar amount of open water, and the one grebe seen was on this water. Only the eastern-most of the Maori Lakes had any open water, but no grebes were seen.

Lake Heron had a small patch of open water on the southern shore near Mt Arrowsmith homestead, and three grebes were there; and another small area along the southern edge of the Cameron fan, and 15 grebes were there. These 15 were not reluctant to fly when approached and at one stage were hard to keep account of, so many

were in the air at once. One grebe, after several unsuccessful attempts to take off from the ice, found a small patch of open water and dived, coming up under some thin ice where it could get its head and neck through but not its body. It dived again, but we waited 2-3 minutes before a grebe, presumably the same one, appeared in another small patch of open water about 130 metres away. We were amazed that it could travel so far and find the small open patch in all that ice.

Lake Clearwater was completely frozen over, and in the morning the only grebe was in the centre, apparently with its foot held in the ice but not looking distressed. It was still there in the evening. On the 28th we returned, well equipped to go out on the ice, only to find a harrier *(Circus approximans)* and a heap of feathers on the ice.

DONALD GEDDES, *Valleta Farm, No. 1 R.D., Ashburton*

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A THIRD ARCTIC TERN AT THE TARAWERA RIVER MOUTH

On 18 July 1982, C. de Lange and I made two visits to the Tarawera River mouth. During the first visit, from 11-11.30 a.m., we were joined by Mr & Mrs M. Hutton and counted 39 Black-fronted Terns *(Sterna albostriata)* and 58 White-fronted Terns *(S. striata)* at roost on the beach. Each species was in a separate loose flock, but the flocks were contiguous.

C. de Lange and I returned to the river mouth at 12.30 p.m. and found an Arctic Tern *(S. paradisaea)* present between the Black-fronted Tern and White-fronted Tern flocks. At 12.35 p.m. it flew out to sea.

The day was overcast with a cool 15-20 knot north-westerly wind and the tide was low. Our vantage point, a sandbank overlooking the flat beach roost, allowed us to look almost straight down on the birds 8-10 metres away.

This bird was in the same dress as the previous two Arctic Terns seen here, the first on 10 June 1978 (*Notornis 26: 63-67*), the second on 17 May 1981 (*Notornis* 28: 213-214). As it was still in non-breeding plumage, i.e. black bill and white forehead and forecrown, and had a dark carpal bar, in July this bird must have been a subadult.

Once again the large extent of white forehead and crown, bordered with sooty black-brown, was the first feature to distinguish an Arctic Tern from nearby White-fronted Terns. The smaller size was obvious from our vantage point but we had to lie flat on top of the bank to see its short red legs.

P. C. M. LATHAM, *c/o Papamoa Beach P.O., via Te Puke*

AN EXAMPLE OF ALBINISM IN THE AUSTRALASIAN HARRIER
Circus approximans gouldi

By L. A. HEDLEY

ABSTRACT

An albinistic juvenile Australasian Harrier was trapped near Huntly, Waikato. Limited observation of the bird prior to capture suggests that its general behaviour and relationships with conspecifics and other species were normal. The bird's plumage is described and contrasted with that of normal harriers and the nature of its soft parts is discussed. Other occurrences of albinism in the Australasian Harrier are given.

On 12 May 1979, I trapped an albinistic juvenile female Australasian Harrier *(Circus approximans gouldi)* near Lake Kimihia, Waikato. Before its capture I was able to watch the bird for a few hours to see if it behaved typically, especially in its interactions with other harriers and birds.

All activity observed took place in or near a small swamp (c. 2 ha) in farmland about 1 km east of Huntly township and 0.5 km north of Lake Kimihia (37°32'S, 175°11'E) the predominant vegetation being wiwi *(Juncus polyanthemos)*. Much of the bird's time was spent perched on an old fence post in the swamp, or, on one occasion, in an adjacent 12-metre eucalypt (Myrtaceae). On both evenings that I watched it, the bird went to roost in the swamp about five minutes before sunset after making several low (2 m) circles around the swamp. Four harrier roost sites were found in the swamp, two of which, about 3 metres apart, were used by the bird. Although perching in a tree is rather unusual for an Australasian Harrier, much of this bird's pre-roosting behaviour is typical as noted by Gurr (1968), Hedley (1976) and Baker-Gabb (1978). As expected for this time of day I saw only a few brief flights, once when I flushed the bird from a road-killed rabbit *(Oryctolagus cuniculus)* on which it had been feeding, and once when it flew 3 metres from its fence post perch to search around wiwi clumps for 2-3 minutes. Although these flights were limited its flying ability was not impaired, as has been noted for albinistic birds of various species by McIlhenny (1940), Keeler *et al.* (1949) and Wetmore (see Delacour 1956), who gives an extreme example of albinistic ducks which could be run down and captured by hand. Obviously, any marked flying disability would be deleterious to a species such as an Australasian Harrier but this bird flew quite well and foraged in typical fashion.

Observed in a pastoral setting, this bird was highly conspicuous, even at a casual glance. Indeed its plumage was so striking that it could easily have been mistaken at a distance for a White Heron *(Egretta alba)* or a Cattle Egret *(Bubulcus ibis)*. Such distinct and unusual plumage has often been reported (for example, Sage 1962) as being disadvantageous in that albinistic birds are far more subject to predation than normal birds. Certainly, this bird was at risk from local farmers intending to shoot it as a trophy. However, one can find a few records of long-lived albinistic birds of various species. Middleton (1960) described an almost fully albinistic American Robin *(Turdus migratorius)* trapped for eight successive years and Oakley & Elitzroth (1980) described an albinistic male Red-tailed Hawk *(Buteo jamaicensis)* seen in an area from 1972 to May 1979. In New Zealand, an almost fully albinistic Australasian Harrier banded (L-3562) in 1963 was retrapped in the same area in July 1971 (W. M. Jukes, pers. comm.).

The response of other harriers toward the bird was seen on four occasions. Three showed little reaction, simply passing on over the perched bird, but one harrier, approaching rapidly down the wind 'fast contour hunting' (see Baker-Gabb 1978), veered from its path and struck twice with its feet at the perched bird, which immediately took flight and rose to a safe height while the attacking bird flew on. My impression was that I had seen an attempt at predation rather than some form of winter territorialism. When harriers are fast contour hunting, they are, in my experience, highly motivated and attack with great determination. The attacking bird was dark plumaged and so I believe the attack was one of mistaken identity by an inexperienced juvenile of the year. Fox (1976) has also noted inexperienced hunting behaviour by a juvenile Australasian Harrier.

Responses from two other species were also noted. Welcome Swallows *(Hirundo tahitica)* on several occasions flew close to or actually swooped at the bird, and I saw Pukekos *(Porphyrio porphyrio)* foraging nearby in the swamp. Neither species reacted any differently than they might have to a normal-coloured harrier.

After capture, the bird was confirmed as a female by body weight (935 g, including crop contents) and by the size of the tarsi and feet, which are much more massive in the female than the male (Ohlendorf 1972, Fox 1977, Baker-Gabb 1978). Given the absence of normal coloration, age was more difficult to tell. Although adult and juvenile forms of *gouldi* are usually easy to distinguish in the field, some care needs to be taken if certain age sex classes, for example, juvenile and young adult females, are not to be confused. However, because the bird was not in moult and I was able to locate and match up 'stress marks' (Hamerstrom 1967) on adjacent rectrices, I was able to categorise the birds as a juvenile of the year.

The plumage of this bird is white with 4-6 reddish-brown feathers on the head and neck and 8-10 similarly coloured feathers

scattered about the upper and lower body surfaces. The wings were entirely white with three normally coloured coverts and three partly coloured primaries on the right wing, and, on the left wing, three normally coloured secondaries and two normally coloured primaries, The tail was white except for a single black rachis.

With subsequent moults in captivity, although these have been seemingly incomplete, more normal feathers have appeared over the whole body surface and feathers previously somewhat dilute have darkened, but this trend has not progressed far, there still being fewer than 30 normally coloured feathers over the entire body. I have examined the feathers of the bird carefully for conditions such as 'silkiness' and for 'hairy' variations as found in other species by Chandler (1916), Hutt (1949) and Nero (1954) but found these not to be present. Some feathers examined were of coarser texture than adjacent normally coloured feathers and certainly more brittle since the effects of abrasion were noted on the primaries and particularly marked on the tips of the rectrices. It has been difficult, despite due care, to avoid the effects of normal feather abrasion against aviary perches and keep the bird in full feather in captivity (R. Wheeldon, pers. comm., 1982).

Lack of pigment was also evident in the bird's cere and orbital ring which were paler than the deep yellow of normal birds, although the irides were the normal dark brown of this bird's age class. The tarsi were very pale, again in contrast to the deep yellow of normal specimens and an abnormal number of tarsal scutella were seen to be lifting away. In one case an area 17 mm x 6 mm flaked away as one complete sheet. This amount of scutella loss seems excessive and has not been encountered in other captive or trapped harriers. Although the claws lacked pigment, the beak, and particularly the culmen, was normally coloured. Since capture, however, the beak has darkened somewhat but the claws remain pale.

Various authors mention albinism but their definitions and categories are essentially similar. Sage (1962) offered the most detailed definition, seeing albinism in birds as a condition involving the complete or partial absence or suppression of normal pigments and that its cause can be congenital (usually recessive) or environmental, that is, caused by diet, injury, senility, or possibly disease or shock. The lack of pigment in the bird I trapped tends toward the extreme, especially in the beak and claws and, less markedly, in the cere and tarsi. Given the bird's immaturity, its excellent physical state, and that there has been no marked reversion to normal plumage after subsequent moults in captivity, the bird's coloration must be genetically caused. Sage listed several categories of albinism: leucism, dilution, schizochroism, partial albinism, and pure albinism. Of these categories, the bird from Huntly is a partial 'albino' in that normal pigments are almost absent from the plumage and soft parts but are still present in the irides.

I am aware of no more than five reports of albinism in the

Australasian Harrier in the literature and know of two further occurrences. Buller (1898) recorded an adult female shot in Canterbury, probably during the summer of 1897. He described the bird as having a scattering of brown feathers over the shoulders, two normal-coloured coverts and one or two partly coloured scapulars on the right wing, one normal-coloured under covert on the left wing, a single normal-coloured feather on the left thigh, ' a wash of fulvous on the abdomen,' and the tail, with the exception of a single white 'inner vane' on one of the rectrices, of normal colour. This specimen could be classified, using Sage's terminology, as a partial albino, especially as the irides were yellow. Apart from these ' trifling exceptions,' Buller adds, the entire plumage was ' snow white,' and so with white wings and body but dark tail, the bird must have indeed presented ' a very striking appearance.' One other albinistic bird, reported in Oliver (1930), was noted in Canterbury. This bird, from Oamaru, was brown above with whitish edges to feathers and streaked with reddish brown below and therefore can be classified as a partial albino. Oliver also recorded a specimen from Riwaka, near Motueka, with an ashy grey upper surface and 'rosy purple' under surface. This bird is hard to classify from such a vague description. The rosy purple colour possibly arose through a dilution of the normal plumage pigments and so might the ashy grey of the upper surface. In this case the bird's condition could be classified as being one of dilution rather than partial albinism, but this is merely hypothetical thinking. As with the Oamaru bird there is no clue as to when the specimen was actually recorded.

More recently, in October 1963, an albinistic bird was banded (L-3562) at Springhills, Southland (W. M. Jukes, pers. comm.). An albinistic bird, presumably the same, was seen on at least four occasions within a radius of 16 km of Springhills by several observers, and in July 1971, the bird originally banded in 1963 was retrapped at Tussock Creek, Southland. I have seen a photograph of this bird, taken in 1971, from which a description, mainly of the lower surfaces, can be given: head and neck very dilute brown, under surface predominantly white with an occasional pale brown feather, underwing coverts dilute brown with very faint barring on both primaries and secondaries, flanks dilute brown and tail white with very dilute barring. The beak and claws were black with the tarsi, feet and cere pale yellow. The irides were very pale yellow. Unfortunately, a complete set of body measurements and body weight at capture were not recorded, and so it is not possible to sex this bird reliably. Given the washed-out appearance of its plumage, the condition of this bird can be classed as one of dilution.

I am aware of two other occurrences of albinism in the Australasian Harrier not mentioned in the literature. In the late 1960s or the 1970s, a bird was captured and held in captivity in Hawke's Bay. Apparently this bird was a true albino since it was reported by reliable

observers to have no colour pigments in any part of the plumage or soft parts (N. C. Fox, pers. comm.). Although details are lacking, I understand the bird suffered from defective eyesight, flew poorly, and was probably unable to forage for itself. In the early 1970s also, a bird was shot as it rose from a swamp near Cambridge, Waikato. Fortunately, a description of this bird is available; head white but with brown cheek and ear coverts, neck, scapulars, upper tail coverts and tail white, body dilute brown, making it a partial albino (D. R. Rosenberg, pers. comm.). I have other reports of supposed albinistic birds but these seem to be merely very pale aged adults.

Although other albinistic harriers may have been seen, it is apparent that albinism is rare in the Australasian Harrier and indeed, probably in any species where selective pressures are prejudicial towards albinism. Sage (1963) gave some figures on the frequency of albinism in free-living populations of various species and quoted Hicks (1934), who examined 10 000 Starlings *(Sturnus vulgaris)* and found 11 (c. 0.1%) with signs of albinism, Piechocki (1954) who examined 20 931 House Sparrows *(Passer domesticus)* and found that less than 1% showed traces of albinism, and Michener & Michener (1936), who checked 30 000 birds, excluding House Sparrows, during banding work, and found only 17 (c. 0.05%) showing some albinism. Quite large numbers of harriers have been trapped in New Zealand by Watson (1954) (206 birds), Fox (1977) (51), Baker-Gabb (1978) (212), myself (120), W. M. Jukes (pers. comm.) (2138), and R. Wheeldon (pers. comm.) (c. 300), but no further cases of albinism have been mentioned. Albinism is apparently an infrequent occurrence in *Circus approximans* in Australia also. D. Baker-Gabb (pers. comm.) has not found any albinistic birds in his trapping programme and knows of no occurrences in the literature. Albinism has been noted in other *Circus* species however, but the frequency of occurrence remains low. Watson (1977) offered detailed account of albinism in the Hen Harrier *(Circus cyaneus)* in the British Isles, finding records of at least six albinistic individuals killed in Scotland since 1870 and knowing of a further three birds, one from North Wales and two from Ireland. Balfour (cited in Watson) also noted occurrences of albinism, recording in over 40 years of careful observation in Orkney about 13 birds, one of which, seen before 1920, was apparently a pure albino. Watson, citing inbreeding as a possible reason for albinism gaining expression in a population, wondered if Balfour's series of sightings reflected a restricted gene pool on isolated Orkney but decided that this was unlikely since banding results over a long period of time showed that only 23% of 83 captured birds had hatched on Orkney.

Therefore, albinism can become apparent in a raptor population, even when a fair amount of recruitment from outside populations takes place, as has been observed for populations of the Australasian Harrier (Watson 1954, Baker-Gabb 1978). I shall be interested to follow up any new sightings of albinistic harriers so that any persistence of the

trait in a local population may be more fully documented. Since the work of Watson (1954) and particularly of Baker-Gabb (1978) suggests that adult harriers, having successfully bred, will return to their nesting area, it seems not unlikely that a local tendency towards albinism could become apparent, especially if a successfully reproducing individual, homozygous for albinism, were to be long-lived.

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L. A. HEDLEY, *61 Bailey Street, Huntly*

RICHARD LAISHLEY 1815 - 1897
PRIEST, PAINTER, NATURALIST

By R. B. SIBSON

Richard Laishley came to my notice as I was turning the pages of the sumptuous volume *The book of birds* edited by Averil Lysaght (v. *Notornis* 29: 79-80) and published in 1975. Plate 128 took me — and many others to whom I showed it — by surprise. It is a reproduction of a watercolour showing Blue Penguins against the background of a storm at sea. The brief accompanying text says that " Laishley appears to have been rather a melancholy amateur naturalist . . . This group may well have been painted on the outskirts of Wellington with a southerly storm blowing up."

Since the discovery of this exciting painting, I have been able to spend two mornings in the library of the British Museum of Natural History, examining a fat folio-sized folder which contains many of Richard Laishley's original paintings and drawings. They depict nearly 50 species of New Zealand birds and, as Figure 1 shows, also plants, geckos, insects and other items that would have appealed to a curious and artistic naturalist. They are not in exact chronological order.

About the same time Janet Paul, Art Librarian of the Turnbull Library, had become interested in two " fine portrait drawings signed R.L." and had traced them to Richard Laishley. I have had the benefit of discussions with her. I am also grateful that she apprised me of RL's original diary *Notes of a voyage to New Zealand 1860-1861*, now in the possession of the Turnbull Library. Ian Thwaites, librarian at the Auckland Institute and Museum, has also been most helpful.

Richard Laishley was born in 1815 at Southampton in Hampshire, the county which had inspired Isaac Walton and Gilbert White. His boyhood rambles took him beside the River Itchen and into the New Forest. Many years later he wrote " My love of natural science and objects was stimulated at this period by the attractions of the surrounding scenery, by the acquisition of some works on natural history and by the friendship of two gentlemen of kindred tastes with my own." What he called his " bias for drawing " was encouraged, and at the age of 18 he was entered as a student of painting at the Royal Academy School, Burlington House. His sponsor was W. Etty R.A., whose paintings were later to earn the admiration of that great novelist and poet, Thomas Hardy.

On 23 June 1860 RL sailed from Gravesend with his wife, three sons and one daughter. *Caduceus* was a " fine roomy ship " of

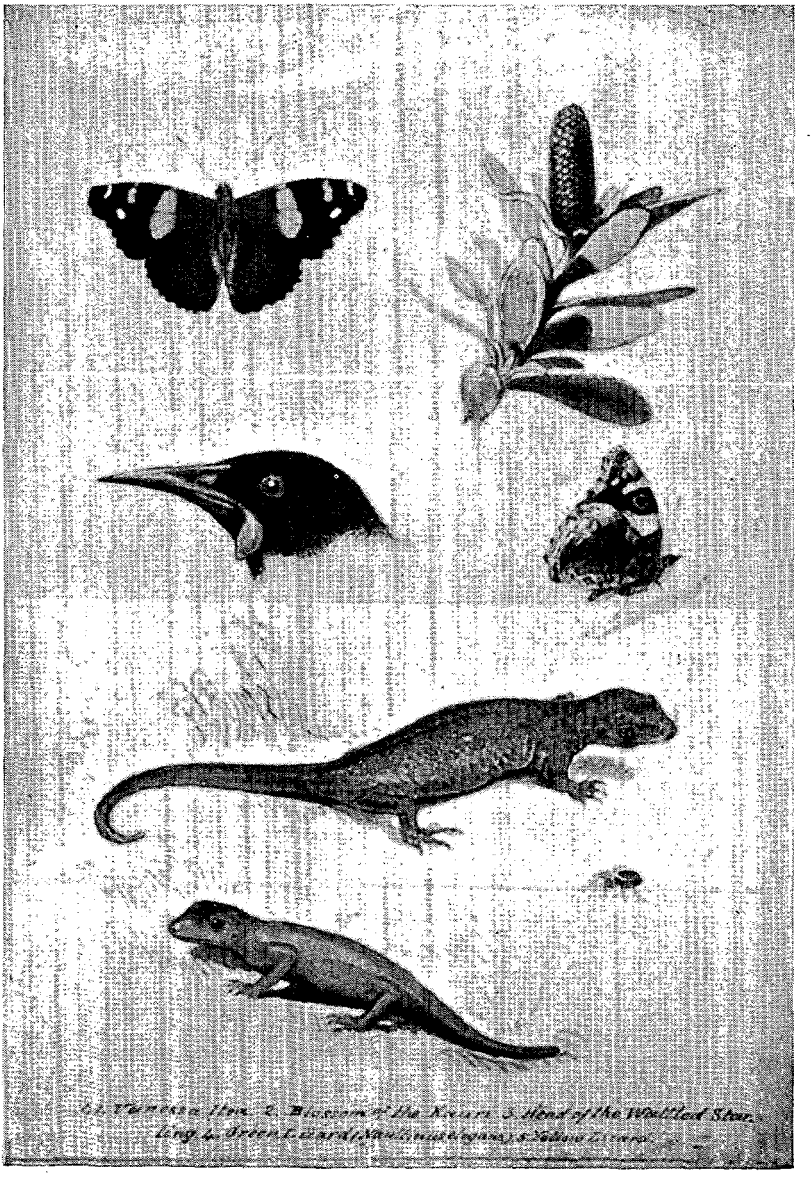

FIGURE 1 — By courtesy of British Museum of Natural History

more than 1000 tons and the Captain was " singularly well-informed "; but RL felt that certain large dark seabirds, which the Captain was calling Sooty Albatrosses, were in fact Giant Petrels. However, after a most favourable and pleasant passage of 111 days, *Caduceus* berthed at Auckland on 12 October. The diary which Laishley kept is a valuable seabird log. He continued it intermittently into 1861, and many of the entries throw light on his powers of observation and his eagerness to know the truth.

On 17 October, within a week of his arrival, he visited the Auckland Museum, " three rooms in a small one-storey cottage, not far from the Barrack Wall." There " I examined a specimen of our Captain's Sooty Albatross which went by the same name in the Museum, *Diomedea Fuliginosa;* but the nostrils were distinctly tubular and prolonged forwards through two thirds of the bill so that I still apprehend it may prove to be the Giant Petrel."

On 11 December 1860 he noted a Painted Lady *(Vanessa cardui)* at Onehunga. Like Hardy's Wessex countryman, " he was a man who used to notice such things," even if his antipodean Vanessa belonged to a different subspecies from the one he knew in southern England. Lepidoptera delighted him. He painted at least three species of butterflies and also magpie moth.

Soon after his arrival he was installed as Minister to the newly established Congregational Church at Onehunga, which he described as " an extensive village and pioneer settlement." Competition for worshippers was keen. There were already at Onehunga several churches, three of which are clearly to be seen in Hoyte's fine contemporary painting. Auckland's 25 year reign as the ' Lively Capital ' was drawing inevitably to a close. There had been no dearth of landscape painters. But as for inquisitive and observant naturalists, the cupboard was bare.

Buller, reared on the Kaipara and educated at Wesleyan Three King's College, had gone south in 1854. T. F. Cheeseman was still a schoolboy in his teens. Thomas Kirk did not arrive from Britain till 1863. On matters of natural history, whom could RL have consulted ? A famous memorial window to Isaac Walton in Winchester Cathedral, the core of RL's home county, carries the advice " Study to be quiet," an exhortation which may have suited RL's gentle disposition very well. The birth pangs of what was to become the august Auckland Institute lasted over much of 1867-68; too late for RL, who by then had thoughts of Australia in mind. Those eight years near the shores of Manukau Harbour were happy and fruitful. Most of his paintings of birds belong to this period and they are all the more precious because they are precisely dated. In all his work his eye for significant detail is manifest, so that his claim that his birds are " illustrated from Nature " is well justified. It is also clear that he often had fresh specimens in the hand. The first painting in the folio is dated March 1861 and is of a Falcon which had been shot near the Manukau Heads.

His notes read " pale throat lightly streaked; underparts darkly streaked." He was not content to sketch birds as if they were stuffed specimens. He drew Wandering Albatrosses and Cape Pigeons on the wing at sea and made sketches of a Brown Kiwi in six different positions " from observation of a living specimen."

Pastoral duties did not keep RL so tied that he could not travel. In 1863 he visited Nelson where he made a ' Sketch from the Shore ' and took the opportunity to observe South Island Robins, Yellowheads and Jackbirds. He must also have gone north because a portrait of a North Island Robin carries the note " seen near Kerikeri." 1866 was a busy year, marked among other things by paintings of *Earina autumnalis* " beautiful and very fragrant " and of a Least Dotterel which he called *Charadrius minutus,* the first evidence that Red-necked Stints may be counted among New Zealand's migratory arctic waders. There is also a fine drawing of a waka-huia, an elaborately carved feather-box in the possession of Robert Graham, whose name appears in the list of subscribers to the first edition (1873) of Buller's *History of New Zealand birds.*

After eight years of what may be called his prolific Onehunga period, the call of duty and perhaps the need for a change of scene took RL to Melbourne. Evidently before he left, his name had come to the notice of Buller, for on page 306 of the famous first edition, with reference to the then virtually unknown Cook's Petrel, we read " Captain Hutton informs me that there is a specimen in the collection of the Rev. R. Laishley." How extensive was that collection and what became of it ?

RL was not happy in Australia. The magic of " to-morrow to fresh woods and pastures new " did not work. Houses were difficult to rent and expensive. He wondered when the bubble of prosperity was going to burst. He gladly accepted an offer to rejoin New Zealand friends at Thames, where a Congregational Church had been established in 1871. The first minister was Rev. B. C. Butland, who in 1874 was succeeded by RL. Thames was prosperous. Gold production had reached a peak in 1871. When RL returned he found that the chapel and other buildings had burned down but had been rebuilt " with great spirit at a cost of £900." Thames was to be his home till 1886, apart from an absence of 18 months in 1883-84 when he revisited England and rejoiced " in its spring loveliness."

The folder holds delicate paintings or sketches of several species of ferns and orchids. One labelled ' Orchis ' shows three aspects of a *Pterostylis* " growing near the Hape Creek Thames."

How much time was RL able to devote to art between 1874 and 1886 when he was based at Thames ? He was then into his sixties. Janet Paul tells me that an oil painting of a ' Maori girl with a basket of peaches ' may be dated about 1880; and two portrait drawings signed RL belong to 1885 and 1886.

Did RL meet any kindred spirits in his later years ? Resulting from the botanical explorations of Kirk and Cheeseman, there was a growing interest in the natural history of the Firth of Thames and the Coromandel Peninsula. In August 1877 Cheeseman had written to Buller that he believed he had frequently seen Knots on the extensive mudflats near the mouth of the Thames river. Today three typical birds of the Firth are Pied Stilt, Bar-tailed Godwit and Knot. None of these appears in any of the plates included in the big folder. In 1880 James Adams was appointed Headmaster of the new Thames High School. He and Cheeseman had been colleagues on the staff of the Church of England Grammar School, Parnell. Adams was soon at work on the flora of the goldfields and in due course he had a celmisia and a mistletoe named after him. It is difficult to believe that RL and Adams did not sometimes meet and discuss finds of common interest. Theoretically RL had retired in 1884, but he stayed on at Thames performing light duties till 1886.

When RL finally left Thames, he moved to Devonport. In November 1888 he wrote " This volume of drawings accompanied by a manuscript volume of notes, I have given to my eldest son, Richard." His hand was slow to lose its cunning, for an oil-painting entitled ' Track through New Zealand bush,' now held by the Turnbull Library, is dated 1895. He was an octogenarian when he died.

RL was in the prime of life in 1860 when he arrived with his family in New Zealand. His trained eye was quick to appreciate the surprises and novelties of an unfamiliar land. Fortunately for us the artist in him was sometimes tempted away from the problems of a struggling missionary. Perhaps he was at his happiest and most successful when he was painting natural objects.

For historians of New Zealand ornithology RL's notes and paintings are of outstanding interest. Justice cannot be done to them in a preliminary outline such as this. Not only naturalists but also connoisseurs of New Zealand art will find much to delight them in the work of this sensitive Congregational minister whose name has lain in obscurity for nearly a century.

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R. B. SIBSON, *26 Entrican Avenue, Remuera, Auckland*

CLASSIFIED SUMMARISED NOTES
30 June 1981 to 30 June 1982

Compiled by D. F. BOOTH

Contributors: P. Anderson, A. A. Baikie, D. G. Baker, M. L. Barlow, M. Barnes, D. J. Bate, B. D. Bell, D. O. Bergin, K. Bond, D. F. Booth, B. Brown, J. A. Brown, L. Buchanan, K. E. Butler, W. F. Cash, S. P. Chamberlin, J. Cheyne, P. Child, R. Child, B. Chudleigh, W. J. Cooper, M. Craven, T. Crocker, D. Crouchley, J. Cunningham, M. J. Daly, L. J. Davies, M. D. Dennison, J. Driersen, B. Elliott, B. A. Ellis, G. Falla, J. F. M. Fennell, J. S. Fennell, K. J. Fisher, K. I. C. Fletcher, G. Foreman, D. Garrick, R. Giblin, B. Glass, K. Glass, B. S. Goffin, A. J. Goodwin, M. & S. Graham, R. Grout, R. & G. P. Guest, A. Habraken, H. Hagen, J. G. Hampton, J. Hastie, T. Hatch, J. B. Hawkins, J. M. Hawkins, J. R. Hay, B. D. Heather, C. Holloway, A. & L. Howell, P. Howlett, W. M. Hutton, J. Innes, R. W. Jackson, P. Jenkins, B. Johnson, S. Johnson, M. P. Kearns, B. R. Keeley, R. E. Lambert, P. C. M. Latham, C. S. Lauder, R. W. Lawes, J. R. Leathwick, O. J. Linscott, J. Lloyd, J. Marshall, P. Mayhill, D. G. Medway, J. C. Medway, D. V. Merton, C. Miskelly, S. Moore, J. L. & M. Moore, J. V. Morrison, K. Morrison, A. K. Munn, A. McCutcheon, R. & T. McKenzie, L. Newman, F. Nievwland, C. F. J. O'Donnell, C. C. Ogle, D. J. Onley, R. Parrish, N. Peachman, G. M. H. Peterson, A. & B. Poulton, D. Russell, P. M. Sagar, C. Saxby, B. Searle, J. H. & B. H. Seddon, R. B. Sibson, L. Silcock, J. F. Skinner, M. Skinner, I. Southey, S. C. Sparrow, J. E. Squire, B. M. Stacy, D. M. Stacy, S. A. Sutherland, R. R. Sutton, N. Tanner, B. M. Taylor, G. A. Taylor, K. J. Taylor, M. J. Taylor, F. Thompson, K. V. Todd, W. & M. Twydle, J. Urquhart, C. R. Veitch, D. M. Walter, N. J. Ward, J. Watt, R. M. Weston, R. W. Wheeler, R. Wheeldon, J. P. Whittle.

E & O E

Abbreviations: BoP — Bay of Plenty; est. — estuary; FP — Forest Park; FoT — Firth of Thames; H — Harbour; HB — Hawkes Bay; I — Island; NP — National Park; pen. — peninsula; R — River; RP — Regional Park; SF — State Forest; SP — sewage ponds.

BROWN KIWI *Apteryx australis*

Tapora, 16 from Northland released between 3/1 and 28/3 (MJT). Waitakere Valley, Auckland, 16 from Northland released between 11/10 and 28/2 (MJT). Opoutere, Coromandel Pen., Jan, often found injured or caught by working parties burning off in Tairua Forest (T. Debenham, Forest Service, per BB). Papamoa Hills, Te Puke, plentiful Jan (GAT). Upper Waitotara R., 1 heard on 25/10 (LJD). Bushy Park, Kai-iwi, 1 found in locality on 3/4 and released in RF&B Reserve (DGM). West Jacket Arm, Stick Cove, 3 males calling simultaneously on 3/3 (KM).

GREAT SPOTTED KIWI *A. haastii*

Arthurs Pass Village (estimated Grid Ref. S59060281), 1 on 2/4 heard calling (GAT).

YELLOW-EYED PENGUIN *Megadyptes antipodes*

Little Fishermans Bay, Banks Pen., 1 came ashore on 12/12 (JFMF, JSF). Cape Wanbrow, Oamaru, regularly seen summer 1981-82, possibly breeding (CFJO). Manukau Point, Chatham Is., female on 13/12 walking to empty nest under dead olearia (MDD).

BLUE PENGUIN *Eudyptula minor*

Little Barrier I, coming ashore in evening, late June (GAT). Stephens Bay, 2 on 22/3 in rock crevice (BE). Oamaru Wharf and Cape Wanbrow, breeding summer 1981-82 (CFJO). Mangere I, laying late Oct-Nov; many moulting mid-Jan (DC).

WHITE-FLIPPERED PENGUIN *E. minor albosignata*

Little Fishermans Bay, Banks Pen., 2 on 12/12 on nests (JFMF, JSF).

FIORDLAND CRESTED PENGUIN *Eudyptes pachyrhynchus*

Broughton Arm, Marlborough, 4 on 7/3 (PJ). Charleston, 1 ashore on 14/10 alive but very weak with legs amputated above the tarsus (DJO). On 30/10 large penguin tracks amongst Little Blue Penguin tracks, probably this species (DJO). Chalky Inlet, single birds still at moult sites in caves 25/2 - 2/3 (KM).

CRESTED GREBE *Podiceps cristatus*

Lake Grassmere, 3 on 11/7 (PMS). Lake Rotoroa, Kaikoura, 2 on 12/10; nest with 1 egg reported by JC on 26/11 but nest without egg 11/12 (BE). L. Sarah, 1 immature 12/4 (CFJO). West Coast Lakes surveys May, L. Mahinepua 0, L. Kaniere 0, L. Mapourika 3, L. Wahapo 0, L. Paringa 4, L. Moeraki 6, L. Mathieson 0, L. Ianthe 0; Jan (19/1) L. Mapourika 6, L. Ianthe 7, L. Rotokino 4, White Heron Lagoon 2, breeding (CFJO). L. Emily, 3 on 18/3 (PJ). Maori Lakes, 2 on 18/3 (PJ). L. McGregor, 3 on 2/4 (CFJO). Ashburton lakes surveys, Jan, L. Heron (17), L. Emily (0), Maori Lakes (1), L. Denny (2), L. Emma (4), L. Roundabout (0), L. Camp (0), L. Clearwater (9); Feb (5/2), L. Heron (17 including 3 independent young), L. Emily (2), Maori Lakes (2), L. Denny (2), L .Emma (8), L. Roundabout (0), L. Camp (0), L. Clearwater (7), (CFJO). L. Pearson, 5 on 11/7 (PMS). L. Alexandrina 2/4, 45 adults and 8 broods, 6 of 2 young, 1 of 3 young and 1 of 1 young (CFJO).

NEW ZEALAND DABCHICK *P. rufopectus*

Matamata, 3 on 30/3 on artificial pond (PA). Whitehall (Cambridge), 3 on 30/3 on artificial pond and swamp (PA). Tirau, 2 on 25/3 (PA). Sulphur Bay, L. Rotorua, 74 on 15/5 and up to 95 on 17/6 (GAT). Waimangu Thermal Area (southern crater lake), 2 pairs on 7/2 (1 with 2 young) (RWJ). Poutu Stream, L. Rotoaira, 2 on 15/1 (DJB). L. Tutira, 2 on 3/2 (RMW). Westshore Lagoon, 23 on 26/4 (CS, A&BP), 25 on 14/5; 2 early-stage juveniles (striped heads) and 2 late-stage (pale grey) (GAT). Horseshoe L., HB, 11 on 20/3 (KVT). L. Hatuma, HB, 4 on 13/5 (GAT). Manawatu Coastal Lakes on 21/3, 2 at L. Ngakawau, 6 at Oturoa Road Lagoon,

5 at Foxton No. 5 Lake, 11 at L. Koputara (LJD). Foxton Beach, 7 on 6/6 at No. 1 Lake (JLM, MM). L. Horowhenua, 16 on 1/5 (JLM, MM); 191 on 11/5, a record count; a large flight of 60+ seen to fly 100 m across lake in dense flock, before spreading out to feed on the south-west arm. On same day, 4 on nearby L. Papaitonga (GAT). L. Onoke, farm pond west side, 1 pair and half-grown chick on 13/4; southernmost known breeding pair (BDH).

HOARY-HEADED GREBE *P. poliocephalus*
Bromley SP, Christchurch, 1 on 5/7 (CM).

AUSTRALIAN LITTLE GREBE *Tachybaptus novaehollandiae*
St. Annes Lagoon, Cheviot, 1 on 10/7 (CM), 2 on 23/10 (BE), 2 on 25/10 in full breeding plumage (PMS); 1 on 5/3 (CFJO). Charleston, 1 on 6-10/8 and 24/9-4/10 on small dune pond; 1 on 28/5-2/6 (DJO). Kokatahi, 2 on 12/6 on bush pond (CSL).

WANDERING ALBATROSS *Diomedea exulans*
Foxton Beach, 1 on 26/6 passing north (JLM, MM).

NORTHERN ROYAL ALBATROSS *D. epomophora sanfordi*
Whakatiwai, FoT, 1 ashore alive on 28/2; rescue operation at Auckland Zoo in vain (RBS). Cook Strait, several seen on 10/5 (GAT).

YELLOW-NOSED MOLLYMAWK *D. chlororhynchos*
Pinnacles, Poor Knights, 3 on 17/5, offshore (CM). Tolaga Bay, 1 on 9/9 came near to boat and took fish offered (GF). Croiselles Harbour, 1 immature on 20/8 (JBH). Tasman Bay, 1 adult on 2/8 (JBH).

LIGHT-MANTLED SOOTY ALBATROSS *Phoebetria palpebrata*
Te Aroha, 1 on 4/6 blown inland (RBS).

GIANT PETREL *Macronectes* spp.
Kawau to Little Barrier Is., 5 on 1/9 (CM). Waiheke Is., 1 on 26/11 offshore (BB). Waitara R. mouth, 3 offshore on 5/7; 2 found alive onshore at Waitara and Awakino in July later released; Waiwakaiho R. mouth, New Plymouth, 1 offshore on 1/8; Cape Egmont, 1 offshore on 10/10 (DGM). East Clive, HB, 12 on 29/10 near sewer outlet (KVT). Foxton Beach, 6 on 25/10 passing south (JLM, MM). Ngauranga, Wellington, 9 on 8/1 — present Jan-Mar (JLM, MM). Waitaki R. mouth, 1 on 11/3 (CFJO). Oamaru, 1 on 16/11 (CFJO).

CAPE PIGEON *Daption capense*
Nelson Haven, c.20 on 21/6 at sewage outlet (JHS).

GREY-FACED PETREL *Pterodroma macroptera*
Busby Head, Whangarei, calling at dusk 16/5 (CM). Aorangi, Poor Knights, calling at dusk 17/5 (CM). Karioitahi (near Waiuku), 1.5 km north, 10/4, 7 burrows (TH). Ohope, 1 on 27/4 picked up, car-injured (WMH). New Plymouth, July, 1 alive in residential area (REL).

MOTTLED PETREL *P. inexpectata*
Matata Beach, 1 on 18/5 found dead (GAT). Lake Hauroko, Fiordland, breeding 2/4 (WJC).

KERGUELEN PETREL *P. brevirostris*
Blockhouse Bay, 1 on 6/9 (wrecked) (RBS). Waitakaruru (Canal West Road) 9/9, 1 found dead near electric fence on Burdus property, identified by LB and sent to Auckland Museum (BB). Te Kuiti, 1 found dead, Sep (DG). Onaero Beach, 6 onshore on 2 & 3/10 were still alive when found (B. Stephens). N Taranaki (Kiwi Road), 1 on 25/9 found inland dead (A. Cadman). Tikorangi, New Plymouth, 1 alive on 7/8 (RWW). Bell Block, New Plymouth, 1 alive on 12/9 (RWW). Waikanae Beach, 1 on 27/9 caught alive on beach but later died; several reports of sightings from Wellington West Coast beaches around this date (BMS, DMS). Charleston, 1 on 3/9 flying over paddocks (DJO).

COOK'S PETREL *P. cookii*
Little Barrier, 7 south-west on 1/9 (CM). Hamilton city, 1 on 5/4, injured and later died (FN).

BLACK-WINGED PETREL *P. nigripennis*
Kokota Spit, Parengarenga, 30/1, 6 offshore; 2 in courtship flight over Cape Maria Van Diemen; c.160 cat-killed Pitokuku Hill and 2 landed by flashlight (CM, DFB). Waihau Beach, East Coast, 2 possibles calling after dark on 12/11 (BRK). Mangere and South East Is, heard calling at night from late Nov (DVM). Remains in skua middens on higher parts of both islands Dec-Jan (DC). Star Keys Is, 6/1, many corpses in skua middens (WFC).

BLUE PETREL *Halobaena caerulea*
New Plymouth, 1 on 24/9 found alive in St. Mary's Churchyard (AAB). Foxton Beach, 2 on 13/9 flying north; white tip to tail visible (JLM, MM).

BROAD-BILLED PRION *Pachyptila vittata*
Mangere and South East Is, Sep — incubating; late Oct — hatching; many large chicks with heavy infestation of ticks on head and throat (DC); late Jan, most chicks dispersed (CRV).

FAIRY PRION *P. turtur*
Mangere Is., laying early Nov (DVM).

PRION sp.
Port Waikato, 1 on 4/7 flying south along beach over breaking waves being harrassed by 2 Red-billed Gulls as it tried to get back out to sea (AH).

WESTLAND BLACK PETREL *Procellaria westlandica*
Grey R. mouth, Apr-May, several following fishing boats (NJW).

FLESH-FOOTED SHEARWATER *Puffinus carneipes*
BoP, numerous (WMH). Ship Cove, Queen Charlotte Sound, 3 pairs on 12/1 resting on calm water (SCS). Lyttelton Harbour, 1 on 15/12 (SCS).

BULLER'S SHEARWATER *P. bulleri*
Aorangi, Poor Knights, 17/5, flying in after dusk (CM). Whale

WHITE-FACED STORM PETREL *Pelagodroma marina*
Tutukaka to Poor Knights, 1 on 17/5 (CM). Waiheke I, 2 on I, 200/300 on27/3 (WMH).

26/11, offshore (BB). Cape Colville, c.20 offshore 26/12 (CM). BoP, 27/3 numerous (WMH); Papamoa Beach, 1 on 26/9 blown ashore alive (PCML).

DIVING PETREL *Pelecanoides urinatrix*

Poor Knights, 24 offshore 17/5 (CM). Little Barrier, 10 south-west, 1/9 (CM).

AUSTRALASIAN GANNET *Sula bassana serrator*

Muriwai Stack, 25/3, colony thinning out, plenty of space; c.100 adults, 12 brown juveniles, wings flapping (RBS). Horuhoru colony, Hauraki Gulf, 5000+ on 26/11, nesting well advanced with some grey "checkered" young and some at "powder-puff" stage (BB). Onehunga, 3 on 29/4 came up with tide (RBS). Manukau H. census, 5/7, 21; 13/12, 1 (BB). Karaka, 16/8, 41; 7/6, 57 (BB, KJF). Black Reef, HB, 60 adults, 18 speckled juveniles out on water 13/5 (KVT). Waverley Beach, 1 on 12/3 (CFJO). Foxton Beach, 12 on 16/5 flying north (JLM, MM). Farewell Spit, 12/11, 1 immature seen among several adults (white with brown mottled wings) (BDH); 9 on 13/11 on salicornia flat between lighthouse and Mullet Creek, engaged in courtship display (BDB *et al.*). Motueka Sandspit, 3 on 27/3 (BE).

BLACK SHAG *Phalacrocorax carbo*

Tahekeroa, 2 on 10/4 (DGM). Manukau H census, 13/12, 21; 25/7, 131 (BB). FoT census, 15/11, 11; 27/6, 28 (BB). Whanga-marino Creek, on 17/9, 2 colonies, one of 3 nests with 2 adults present and one of 10 nests with 21 adults (AH). Port Waikato, 175+ on 9/5 (BB). 130 on 21/12 (AH). Matakana I, 12/6, 12 nests in tops of large pines; birds carrying sticks; 1 juvenile seen (BC). Tarawera R. mouth, 8 on 17/4 flying in V-formation (PCML). Patea R. mouth, 3 on 3/4 (DGM). Tukituki R. est., 40 on 17/3 (JL, KVT). Horse-shoe Lake, HB, 90 on 20/3 (KVT). Manawatu R. est., 26 on 16/5 (JLM, MM). L. Ryan, Mar-Jun max. 3 (NJW). L. Mahinapua, 1 on 30/11/80 at nest in tall Kahikatea (NJW). Butcher's Dam, Alexandra, 51 on 26/4 resting and preening (biggest congregation ever seen((PC). Lower Hollyford R., 20 on 3/8 (WJC).

PIED SHAG *P. varius*

Tom Bowling Bay, Te Huka, 15 nests on 29/5 in pohutukawas with birds sitting (PM per BHS). Hobson Bay, Auckland, colony reached a maximum of 20 nests on 4/10 (MJT). Remuera, often to be seen flying over and crossing the isthmus (RBS). Karaka, 53 on 7/6 (KJF). Manukau H census, 216 on 13/12; 299 on 25/7 (BB). FoT census, 20 on 15/11; 75 on 27/6 (BB). BoP, Kaituna Cut on 6/12, c.20 pairs nesting in pines by river (PCML); young present in nests, 15/6 (GAT); Tarawera R. mouth, 15 on 2/5 (PCML); Otama-rakau, 17 on 26/6 (PCML); Rangitaiki R. mouth, 8 on 26/6 (PCML); Whakatane R. mouth, 13 on 13/5 (GAT); Motu R. mouth, 8 on 26/12 (GAT). Waimakariri R. mouth, 6 on 6/5 (GAT). Heathcote-Avon est., 2 on 2/5 (GAT).

LITTLE BLACK SHAG *P. sulcirostris*

Whangarei H. 5 on 8/5; 25 on 16/5 (CM). Orakei Creek, Auckland, c.120 roosting in association with nesting Pied Shags, May-June (MJT). Onehunga. 60 on 8/4 (BSG). Karaka, 150 on 16/8

fishing in a flock offshore (BB). Manukau H census, 44 on 13/12; 153 on 25/7 (BB). Tarata Point, FoT, 100+ on 23/9 encroaching on Spotted Shag territory (RBS). Stoney Creek, Mt Maunganui, 10 on 2/8 (PCML). Otamarakau, 8 on 12/6 (PCML). Sulphur Bay, Lake Rotorua, 1000-1500 present Jan-Mar; 641 nests counted; eggs, chicks and fledglings present 8/1 and 4/3; 54 on 15/5 but island deserted (GAT). Kawhia Harbour, 2 on 27/2 (BHS). Tarawera R. mouth, 50 on 11/4 fishing in a pack (JHS, BHS). Muriwai Lagoon, 22 on 24/5 (BRK). HB, Waitangi, 28 on 27/5 (KVT); Westshore Lagoon, c.60 on 14/5 (GAT); Tukituki R., 170 on 15/10 (KVT); c.90 on 14/5 (GAT); L. Hatuma, c.39 on 13/5 (GAT). Manawatu R., present on "loop" of estuary from 1/8 to 30/6 with maximum 36 on estuary on 9/4 (JLM, MM). Wellington H, 10 on 8/9 and 11/5 (JLM, MM). Pauatahanui, 15 on 2/8 (JLM, MM). Boulder Bank, Nelson, 7 on 5/5 (JMH). Waimea est., 12 on 20/3 in flight (BE).

LITTLE SHAG *P. melanoleucos brevirostris*

Hobson Bay, Auckland, colony reached a maximum of 47 occupied nests on 1/11 (MJT). Onehunga, 45 on 8/4 (BSG). Manukau H census, summer 26, winter 58 (BB). Port Waikato, 20+ on 9/5 (BB). FoT census, summer 1, winter 82 (BB). Sulphur Bay, Rotorua, 7 nests in trees still occupied on 5/1, in mixed colony with Little Black Shags (GAT). L. Okataina, Tauranganui Bay, 1 on 5/1 feeding 150 m from shore surfaced with a koura, which was swallowed whole (GAT). Clifton, 6 on 13/5 (MC, NT). Horseshoe Lake, HB, 30 on 20/3 (KVT). Wellington H (Petone to Wellington), 25 on 19/4 (JLM, MM). Porarai R., 4 nests on 29/10, with 3, 4, 4, 2 young; on 8/12 there were 10 juveniles in vicinity of colony (NJW). L. Ryan, Mar-Jun, usually 5-6 scattered around lake edge (NJW).

KING SHAG *Leucocarbo carunculatus carunculatus*

Oamaru Breakwater, 3 on 16/11; over past 3 years, 1-5 always present during winter, often feeding within harbour or out at sea (CFJO). Stewart I, c.19 on 1/7 with several nests (JMH).

CHATHAM ISLAND SHAG *L. carunculatus onslowi*

Tupuangi/Monau Reef, 7 on 25/11 (KJT). Taupeka Point, 2 on 27/11, immature (KJT).

SPOTTED SHAG *Stictocarbo punctatus*

Horuhoru I, Hauraki Gulf, c.20 on 26/11 at gannet colony (BB). Manukau Harbour, 0 on censuses; Puketutu near AMDB pond outlet, 10+ on 28/4 (PH). Miranda, 1 on 18/4 feeding close to shore on high tide (AH). FoT census summer 107, winter 1002 (BB). Wellington H, single birds on 6/1 and 4/4 (JLM, MM). Picton H, 9 on 4/3 (DJB). Wairau Bar, Marlborough, 12 on 6/2 (PJ). Little Kaiteriteri, 65 on 18/4 (BE). East Head, Kaikoura, 160 on 18/2 in flight (BE). Perpendicular Point, Hokitika, 80/100 nests with eggs on 13/8; breeding adults still had double crests (NJW). Twelfth Mile Bluff, Hokitika, 200+ on 7/3/81 on rocks at dusk; nests at colony unoccupied; 27/7, birds incubating; 3/8, 30+ nests (2 with young) visible on four stacks but most nests on seaward side; 13/11, nesting almost finished; 28/5, nesting started; adults with double crests and one with filoplumes on neck (NJW).

PITT ISLAND SHAG *S. punctatus featherstoni*

Port Hutt, 1 adult, 2 young on 25/11 (KJT). Tupuangi/Monau Reef, 5 on 25/11 (KJT). Taupeka Point, 8 on 27/11 (KJT). Mangere I, 27/12, chicks hatching (WFC).

WHITE-FACED HERON *Ardea novaehollandiae*

Little Barrier, 3 on 10/4 blown in by cyclone Bernie (BB). Jordan's Farm, Kaipara H, 110+ on 13-14/3; 34 on 6/6 (BB). Karaka, 109+ on 10/2 (BB). Manukau H census, summer 431, winter 378 (BB). Pukekohe, 22/6 first signs of courtship flight (21/6 shortest day!) (AH). FoT, summer 58; winter 164 (BB). Welcome Bay, Tauranga H, at NE end, 40 in a group plus 150 on flats (KICF). Maketu est., 100 in May (GAT). Matata Lagoon, 2 on 10/5 (RMW). Waimangu Valley to Lake Rotomahana, 13 on 7/2 (RWJ). L. Rotomahana, 196 including flock of c.70 10/1 (GAT). Westshore census, 73 on 2/11 (KVT). Grovetown, 24 on 14/2 (DJB). Blenheim (Bells Road) 35 on 14/4 (DJB). L. Ryan, Mar-Jun usually 2 present (NJW). Waituna Wetlands Reserve, Southland, 5 on 7/3 at western end (WJC).

KOTUKU *Egretta alba*

Jordan's Farm, Kaipara Harbour, 6 on 6/6 (MJT, BB). Kopuku, 1 on 12/9 (IS). Pahurehure Inlet, 2 on 8/9 (AH). Manukau H, 2 overwintered in Papakura/Takanini area, but 6 seen at Pahurehure, Papakura on 16/9 (TH). Miranda, 1 on 23/12 (CCO). Whangamarino Swamp, 1 on 17/9 (AH). L. Whangape, Rangiriri, 1 on 15/6 (JC). Lake Cameron, Rukahia, 1 on 27/6 (A. Bennett per BHS). Whakamarama, Katikati, 1 on 13/5 beside highway (BC). Maketu est., 1 in June (GAT). Matata Wildlife Refuge, from April to June, 1 or 2 seen regularly (BC, PCML, KICF). Tarawera R. mouth, 2 on 10/5 (RMW). Waiwakaiho R., New Plymouth, 1 on 22/5 (REL). Tukituki est., 2 on 14/5 (GAT). Tutaekuri est., 1 on 11/5 (W & MT). Clive, 1 on 18/5 (W & MT). Te Awanga Lagoon, 1 on 15/4 (BMT). Foxton No. 1 Lake, 1 on 19/7 (LJD). Manawatu est., single birds on 11/7 and 13/4; 2 on "loop" from 12/7 to 4/10 (JLM, MM). Grovetown, 1 on 25/7 eating small bird (PJ). Waimea est., 2 on 21/3 (BE). Karamea, 1 on 9/6 (DJO). Orowaiti, 1 on 25/6 (DJO). Charlestown, 1 on 24/7 to 10/9; 4/2 to 16/5, 1 or 2 regularly (DJO). Greymouth, 1 on 6/2 consumed 40-mm fish (DJB). L. Ryan, Mar-Jun, usually 1 present, although 2 flying north on 17/3 and 2 at lake on 24/3 (NJW). L. Ellesmere, 3 on 26/7 (PMS). Spider Lagoon, South Canterbury, 1 on 1/8 (PMS). Kakanui, 1 on 4/9 (MLB). Lower Hollyford R., 2 on 3/3 (WJC).

LITTLE EGRET *E. garzetta*

Foxton No. 1 Lake, 1 on 19/7, 4/10 and 27/6 (LJD). L. Rotomanu, New Plymouth, 1 present on several occasions July-June (DGM, RWW, REL, AAB). Ahuriri, 1 on 13/3 running for about 200 m with two dance like leaps and other brief pauses en route, then a quick return non-stop to a maimai (MC, CS, KT); 1 on 29/5 (W & MT). Karamea, 1 on 9/6 (DJO). Orowaiti est., 3 on 11/10; 5 on 15/5 (DJO). L. Ryan, 1, first seen on 20/4 and was present most days and associated closely with Kotuku; when not at lake, was usually at Cobden Lagoon (NJW).

REEF HERON *E. sacra*

The Bluff, 90 Mile Beach, 1 on 31/1 (CM). Whangarei H, 1 on 10/5; 3 on 16/5 (CM). Outpost Island, Leigh, 1 on 9/1 (MJT). Puhoi est., 1 on 17/4 (MJT). North Head, Auckland Harbour, 1 on 21/5 (BSG). Mangere (Ambury Farm Park), 1 on 8/4 (BSG). Papa-aroha, Coromandel, 2 on 17/1 (CM). Waiheke I, 4 counted 20-21/1 (MJT). Mataitai, 1 on 28/4 (AH). Port Waikato, 1 on 4/7, 11/7, 12/8, 30/9, 13/4; on 7/6, 2 flying south (AH). Thames, 3 on 26/12 (MB). Opoutere, 1 on 19/1 (PCML); 2 in Dec (BB, AH). Whanga-mata, 1 on 23/1 (PCML). Raglan Harbour, 1 on 12/4 and 25/4 (MB). BoP, Mt Maunganui, 1 on 2/8 (PCML); 1 on 15/1 and 2/2 flying in from Rabbit I, a known breeding place (KICF); Tanners Point, Tauranga H, 1 on 26/1 and 3/4 (PCML); Bowentown, 1 on 3/4 (PCML); Kaituna Cut, 1 on 19/6 (PCML); Maketu est., 1 on 10/3 attacked and chased by Black-backed Gulls; 1 on 16/5 (GAT); Ohiwa Wharf, 1 permanent resident (WMH). Kawhia, 3 on 11/7 (BHS). Whangawehi, Mahia, often seen (GF). Taranaki (New Plymouth-Cape Egmont), present in small numbers along coast Jul-Jun (DGM). Westshore, 1 on 23/1, the fifth year a bird seen in this area (KVT). Pauatahanui, 1 on 23/8 (BMS, DMS). Wellington H, single birds Jul-Apr (JLM, MM). Charleston, 1 on 9/6/81 flying south; have seen only one other on this stretch of coast over last 10 years and that was on 3/6 (DJO). Kaikoura pen., 1 on 20/10 and 7/5 (BE).

CATTLE EGRET *Bubulcus ibis*

Matakana, 1 on 27/4 with 2 White-faced Herons in field with cattle (SPC). AMDB Ponds, Mangere, 6 on 9/7 (BB). FoT, 4 on 11/7 (TC); 18 on 1/8, most seen (LB). Meremere, 2 on 2/9 (IS). Rangiriri, 38 on 2/5 (BB, DGB); 87 on 20/6 (AH). Tarawera R., 6 on 11/6 (KICF). Matata, 3 on 7/6 (GAT). Te Kohanga, near Port Waikato, 2 on 9/5 (SM). L. Ngaroto, Te Awamutu, 1 on 15/5 flying around maimai in shooting season (RD); 2 on 28/5 with cattle at lake edge (MJD). Huntly West Road, c.80 on 9/6 from air (JHS, BHS). 84 on 8/7, all pure-white plumage with cattle feeding among silage litter, then flew to join White-faced Herons feeding in long pasture grass (BHS). Barrett Lagoon, New Plymouth, 1 on 28/6 (REL). Upper Carrington Road, New Plymouth, 7 present May/Jun (DGM). Manaia, 4 on 27/5 (REL). Patea, 1 on 13/6 (DGM, JCM). Foxton Beach, present at est. and No. 1 Lake from Jul to 25/10, max. 42 on 22/8; max. from 15/5 to 30/6, 19 (JLM, MM). Manawatu R. est., 21 on 27/6 (LJD). L. Horowhenua, 2 on 21/3, no further reports (BDH). Grovetown, 40 on 25/7 with 42 Black-backed Gulls and 1 White-faced Heron; 2 on 25/4; 2 and 5 on 9/5 (PJ); 38 on 12/9; 19 on 13/5 (DJB). Karamea, 4 on 8/6 (DJO). Charleston area, 5 on 6/5 to 11/5, reduced to 3 on 12/5 to 24/5 and then 5, 24/5 to 28/5, 3 on 29/5 and 1 on 2/6 (DJO). Ludstone Terrace, Kaikoura, 5 on 10/9 and 8/10 (BE). L. Ryan, 1 on 9/6 and still present 12/6 (NJW). L. Kaniere, 1 on 15/5 roosting in water (CFJO). Waikuku Beach, 1 on 4/7 (CM). L. Ellesmere, 2 over summer 1981-82; winter flock of 32 (CFJO). Taumutu, Canter-bury, 52 on 3/10 (CM). Clandeboye, South Canterbury, 17 on 29/8 with dairy cows (PMS). Kingsdown, South Canterbury, 5 on 29/8 with sheep (PMS). Maheno, 15 winter 1981 (CFJO).

BITTERN *Botaurus poiciloptilus*

Piako, 1 on 14/12 (BB). Port Waikato, 1 flying 9/5 (BB). Meremere, 2/9, platform nest with 3 eggs (IS). Rangiriri, 1 on 2/8 (AH). Katikati, odd birds regularly visit swampy land on farms; at times heard booming during spring months, usually just before sunrise (BC). Matakana I, 1 on 7/12 booming (FN). Maketu est., 1 on 15/6 (GAT). Awaiti Wetlands, 4 on 17/4 (PCML). Tarawera R. mouth, 2 on 1/5 (RMW). Roy Road Swamp, Mangorewa Forest, 1 on 23/11 (GAT). Poutu Stream, L. Rotoaira, 1 on 15/1 flying over raupo swamp (DJB). L. Rotoehu, 3 on 13/6 in reedy northern arms (GAT). Lagoon Road Lake, Mamaku Forest, 1 booming on 18/1 (GAT). Mirror Lake, near L. Okataina, 1 flushed and flew up to land on outer branch of tree on 15/1 (GAT). Mohakatino, 1 on 10/4 (DGM). 1 on 26/11 (DG). Westshore, 1 on 30/5 (W & MT). Waitangi, HB, 1 on 1/8 (KVT). Waitotara R. mouth, 1 on 22/11 (DGM, JCM). Foxton, 1 at Round Bush on 12/7 and 22/8; 2 at "loop," Manawatu R., on 28/2 (JLM, MM). Druggins Dam, Golden Bay, 1 on 20/11 booming (CM). Appleby, 1 in Feb (BE). L. Rotoiti, 1 on 17/1, boomed in response to Spotless Crake taped call (GAT). Birchfield, 1 on 7/6 (CSL). Charleston, 1 on 8/1 (DJO). L. Ryan, 2 birds are resident in reed beds. On 10/6 bird flew down lake and landed at Cobden Lagoon over 1 km away (NJW). Saltwater Creek, North Canterbury, 1 Jul 1981 (CFJO). L. Ellesmere, 18 records 10/81-8/82 (CFJO). Ahuriri R. delta, pair 27/4-14/5 feeding in swamp, river and lake edge habitats (CFJO). Spider Lagoon, South Canterbury, 1 on 21/2 (PMS). Upukerora R., Te Anau, 1 on 28/2 (JVM).

GLOSSY IBIS *Plegadis falcinellus*

Ahuriri, 1 on 12/9 (W & MT).

ROYAL SPOONBILL *Platalea regia*

Ahuriri, 4 on 14/5 (GAT). Manawatu est., present Jul to 26/10 max. 26 on 12/7; max. from 27/2 to 30/6, 29 on 27/6 (JLM, MM). Wairau Lagoon, 3 on 12/9 with Pied Shags (DJB). Farewell Spit, Stockyard Point, 17 in Jul reported by P. Fullerton, Ranger, Takaka (JMH). Motueka Sandspit, 12 on 8/4 (BE). Collingwood est., 1 adult, 1 immature on 11/11 but not on succeeding days (CM, BDH). Waimea est., 4 on 28/2; 12 on 21/3 (BE). Bromley SP, Christchurch, 15 on 17/4 (CM, GAT); 5/5, 1 only (GAT).

MUTE SWAN *Cygnus olor*

L. Poukawa, HB, 7 on 30/5 (KVT).

BLACK SWAN *C. atratus*

Karaka, 16 on 7/6 (KJF). FoT census, 4 on 15/11 (BB). L. Braemar, Matata, 41 on 18/5 (GAT). Muriwai Lagoon, Gisborne, 104 on 5/10 (BRK). New Plymouth, Bell Block SP, 19 on 21/11 (DGM); L. Mangamahoe, 6 on 3/4 (DGM, JCM); Barrett Lagoon, 6 on 11/4 (RWW). Waitotara R. mouth, 87 on 22/11; 54 on 14/2 (DGM, JCM, REL). Westshore census, 109 on 2/11 (KVT). L. Poukawa, HB, 165+ on 13/5 (GAT). Foxton, 170 on 4/10 at "loop" (JLM, MM). L. Horowhenua, 167 on 11/5 (GAT). L. Grassmere, 54 on 11/7 (PMS). L. Sarah, 2 on 11/7 (PMS). L. Marymere,

2 on 11/7 (PMS). Spider Lagoon, South Canterbury, 10 on 1/8 (PMS). Okarito, 16 plus 6 cygnets on 14/11 (CSL).

CANADA GOOSE *Branta canadensis*

L. Pupuke, 3 on 14/6 (DFB). L. Waikare, 50+ on 11/7 (a rapid increase) (TC). Waihou Bay, 1 on 1/11/80 on sea (WMH). Little Waihi est., 2 on 15/6 (GAT). L. Rotoehu, 1 on 24/12 and 23/5 (GAT). L. Rotomahana, 1 on 14/6 (GAT). Barrett Lagoon, New Plymouth, 58 on 11/4 (RWW). Te Pohue Lake, 3 on 30/1 (RMW). Westshore, southern marsh, 25 on 18/11 (KVT). Farewell Spit, 2 on 23/6 (CFJO). Kaihoka Lakes, Westhaven, 4 on 15/11 (CM). 21 on 10/4 (BE). Nelson Haven, 6 on 5/5 (JMH). L. Ryan, 8 on 12/5 (NJW). Cobden Lagoon, 5 on 21/10 (CSL). L. Grassmere, 70 on 11/7 (PMS). L. Sarah, 29 on 11/7 (PMS).

PARADISE DUCK *Tadorna variegata*

Opuawhanga, 24 on 1/7 (JFS). Northern Wairoa, 1/8, pairs commonly sharing wet paddocks and farm ponds with Pied Stilts (RBS). Jordan's Farm, Kaipara Harbour, 1 on 6/6 (BB). Whangapoua Beach, Great Barrier, 40 on 10/4 in field (KB). Coalmine Bay, Whangaparaoa, pair on 19/9 with 5 ducklings (SPC). Piha Domain, pair on 2/5 in flood water (MJT). Papa-aroha, Coromandel, pair on 26/12 with 8 well-grown young; all flying on 17/1 (CM). Ohui (near Opoutere) pair with 7 full-grown young on 20/1 (PCML). FoT census, 6 on 27/6 (BB). Karaka, 32 on 31/5 feeding in paddock (FN). Frost Road, West Tuakau, 116 on 9/5 (BB). Awaiti Wetlands, c.250 on 17/4 (PCML). Tarawera R. mouth, 50+ on 11/4 feeding in paddock (JHS). Ohiwa Harbour (Wainui Road), 61 on 29/3/81 with Mallards (WMH). Mamaku-Kaharoa region, north of Rotorua, abundant on small farm ponds and forest lagoons Nov-Jan (GAT). L. Rotomahana, 10/1. 2 large moulting flocks, 500+ in Landing Bay and c.380 at Waimangu outlet (GAT). Sulphur Point, Lake Rotorua, Jan, 100 on small island (GT). Westshore census 109 on 2/11 (KVT). Lake Poukawa, 120 on 22/8 (KVT). Horseshoe Lake, HB, 300 on 20/3 (KVT). Uruti Valley, 50 on 9/4 (DGM). Barrett Lagoon, New Plymouth, 50 on 8/3 (RWW). Cape Egmont, 12 on 20/6 (DGM, JCM). Waitotara R. mouth, 4 on 22/11, 3 on 14/2 (DGM, JCM, REL). Pokeka Stream near Waitotara SP, 8 on 21/11 (LJD). Foxton Beach, 42 on 7/6 at No. 1 Lake (JLM, MM). Farewell Spit, c.90 on 22/6 in farm paddock (BHS). Kaihoka Lakes, 17 on 10/4 (BE). Blenheim SP, 150+ on 2/1 (DJB). L Heron Flats, 200 on 18/3 with Canada Geese (PJ). Hokitika SP, pair on 5/11/80 with 3 downy ducklings — drake chased Harrier from ponds (NJW). Cook R., 8 on 13/3 (CSL). State Highway 94, The Key (Southland), 300 on 1/8 (WJC).

MALLARD *Anas platyrhynchos*

Titirangi, 1 on 1/6 waiting at *Vespa germanica* nest, taking the wasps, holding under water and then swallowing them (JPW). Manukau H census, summer 359, winter 1989 (BB). Clevedon, J. Blundell reported up to 200 feeding on fallen apples in orchard, 8/2 (AJG). FoT census, summer 413, winter 1727 (BB). Hamilton Lake, 1368 on 17/4 (BHS). Westshore census, 597 on 2/11 (KVT). L. Ryan, Mar-Jun usually 100+ present on lake or adjacent pasture (NJW). Thinornis Bay, South East I, pair with young, Jan (WFC).

GREY DUCK *A. superciliosa*

Manukau H census, summer 8, winter 2 (BB). FoT census, summer 0, winter 18 (BB). Cambridge Lake, 10 on 9/5 (JHS). Matakana I, c.50 on 3/4 at north end (PCML). Mamaku Plateau, present in small numbers on forest lagoons and rivers 1981-82 (GAT). Matata Lagoon, common on 11/4 among narrow channels leading to river mouth (JHS). Tarawera R. mouth, 10 on 5/7 (PCML). Te Hauke, 12 on 22/8 (KVT). Manawatu, 4 at Foxton No. 5 Lake on 21/3; 8 at Oturoa Road Lagoon on 21/3; 5 at L. Koitiata on 23/8 (LJD). L. Rotokohu, Waitotara SF, 2 on 21/11 (LJD). Blenheim SP, 100+ on 2/1 (DJB). Parapara, 47 on 9/4 (BE). Hokitika SP, 12 on 12/1/81 (NJW). Cobden Lagoon, c.20 on 20/4 (NJW). Kyeburn R., 18 on 15/10; 2 pairs each with 9 ducklings (PC). Thinornis Bay, South East I, pair in Nov (MDD).

GREY TEAL *A. gibberifrons*

Mangere SP, 100 on 26/1 at No. 4 Pond; 96 on 29/4 (RBS). Karaka, 70 on 22/5 (BB, RC, AH). Manukau H census, summer 136; winter 103 (BB, RC, AH). FoT, Miranda, 38 on 21/3 (TC). Pukekohe-Tuakau SP, 25 on 13/1 with 3 broods of 2, 3, 5 (AH). Matakana I, 30+ on 3/4 (BC, PCML). Kaituna Cut, Maketu, Apr-Jun 100 or more regularly seen on pond (BC, PCML). Matata, 8 on 12/6 (PCML). Barrett Lagoon, New Plymouth, 4 on 11/4 (RWW). Westshore, 150 on 6/3 (KVT). 220 on 14/5 (GAT). Manawatu est., 3 on 1/5 (JLM, MM). Manawatu, 3 at Turnbull's Lagoon near Foxton on 22/8; 47 at Oturoa Road Lagoon on 21/3 (LJD). L. Horowhenua, 5 on 1/5 (JLM, MM). Waikanae SP, c.50 on 21/3 (BDH). Buller R., 3 on 11/4 (DJO). L. Rotoroa, 22 on 14/9; pair with 3 ducklings and 1 with 5 on 11/12 (BE). L. Ellesmere, counts of up to 3284 (23/3) and 1000-2000 resident Oct-June (CFJO).

BROWN TEAL *A. chlorotis*

Great Barrier, east coast, 200 between 8/4 and 13/4 in streams and estuaries (KB); Whangaparapara, 2 on 23/3 (DFB); Tryphena Harbour, 30 on 23/2 (AH). Papa-aroha, Coromandel, 1 dead on 17/1 (CM). L. Whangape, 1 on 26/1 (JC, FT). Manawatu coastal lakes, 10 at Foxton No. 5 Lake on 21/3; 2 at Foxton No. 3 Lake on 21/3; 6 at Pukepuke Lagoon on 21/3; 30 on L. Kaikokopu on 21/3 — probably released by Ducks Unlimited/NZ Wildlife Service (LJD).

NEW ZEALAND SHOVELER *A. rhynchotis*

Manukau H census, summer 128, winter 32 (BB). Mangere SP, 100 on 26/1 and 29/4 (RBS), 23 on 15/6 (BSG). Karaka, 20 on 22/5 (RC, AH). FoT census, summer 0, winter 35 (BB). L. Whangape, 1200+ on 26/1 (JC, FT). Hamilton L., 5 on 1/5, 15 on 13/6 (MB). Matakana I, 12 on 3/4 on pond (BC, PCML). Kaituna Cut, 20 on 17/4 (PCML). Matata, 69 on 18/5 (GAT), 50 on 5/7 and 26/6 (PCML). L. Rotomahana, 84 on 10/1 (GAT). Westshore, 300 on 29/5 (CS, RG). Bell Block SP, 4 on 17/10, 6 on 26/10 (RWW, REL). L. Rotomanu, New Plymouth, 8 pairs on 19/7 (REL). Waitotara R. mouth, 1 on 22/11, 20 on 14/2 (DGM, JCM, REL). Marton SP, 98 on 13/6 (all males were brightly coloured) (BDH). Foxton Beach, 50 on 1/5 over sea; 20 on 1/8 at No. 1 Lake (JLM, MM). Manawatu coastal lakes, 152 on L. Kaikokopu on 23/8 (LJD). L.

Horowhenua, 100+ on 21/3 (BDH). Ohau dune pond, 12 on 21/3 (BDH). Waikanae SP, 25 on 21/3 (BDH), 12 on 23/5 (FN). L. Wairongomai, 3 on 21/3 (BDH). L. Papaitonga, 0 on 28/2, 60+ on 21/3 (BDH). Parapara, 2 on 9/4, males in breeding plumage (BE). L. Grassmere, c.60 on 3/4 (BDH). Blaketown Lagoon, mid-Jun 130-140 (NJW). L. Ryan, Mar-Jun, c.125 on 11/4 (NJW). Bromley SP, 1287+ on 17/4 (GAT). L. Waitaki, 223 on 7/5 (CFJO). Waituna Wetlands Reserve, Southland, 12 on 7/3 (WJC).

BLUE DUCK *Hymenolaimus malacorhynchos*

Whakamaru Dam, 1 on 10/1 (BB), 1 on 20/3 and 16/5 (SG). Rangitikei R., 6 adults, 1 duckling Dec-Jan (KEB). Mangaorewa R., 2 on 17/12 (GAT). Waioeka Gorge, pair on 7/7 (BRK). Motu R., 23 on 29-31/1 seen from Otipi Road down (GAT). Aniwaniwa, Urewera NP, 2 adults and 2 ducklings seen 18/12 to 13/1 (JGH); present 25/1 (BRK). Waihaha R., Tihoi SF, 2 on 18/10 (LJD). Ecology Stream, Kaimanawa Mountains, 7 adults, 1 duckling Dec-Jan (KEB). Ruaiti, on Manganuioteao R., 2 on 16/1 (H. & J. Axell, BB *et al.*). Roebuck Creek, Upper Pelorus River, 1 on 2/5; took to water when call imitated (DJB). East Hawdon, Arthurs Pass NP, pair on 4/4 (CM). South Canterbury — Bernard Stream, Mt Peek Creek, Lynn Stream, Andrews Stream, Scotsburn Stream, recorded 2/82 (CFJO). Lyvia R., Doubtful Sound, 1 on 22/3 (WJC). Moraine Creek, Fiordland, 1 male on 29/11 (KM, JVM).

NEW ZEALAND SCAUP *Aythya novaeseelandiae*

Straka's Refuge, Waiwera, 7 on 12/7 (MJT). Matakana I, 2 on 12/6 (BC). Matata, counts ranging from 16 to 32 on 5/7 (PCML). Sulphur Bay, L. Rotorua, c.530 on 4/3, only 40-50 females (GAT). Barrett Lagoon, New Plymouth, 2 on 1/11 (G. Dumbell). L. Mangamahoe, 65 on 3/4 (DGM). L. Tutira, 50 on 3/2 (RMW). Horseshoe L., HB, 80 on 20/3 (KVT). L. Grassmere, 158+ on 11/7 (PMS). L. Saraha, 8 on 11/7 (PMS). L. Sylvester, Cobb, 7 on 7/3 (BE). L. Rotoroa, 47 on 14/9 (BE). L. Ryan, Mar-Jun max. 3 on 15/3 (NJW). Bromley SP, 14 on 17/4 (GAT). L. Heron, 42 on 18/3 (PJ). Ashburton Lakes, 649 on 12/7 (CFJO). L. Mapourika, 8 males on 14/11 (CSL). Ahuriri R. delta, 19 on 29/4 (CFJO). L. Waitaki, 3 on 7/5 (CFJO). Kinloch, 40 on 16/11 (MLB). L. Te Anau (opposite Fiordland NP), 104 on 4/8 (WJC).

AUSTRALASIAN HARRIER *Circus approximans*

Opuawhanga, 3 on 23/5 circling low over lawn (JFS). Flax Island, Mokohinau, 2 on 29/3 hawking over one of the tall pinnacles (AJG). Rangitaiki R. in Kaiangaroa Forest, 10 on 22/2 including several young birds (RWJ). Westshore census, 11 on 2/11; bird flushed off nest with 4 eggs, in rushes (W & MT, RW). Bell Block SP, 10 circling together on 7/2 (DGM). Blenheim, 1 immature on 17/2/80 flew through doorway into house and calmly stayed for 5 minutes (DJB). Mathias Pass (4500ft a.s.l.), 1 on 10/4 (GAT). Mangere I, Sep-Jan, 1/2 visiting from Pitt I regularly (AKM); 7/11, dead Snipe found, suspected Harrier kill (DVM).

NEW ZEALAND FALCON *Falco novaeseelandiae*

Pureora (Pikiariki Road), pair seen/heard frequently throughout year (JI). Motu R., 4 seen on 30-31/1 (GAT). Muriwai. Gisborne, 1 on 13/4 with almost dead feral pigeon (BJ, SJ). Herepuru Stream, near Matata, female found dead on 7/6 (PCML, GAT). Hillsborough, near New Plymouth, 1 on 12/7 (B. Rumball). North Egmont, pair in Oct (AAB). Te Popo, near Stratford, 1 in Oct (JM). Whenuakura, 1 on 3/5 (J. Clark). Alfriston, 1 on 6/2 (GF). Tararua Ranges, Field Hut area, 1 on 25/1 flying over snow grass with 2 Tuis in pursuit (LJD). Kahutara R., 1 on 6/9 (BE). Charleston, 1 on 3/5 (DJO). Mt Boris, Paparoas, 1 female on 12/4 (DJO). Speargrass Flat, Lewis Pass, 2 on 20/4 (CFJO). Duntroon, 1 on 11/3 (CFJO). Wanaka, 1 on 17/5 (CFJO). North Mavora Lake, 2 on 10/3 (WJC). Homestead Peak, West Matukituki (alt. 6560ft) on 6/3 male came to me as I was making squeaky noises to 3 Rock Wrens (PC). Routeburn, near swing bridge, 1 on 21/2 (MLB). Rees Valley, on 13/5, a pair chasing hare through mixed rockfall, tussock and snow patches; the hare eventually hid under boulder (PC). Glenorchy, on 31/12 (alt. 1050ft) seen to take female Blackbird in mid-air (PC). Windon Burn Valley, 1 on 16/3 (WJC). Takitimu Mountains, Southland, 1 at 1300 m on 3/12 (KM). Gorge Burn-Eyre Mountains, 2 on 14/3 (RRS).

CHUKOR *Alectoris chukar*

Mt Fyffe, 5 on 1/9 in group at 250 m (BE).

BROWN QUAIL *Synoicus ypsilophorus*

FoT, Whakatiwai, 2 on 20/11 (BC). Wharekawa, 2 on 5/12 (TC, AH). Katikati, 8 on 11/5 (BC). Kaituna Cut, 10 on 21/2 (PCML). Matata, covey of 6 on 5/7 and another of 4 (PCML). Te Popo, near Stratford, 1 present since 22/2 (JM).

CALIFORNIAN QUAIL *Lophortyx californica brunnescens*

Matata, c.10 on 12/6 in boxthorn thicket (PCML). Mamaku Plateau, flocks in cutover bush Jan-Jun (GAT). Waimangu Thermal Area, 7/2, several on road to tearooms (RWL). Whirinaki, 12 on 30/9 (JI).

BANDED RAIL *Rallus philippensis*

Waiwera, 1 on 14/4 (DGM). Whangaparapara, Great Barrier, 1 on 24/3 (DFB). Awaawaroa Bay, Waiheke I, 20/2, C. Gordon, farmer, described calls heard often from tidal creek (BB). Opoutere, 6 sighted 18-22/1 at edges of mangroves (BSG). Port Waikato, 1 on 23/1 (DMW). Whangamarino Swamp, 2/9, heard in three places (IS). Te Maunga, near Mt Maunganui Dump, 2 on 25/1 (PCML). Maketu, 1 on 14/3 (PCML). Aotea Harbour (opposite Morrison Road), 3 on 23/1 and 1 chick (JHS, BHS). Marahau, 2 on 13/3 early morning; 3 on 17/4, 8-8.30 a.m. and 3 at 4 p.m.; 4 on 18/4. 7-8 a.m. (BE).

WEKA *Gallirallus australis*

Muriwai, Gisborne, 2 on 21/8 heard calling, notable absence in this locality for 2-3 years (BJ, SJ). Rakauroa, Gisborne, 2 on 19/9 dead on road (BJ, SJ). Motu township, 15+ heard calling 5 km south on 29/12; according to a local person wekas have been present in

district only in last 8 years (GAT). Fox R., Paparoa Range, 25/4, 2 adults and 3 downy black chicks which hid in broken limestone at edge of dry riverbed (GAT); 1 adult seen to forage among rocks and pools at the riverside (GAT). Nelson Creek Farm Settlement, Westland, pair on 18/11/80 with 3 chicks (NJW). Diamond Lake, Cobb. 1 on 7/3 (BE). Punakaiki, pair on 11/9 with 2 down-covered chicks; 27/9, chicks now showing feathers on back; adult dropped earthworm, which was picked up by chick (NJW). Adult on 22/5 with 2 half-grown chicks (NJW). Mason Bay, 1 on 29/8 (CFJO). Halfmoon Bay, 3 on 13/1 (WJC). Ulva I, 5 on 13/1 (WJC).

MARSH CRAKE *Porzana pusilla*

Auckland Central Railway Station, 1 found dead on 9/8 (DR). Appleby, 1 on 27/2; 2 at daylight, 4 seen simultaneously at 9.30 a.m. on 28/3 (BE). Heathcote-Avon est., 1 on 17/5 (CFJO). L. Ellesmere, 18 records Oct 1981 to Jun 1982 (CFJO). Rakaia R. mouth, 1 on 23/4 (CFJO). L. Heron, 4 on 5/2 (CFJO). L. Selfe, 2 on 15/1 (CFJO).

SPOTLESS CRAKE *P. tabuensis*

Miranda, good population in a large and good swamp (LB). Mangatarata district, present in 7 places with 4-9 recorded at a time (LB). Meremere, 2/9, c.6 near railway Island Block Road, and 1 near Drakes Road (IS). Churchill West, 2 on 11/10 and at least 2 more heard; male shook violently when making "alarm-clock" call (BB). Rotorua lakes district, widespread in *Typha* swamps and lake reed margins, especially Whakarewarewa SF (GAT). Waimana, present in *Typha* swamp 26/12 (GAT). Torere Beach, near Opotiki, present in *Typha* swamp, 26/12 (GAT). Tarawera Forest, 4 on 28/2 heard in same swampy area as first recorded 20 years ago (RMW). Muddy Creek, Clive, 1 on 25/4 responded to tape (W & MT). Foxton Beach, 3 on 24/12 to 1/1 at Round Bush (JLM, MM). L. Ellesmere, 1 on 12/11 in raupo; 1 on 19/11 (CFJO).

PUKEKO *Porphyrio porphyrio melanotus*

Onewa Basin, Northcote, pair on 27/4 with 2 young about 2 weeks old (JPW). Pukekohe, on 11/3, 2/4 and 23/4 downy chicks seen (AH). Rotorua, Golf Course Government Gardens, 17 on 13/6 (RWJ). Tasman, pair on 22/2 with 4 chicks (BE). L. Ryan, 4 young on 15/3 not yet flying (NJW). L. Ellesmere, 45 on 22/4 (GAT).

AUSTRALIAN COOT *Fulica atra australis*

L. Whangape, 1 on 26/1 (JC, FT). Hamilton L., 58 on 17/4 (BHS). L. Rotoiti, total of 216 adults and 49 juveniles/chicks at western end on 17/1; on 17/6, 522 on Okawa Bay; further 247 present in four other bays. Appeared to be three age groups: adults with full frontal shields, subadults with thin reduced shield and juveniles with no frontal shields (probably 1st and 2nd clutches): birds of the year made up 90% of one flock of 120 birds (GAT). L. Aniwhenua, 10+ on 14/12 (WMH). L. Rotokuru, 1 on 11/1 (BE). L. Tutira, 70+ on 27/9 (W & MT); 40 on 3/2 (RMW). Te Pohue L., 7 on 30/1 (RMW). St Anne's Lagoon, Cheviot, 3 on 10/7 (CM); 4 on 23/10 (BE). L. Heron, 19 on 18/3 (PI).

SOUTH ISLAND PIED OYSTERCATCHER

Haematopus ostralegus finschi

Port Albert, c.200 on 24/2 at full tide (RBS). Jordan's Farm. Kaipara H, 3000 on 6/6 (BB). Matakatia, 4 on 11/4 (RBS). Auckland isthmus, few bays now escape their notice; Tamaki birds as tide rises. may resort to public parks and continue to feed (RBS). Karaka, 6000+ on 28/3 (BB). Manukau H census, summer 3085, winter 19 373 (BB). Miranda, 1250 on 20/9, 6000 on 4/4 (AH). FoT census, summer 1919, winter 11 800 (BB). Port Waikato, 80 on 11/7 (AH). Bowentown, 250-300 on 26/1 and 3/4 on shellbanks (PCML). Little Waihi (near Maketu), 11 on 17/4 (PCML). Kawhia Harbour, 7 on 27/2 (BHS). Muriwai Lagoon, Gisborne, 4, Feb to Apr (BRK). New Plymouth, 9 on 10/2 (RWW). Bell Block SP, 5 on 7/2 (DGM). Cape Egmont, 35 on 9/1 (DGM). Waitotara R. mouth, 4 on 14/2 (DGM, REL). Manawatu est., 83 on 30/1 (JLM, MM). Orowaiti est., 120 on 24/7, 515 on 16/2, 35 on 15/5 (DJO). Heathcote-Avon est., 1423 on 2/5 (GAT). Okarito, 30 on 14/11 (CSL).

VARIABLE OYSTERCATCHER *H. unicolor*

Kaitoke/Medland's Beaches, Great Barrier, 17 on 11/4 (KB). Puhoi est., 1 on 24/2, smudgy (RBS). Waiwera est., 24 on 17/4 (MJT). Tahuna-Torea, 9 on 18/5 among c.200 SIPO (MJT). Kuaotunu, Coromandel Pen., 44 on 8/8 (GMHP). Mangere, 1 on 29/4, black (RBS). Manukau H census, summer 4 (BB). Port Waikato, 4 on 11/7, 6 on 21/12 (AH). Orere Point, 1 on 23/10 (BB). FoT. Access Bay, 1 on 17/10 (AH). Opoutere H, 19/1, pair with 3 full-grown young; 4 pairs (PCML). Ohui-Opoutere, 19/1, north end to harbour at southern end (5 km), 5 pairs plus 2 almost fully grown young (PCML). Opoutere, 11 on 27/12; 28/12, pair and 2 chicks (BB). Stoney Point, Mt Maunganui, 2/8, pair flew in from Matakana I, mobbing a harrier as they came, to feed at *Gari stangeri* bed, a frequently used feeding ground (PCML). Sulphur Point, Tauranga, 4 pairs nesting on 26/11, 10 on 30/4 (KICF); 32 on 17/5 (GAT). Kaituna Cut-Maketu, 11 on 17/10, highest count for year (PCML). Maketu, 17 on 10/3, 10 in May, 16 in June (GAT). Little Waihi, 4 adults, 16 subadults on 17/10; 53 on 14/3 (PCML). Bowentown, 26/1, pair with 2 chicks; 1 half grown and the other much smaller and younger. Another 4 pairs present at distance from family party (PCML). Tarawera R. mouth, 1 pair on many visits all year (PCML). Whakatane R. mouth, 17 on 4/10 (WMH). 4 on 31/5 (GAT). Ohope Spit, 57 on 6/6 (GAT). Kawhia Harbour, North Head, pair on 26/12 with 2 chicks (R & GPG). Kawhia Ocean Beach, pair on 6/1 with nest, 2 eggs (LS). Tatapouri, Gisborne, 11 autumn/winter (BRK). Waitangi, HB, 2 on 23/12 (KVT). Waitotara R. mouth, 2 on 14/2 (DGM, REL). Rangitikei R. est., 4 on 25/10 (LJD). Manawatu est., 4 in Feb (JLM, MM). Otaki R., 40 on 11-12/5 (GAT). Maud I, 5 (black) on 17/4 (DJB). Okarito, 5 on 14/11 (CSL). Martin's Bay, Fiordland, 6 on 4/8 (WJC). Waipati Beach, South Otago, 10 adults, 1 chick on 19/1 (PC).

CHATHAM ISLAND OYSTERCATCHER *H. chathamensis*

Kaiangaroa Beach, 2 on 28/11 (KJT). Tahatika Beach, 2 on 30/11 (KJT). South East I, 27/12, 11 pairs and 2 single birds (DC). Mangere I, Dec, 2 pairs breeding; another pair seen (DC).

SPUR-WINGED PLOVER *Vanellus miles novaehollandiae*

Cooper's Beach, 3 on 4/9 (Taipa Block Road) (LJD). Onewhero, 29/8, nest with 4 eggs on B. Denize's farm (DMW). Kauaeranga Bridge, Thames, 5 on 15 and 17/10 in reclaimed paddock (AJG). L. Waikare outlet, 2 on 28/6, one seen to attack harrier (AH). Te Onetea Road, Rangiriri, 12 on 2/5 in fields by railway "for some time" Mr Stone, farmer (BB). Cambridge, May, 2 adult and 3 chicks (SM). L. Okareka, 1 on 10/6, first record (GAT). Sulphur Bay, L. Rotorua, 1 heard on 8/1 — first record for Rotorua City (GAT). L. Rerewhakaaitu, 14 on 13/12, 6 on 14/6 (GAT). Tauhara Forest, Taupo, pair on 23/4 (RWJ). Te Poi area, 2 on 21/7 chasing harrier (PA). Awaiti Wetlands, 17/4, birds heard calling (PCML). Maketu Lagoon, on 31/5/81, 6 birds flew in from south to rest and feed desultorily on the mudflats about 3 p.m.; this is first time species seen in coastal BoP (PCML). Kaituna, 1 on 2/4 feeding with Pied Stilts (AMc). Wairoa (Awamate), 8 on 10/12 (GF). Muriwai, Gisborne, 9 on 17/7 (BJ, SJ). Rangitaiki Plains, 1 on 14/1 road-killed (JPW). Cape Egmont, 10 on 17/9 (B. Richards). Waitotara R. mouth, 20 on 22/11 (DGM, JCM). Westshore, 19 on 21/11 (W & MT); 13 on 2/11 — 2 harassed Caspian Tern (KVT). Flaxmere, pair on 22/8 with 3 small chicks (JH). Pahiatua, 2 on 18/1 (BE). Manawatu est., 10 on 25/12 (JLM, MM). Foxton, Turnbull's Lagoon, 5 on 22/8 (LJD). Tuamarina, 42 on 1/7 (PJ). Wairau R., 70 on 8/8 in evening flocking on shingle banks (DJB). Kahutara R., pair on 13/11 with 2 chicks (BE). Kaiapoi, 6 on 18/5 (WJC). L. Ellesmere, 30+ on 26/7 feeding over exposed mud (PMS). Chatham I, Hapupu, 3 on 26/11; Tennants L., 3 on 25/11 (KJT).

GREY PLOVER *Pluvialis squatarola*

Kokota Spit, Parengarenga, 1 on 30/1 (CM). Karaka, 1 on 27/3 assuming breeding dress (AH). Mullet Creek, Farewell Spit, 3 on 14/11 and 18/11 (CM). Waituna Lagoon, 1 on 2/1 (RRS, MLB).

LEAST GOLDEN PLOVER *P. fulva*

Tapora, 30 on 14/2 (CM). Oyster Point, Kaipara H, 18 on 13/3 (DGB, TH). Whangapoua Beach, Great Barrier, 2 on 11/4 in field (KB). Karaka, 19 on 29/10, most in eclipse plumage (BSG); 20 on 16/1 (AH). Manukau H census, summer 12 (BB). Mataitai, 6 on 19/3 (AJG). Miranda, 5 on 5/12 (AH, TH). Kaituna Cut, present in varying numbers between 6/12 and 14/3 — highest count 44 on 28/12, but 30 on 14/3 and another flock of 45 seen shortly afterwards, just over the hill at Little Waihi (PCML). Maketu/Little Waihi, max. over summer 42 on 4/1 (GAT). Matahui Point, Tauranga H, 24 on 1/2 (BC). Ohope Spit, 37 on 28/3/81 (WMH); 15 on 1/1 (RMW). Muriwai Lagoon, Gisborne, 49 on 12/3 (BRK). Westshore, 48 on 23/12 (KVT). Manawatu est., 25 on 15/11 (LJD); up to 23 5-24/12 and present Jan/Feb, max. 38 on 27/2 (JLM, MM); 35 on 28/2 (LJD). Mullet Creek, Farewell Spit, 12 on 12/11 (CM). L. Ellesmere, 5 on 12/12, 11 on 6/2 (PMS); 18 (3 in breeding plumage) on 24/2 (CM); max. 48 in summer 1981-82 (CFJO). Waituna Lagoon, 21 on 2/1 (RRS).

NEW ZEALAND DOTTEREL *Charadrius obscurus*

Tawharanui RP, 3 on 10/1 (BMS, DMS). Tapora, 15 on 14/2 (CM). Oyster Point, Kaipara H, 20 on 14/3 (BB, RBS); 4 on 6/6

(BB). Kaitoke and Whangapoua Beaches, Great Barrier, 11 between 8/4 and 13/4 (KB). Wiroa I, Auckland Airport, 3 on 5/7; none seen since 7/1 (BSG). Karaka, max. 10 on 25/4 (BB, TC). Manukau H census, summer 25, winter 32 (BB). FoT, Wharekawa, 10 on 27/6 (RBS). FoT census, summer 4, winter 14 (BB). Nest at the old limeworks Miranda, had 2 differently coloured eggs and 3 birds around it in 5/12 (TC, AH). Opoutere, 8 on 28/12 (BB). Port Waikato, 10 on 10/1, nest within 3 m of Variable Oystercatcher's nest (AH). Kawhia H (North Head), 2 pairs on 26/12 with 1 chick each, 1 pair with 3 eggs (R & PG); 25 on 11/7 (BHS). Aotea Harbour, 3 on 10/7 (JHS, BHS). Bowentown Beach, 14 on 7/5 (BC). Sulphur Point, Tauranga, 25/1, 1 pair with 2 half-grown chicks, 1 pair with territory but no nest/young and small roosting flock of 6 (PCML); 22 on 4/4 (BC); 4 pairs on 26/11 attempting to nest despite industrial development (KICF). Aerodrome Bay, Tauranga, 2 pairs on 8/6 in breeding plumage (KICF). Little Waihi Beach, 20 on 14/3 (RMW); 14 on 16/5, 4 on 15/6 (GAT). Kaituna Cut, 17/10, 3 pairs nesting in field adjacent to lagoon, 1 nest with 1 egg; no other nests found (PCML). Maketu, max. over summer, 14 on 10/3; 14 on 15/6 (GAT). Otamarakau, 1 on 18/5 (GAT). Herepuru Stream, near Matata, 3 on 7/6 (GAT). Tarawera R. mouth, 2 on 9/5/81 (WMH); 3 on 31/5 (GAT). Ohope Spit, 8 on 19/10/80; 6 pairs on 31/10 (1 pair with chick) (RMW). 42 on 21/3 (RMW). 46 on 31/5, 32 on 7/6 (GAT); 18 on 19/9 (WMH). Waikanae Beach, 1 on 30/8 (BMS, DMS). Motueka Sandspit, 2 on 24/4 (BE).

BANDED DOTTEREL *C. bicinctus*

Kaipara H, Jordan's Farm, 400+ on 6/6 (BB); Oyster Point, c.200 on 13/3 (DGB, TH). Whangapoua Beach, Great Barrier, 2 on 11/4 (KB). Mataitai, c.50 on 19/3 (AJG). Manukau H census, summer 2, winter 557 (BB). FoT census, summer 2, winter 285 (BB). FoT, Wharekawa, 32 on 16/2; 60 on 27/6 (RBS); Miranda, 130 on 3/2 (RBS). Port Waikato, c.50 on 11/7 (AH). Mt Maunganui Wharf, on 29/10 1 adult with at least 2 chicks one or two days old, in log-storage area (PCML); 8 pairs nesting 14/11 in railway yards on bulldozed gravel patch (KICF). Tauranga Airport, c.250 on 12/3 flocking and feeding; none seen 12/4 (BHS). Kaituna Cut, 20 on 25/7 and 28/12 (PCML). Ohope Spit, 119 on 9/1/81 (WMH). 100 on 21/3 (RMW); c. 590 on 7/6 (GAT). Kawhia H (North Head), 20 on 26/12 (R & GPG); 281 on 27/2, 400 on 11/7 (BHS). Kawhia Ocean Beach, Aotea H, 7 on 23/1; 240 on 7/5 spread in a line across beach (LS). L. Rotorua, 0 on 16/11, 3 on 11/12; 11 on 25/2 following strong NE storm and still present 2/3; 1 on 10/6 (GAT). L. Rotomahana, 3 on 14/6 feeding on exposed mudflat (GAT). Mt Tarawera, 4 on 25/11 (DOB); 3 on 12/12 (RMW). Muriwai Lagoon, Gisborne, 44 on 1/2 (BRK). Tukituki R. bed, 13 on 15/8 at nesting territory (JL, CS, KVT). Waitangi, HB, 14 on 29/10 (KVT). Rangipo Desert, 33 on 13/1 (DJB). Tongariro NP, 1 on 29/1 flying over saddle between Blue L. and Centre Crater (BSG). New Plymouth, airport, 20 in June (RWW). Waitotara R. mouth, 1 on 22/11; c.50 on 14/2, many in immature plumage (DGM, JCM, REL). Rangitikei est., 70+ on 13/6, mostly in breeding plumage, rest nondescript (BDH). Manawatu est., 83 on 7/6 (JLM, MM). Greymouth airfield, 18 on 5/6

(CSL). Blaketown Lagoon, c.30 on 5/6 (CSL). Punakaiki, 24/11, 4 or 5 pairs holding territories on 200 m of beach, 2 nests found but later washed out; 29/1, 1 juvenile (NJW). Farewell Spit, c.860 on 25/6 (JHS, BHS). Wairau Lagoon, 21+ on 2/1 (DJB). Lake Heron, Hokitika R. mouth, 45 on 8/8/80 (NJW). L. Ellesmere, 230 on 26/7 19 on 18/3 (PJ). Kahutara R., pair on 13/11 with chick (BE). Hokitika R. mouth, 45 on 8/8/80 (NJW). L. Ellesmere, 230 on 26/7 on exposed mud with many more scattered over *Salicornia;* much territorial calling and chasing; 10 on 18/10 in loose flock comprising 4 adults and 6 juveniles (PMS); 3 birds colour banded at Melbourne recorded summer 1981-82 (CFJO). Te Whanga, Chatham I, 6 on 26/11 (KJT).

MONGOLIAN DOTTEREL *C. mongolus*

Kidd's Bay, 1 on 27/2 (RBS). Manukau H summer census, 3 pale birds; 4 seen by KJF on 12/4; 1 more strongly marked. Single bird on 24/1, 25 and 28/4 but 3 on 14/4 (BB *et al.*). FoT, Access Bay, 1 on 18/2 assuming breeding plumage (CM). L. Ellesmere, 1 on 13/1 (CFJO).

LARGE SAND DOTTEREL *C. leschenaultii*

Karaka, 1 on 19/9 with no breast band but crown with chestnut wash (AH); 1 on 29/10 (BSG). Manukau H summer census, 2; 4 on 29/11; 1 in breeding plumage on 21/6 overwintered (BB *et al.*). FoT, 1 on 20/9 (AH); 1 from 4/10 to 3/4 (BSG, GMHP, RBS, JRH); 1 on 18/4 (AH). Ashley R. mouth, 1 on 26/10 in non-breeding plumage (PMS).

BLACK-FRONTED DOTTEREL *C. melanops*

Kaituna Cut, 1 on 14/7 and 25/7 (PCML). Otamarakau (Waitahanui R. mouth), 1 on 7/6 and 12/6 (PCML, GAT). L. Rotomahana, 7 on 14/6 feeding on mudflat and among drowned manuka, 1 at lake margin; when feeding over mud, the foot "shivering" method was used, alternately with each leg, as the birds moved around (GAT). Te Hauke, 10 on 22/8 (KVT). Waitangi, HB, 6 on 25/4 (RG, KT). Waikanae R. flats, 1 on 23/5 (FN). Tuamarina, 1 on 6/2 (PJ). Wairau R., 1 on 14/2 (DJB). Nelson Haven, 1 on 4/5 and 5/5 (JMH). Waipara R., 1 on 14/11, 5 km from mouth (SCS). L. Ellesmere, 2 on 27/9 attempted copulation (PMS). Washdyke Lagoon, 1 on 9/11 (BHS). Orari R. mouth, 7 on 29/8 feeding on marshy ground in paddock (PMS). Spider Lagoon, 3 on 21/2 (PMS). Aparima R., 2 pairs on 26/10 incubating (RRS). Thornbury, 6 on 24/2 (OJL). Mataura R., Wyndham, 2 on 25/2 (RRS).

NEW ZEALAND SHORE PLOVER *Thinornis novaeseelandiae*

South East I, Dec, 40 pairs breeding; total population 105 (DC).

WRYBILL *Anarhynchus frontalis*

Kokota Spit, Parengarenga, c.100 on 30/1 (CM). Whangapoua Beach, Great Barrier, 4 on 9/4 (KG, BG). Kaipara H, Tapora, 25 on 14/2 (CM); Jordan's Farm, c.6 on 6/6 (BB). Mangere SP, 600+ on 29/4 at No. 4 Pond (RBS). Karaka, 406 on 21/7 (KJF); 500 on 22/5 (RG, BB). Manukau H census, summer 32, winter 1587 (BB); c.4000 on 2/2; flocks visit flats above Mangere Bridge and some cross the isthmus to feed in the Tamaki est. (RBS). FoT, 90+ over-

summering on 17/11 (RBS); 300 on 10/1 (CM); 1300 on 18/2 (Access Bay) (CM); census, summer 312, winter 3009 (BB). Port Waikato, 6 on 11/7, 16 on 13/4 (AH); 11 on 9/5 (BB *et al.*). Matahui Point, Tauranga H, 55 on 13/6 (BC). Sulphur Point, 3 on 26/11, 90 on 30/4 (KICF); c.100 on 17/5 flew in and left within two minutes, flying south (GAT). Maketu, 1 on 21/1, 7 on 15/6 (GAT). Kaituna Cut, a few on numerous visits during year, highest count 17 on 27/2 (PCML). Muriwai Lagoon, Gisborne, 44 on 12/3 (BRK). Waitangi, HB, 1 on 3/6 (KVT). Rangitikei R. est., 3 on 22/10 (LJD). Manawatu est., present all months, max. 33 on 25/10; 21 on 27/6 (JLM, MM, LJD). Motueka Sandspit, 2 seen on several occasions during Feb and Mar (BE, JMH). Nelson Haven, 1 on 4/1 (CFJO). Waipara R., 3 on 14/11 on extensive shingle flats (SCS). L. Ellesmere, 4 on 3/10. 2 on 18/10, 13 on 3/2 (PMS); 40 on 24/2, 19 on 19/3 (CM); max. 10, summer 1981-82 (CFJO). Makarora R. bed, only 2 found on 25/10 (PC). Ahuriri R. (North Otago), 5 on 30/12 during walk up riverbed, from L. Benmore to 2 km upstream (LJD). Matukituki R. bed, 7-9/11, total 18 birds seen; 6 pairs with nests (1 empty, others each with 2 eggs); another pair with 1-week-old chick (PC).

FAR-EASTERN CURLEW *Numenius madagascariensis*

Paua, Parengarenga, 3 on 1/2 (CM). Karaka, 1 on 2/7, 3 on 29/10 and 10/2 (BB, BSG). 1 on 7/2 (CM). Yates Point, Manukau H, 3 on 13/2 (RBS). Manukau H census, summer 4 (BB). FoT summer census, 5; Miranda, 2 on 20/9 (AH); 4 on 4/12 (RP); 9 on 1/2 (TC, R. & T. McKenzie); 9 on 18/2 (CM). Matahui Point, Tauranga, 1 on 20-21/3 (BC). Ohope Spit, 1 on 19/12, 1/1, 11/4, and in May 1982 (WMH, RMW). Kawhia Harbour, 1 on 27/2 (BHS). Manawatu est., 1-3 from 22/8 to 28/2 (JLM, MM, LJD). Farewell Spit, 3 on 25/6 (BHS); 7 on 13/11 (CM). Orowaiti est., Westport, 1 on 15/12 (DJO). Ashley R. mouth, 1 on 12/3 (CFJO). Hokitika R. mouth, 1 on 13/11/80 (NJW). Waituna Wetland Reserve, 6 on 16/12 (RRS).

ASIATIC WHIMBREL *N. phaeopus variegatus*

Kokota Spit, Parengarenga, 1 on 30/1 (CM). Paua, 2 on 1/2 (CM). Karaka, 2 on 7/2 (CM). Manukau H census, 2 on 13/12 (BB). Piako/Waitakaruru R. mouths, 22 on 10/12 (RP). FoT, Waitakaruru, 22 on 10/12 (R. Parish, Wildlife Service). Ohope Spit, 3 on 26/12/80 (WMH); 1 on 1/1, 3 on 11/4 (RMW). Kawhia H, 2 on 11/7 (BHS). Farewell Spit, 3 on 25/6 (JHS, BHS); 2 on 13/11, 7 on 18/11 (CM). Okarito beach, 1 on 14/11 with godwits and knots (CSL).

AMERICAN WHIMBREL *N. p. hudsonicus*

Paua, 1 on 1/2 (CM). Karaka, 5 on 21/7 with dark rumps (KJF). 1 on 7/2 (CM). Manawatu est., 1 on 28/2 (JLM, MM). Farewell Spit, 2 on 25/6 (JHS, BHS); 3 on 13/11, 2 on 18/11 (CM). Waimatuku mouth, 1 on 28/3 (MLB).

WHIMBREL sp.

Jordan's Farm, Kaipara H, 14 on 13/3 (BB). Karaka, 5 on 16/8 (BB); 4 on 19/9 (AH); 8 on 14/3 (IS); 3 on 14/4 (BRK).

Manukau H census, 5 on 13/12 (BB). Manawatu R. est., 1 on 28/2 (LJD). Mullet Creek, Farewell Spit, 5 on 13/11 (CM).

LITTLE WHIMBREL *N. minutus*
Jordan's Farm, Kaipara H, 1 on 13 & 14/3 (BB, HH, BS, *et al.*)

ASIATIC BLACK-TAILED GODWIT *Limosa limosa melanuroides*
AMDB ponds, Mangere, 1 on 9/7 in flight (BB, E. J. Keeble); 1 on 16/7 (AH); 1 on 1/3 (M & SG). Manawatu est., 2 from 16/1 to 30/6, neither showing any sign of breeding plumage (JLM, MM). Farewell Spit, 1 on 24/6 (JHS).

HUDSONIAN GODWIT *L. haemastica*
Westshore, 1 on 2/11 (NBM). Manawatu est., 1 on 24/10; 1 on 1/5 to 7/6, in breeding plumage (JLM, MM).

EASTERN BAR-TAILED GODWIT *L. lapponica*
Karaka, 1500 on 19/9, 8000 on 23/11 (AH); 4000 on 23/1 (CM, BAE); 7000 on 14/3 (IS); 1000+ on 28/3, 300 on 22/5 (RC). Manukau H census, summer 14 274, winter 1316 (BB). Mataitai, 800 on 4/11 (AH). FoT census, summer 4950, winter 436 (BB). Access Bay, 8000 on 23/9 (RBS). Miranda, 2500+ on 14/11 (GJHM). Port Waikato, 30 on 21/12 (AH). Bowentown, c.1000 on 26/1 (PCML). Kaituna Cut, c.500 on 17/10, c.800 on 27/2 (PCML); c.2000 on 26/11 (KICF). Matahui Point, Tauranga H, 1500+ on 18/3 dropping to 200 by Jun (BC). Ohope Spit, 2000+ on 9/2/81 (WMH). Kawhia Harbour, 2700 on 27/2 (BHS). Muriwai Lagoon, 198 on 5/10 (BRK). Wairoa R. est., 20 wintered over (GF); 250 on 25/12 (GF). Bell Block SP, up to 6 between 17/10 and 1/11 (DGM, RWW). Manawatu R. est., present all year, max. 420 on 27/2, min. 2 on 1/8 (JLM, MM). Pauatahanui, 10 on 26/10 (DMS, BMS). Armers Beach Lagoon, 1 on 25/1, very rare at Kaikoura (BE). Orowaiti est., Westport, 1 on 24/7, 13 on 7/10, 10 on 2/12, 3 on 16/2, 1 on 21/6 (DJO). Heathcote-Avon est., 203 on 2/5 (including an albino) (GAT). Ashley est., 100+ on 26/10, 7 on 18/4 (PMS). Whitestone R., Te Anau, 1 on 14/10 (RRS). Invercargill est., 240+ on 24/9; 2000+ on 26/9 (MLB). Te Whanga Lagoon, Chatham I, 8 on 26/11 (KJT).

GREENSHANK *Tringa nebularia*
Te Werahi Stream, Cape Maria Van Diemen, 1 on 30/1 — a resident since 1978! (CM, DFB). Matahui Point, Tauranga H, 1 seen at different times from 18/3 to 13/6 (BC); probably same bird seen Nov 1977 (PCML). Awarua Bay, 1 on 6/12 (MLB). Invercargill est., 1 on 5/12 (MLB).

MARSH SANDPIPER *T. stagnatilis*
Miranda, 1 on 14/1/82 feeding in "flooded" paddock north of limeworks and associating with Pied Stilts (BHS). FoT, 1 first seen on 7/5/80, stayed right through and was still frequenting "Swallow Pools" on 18/4 (BB *et al.*). Kaituna Cut, 1 on 16/2 (GAT); 1 on 14/3 and occasionally seen up to 19/6 (BC, RMW, WMH); 1 on 15/6 (GAT). L. Ellesmere, 2 on 12/12/81 feeding on damp mud in much the same way as Wrybills, holding head horizontal and sweeping bill side to side; 3 on 6/2 feeding very actively over *Salicornia*

by scything bills for flies (PMS); 3 on 24/2 (CM); 3 present 12/1/81 to 17/4/82 — first 2 arrived c. 13/11/81; 4th arrived at Cooper's Lagoon 12/2 (CFJO).

WANDERING TATTLER *T. incana*
Armer's Beach, Kaikoura, 1 on 24/4 in summer plumage (JFMF).

SIBERIAN TATTLER *T. brevipes*
Karaka, 1 on 14/4 seen regularly for 2 years (BB *et al.*). Kaikoura, 1 on 13/9 (PMS); 3 on 27/10 (GAT).

TATTLER sp.
Karaka, 1 on 19/9 (AH). Armers Beach, Kaikoura, 2 on 4/12 (BE). Awarua Bay, 2 on 6/12 (MLB).

COMMON SANDPIPER *T. hypoleucos*
Wairoa River, Westhaven, bird seen on 12-13/3/81 was still on same patch 17/11 and 21/11 (CM, BDH).

TEREK SANDPIPER *Xenus cinereus*
Paua, 2 on 1/2 (CM). Ngapuke Creek, Kaipara H, 2 on 13/3 (BB, NP). Karaka, 1 on 23/1 and 8/2 (CM, BAE, JU). FoT, Miranda, 1 over summer, still present on 29/6 (RBS, AH); 2 on 24/7 (BHS); Taramaire, 1 on 23/12 (CCO); Access Bay, 1 on 18/2 (CM); 2 on 26/5 (BC). Farewell Spit, 1 on 25/6 (BHS).

TURNSTONE *Arenaria interpres*
Wiroa I, Auckland Airport, 50 on 31/10 (BSG). Farm Point, Mangere, 10 on 26/1 on rocks (RBS). Karaka, 405 on 29/11, 30 on 22/5 (BB, RC). Manukau H census, summer 264, winter 123 (BB). Wharekawa, FoT, 60 on 3/2; 22 on 27/6 (RBS). Kaiaua, c.200 on 16/2 on stony beaches (RBS). FoT census, summer 80, winter 26 (BB). Matakana I, c.200 on 13/11 with godwits on Ocean Beach (FN). Tauranga H, north end, 200+ roosting on shellbanks in Jan building up to 600+ on 3/4 (BC). Bowentown Beach, c.300 on 26/1; 800/1000 on 3/4 — this count far greater than is normal for Tauranga Harbour; usual 300 birds could have been joined by migrants moving north; majority departed on 3/4 (PCML). Maketu est., max. 21 on 4/1; 7 on 6/3 (GAT). Kaituna Cut, 6 on 17/10 (WMH). Muriwai Lagoon, Gisborne, 1 on 23/11 and during Feb (BRK). Westshore, 5 on 7/11 (KVT). Bell Block SP, 2 on 17/10 (RWW). Manawatu est., present 3/10 to 29/12, max. 9 on 23/12; then 1 on 28/2 (JLM, MM). Farewell Spit, 149 on 23/6 (JHS, BHS). Motueka Sandspit, 200 on 27/3 (BE). Nelson Haven, 1 on 23/11; rarely seen in this location (JMH). Armer's Beach Lagoon, 44 on 7/1 (BE). L. Grassmere, 21 on 3/4 (BDH). Kaikoura Pen., c. 161 on 27/10, 3 still on 9/5 (GAT). Ashley R. mouth, 1 on 28/10 (PMS). L. Ellesmere, 1 on 6/2 (PMS); max. summer 1981-1982, 10 (CFJO). Rakaia R. mouth, 9 on 29/3 (CFJO). Ashburton R. mouth, 2 on 3/82 (CFJO).

CHATHAM ISLAND SNIPE *Coenocorypha aucklandica pusilla*
Mangere I, estimated 20-30 pairs in 4-ha bush; remains of bird found in skua midden 3/12 (DVM). Eggs found Sep to Dec (AKM).

KNOT *Calidris canutus*

Oyster Point, Kaipara H, 10 000+ on 13/3 (DGB, TH). Wiroa I, Auckland Airport, 5 on 5/7, 50 on 31/10 (BSG). Manukau H census, summer 23 200 (18 000 at Karaka, the largest flock so far recorded there); winter 2964 (BB). Karaka, c.10 000 on 23/1 (CM, BAE) and 8000–10 000 on 14/3 (IS); 1000 on 22/5 (RC). FoT census, summer 7500, winter 3700; Access Bay, 6000 on 17/11 and 1800 on 16/5 (BB). Matahui Point, Tauranga H, 25 on 18/3 (BC). Maketu, max. 6 on 17/2 (GAT). Lake Tarawera, 1 in Nov 1981; hit power lines, probably blown inland by storms (GAT). Bell Block SP, up to 7 between 17/10 and 1/11 (DGM, RWW). Muriwai Lagoon, 4, Oct-Nov (BRK). Wairoa R. est., 25 on 25/12 (GF). Waitangi, HB, 4 on 5/11 (KVT). Westshore, 7 on 2/12 (KVT). Manawatu est., present from 12/9 until 28/3, max. 205 on 30/1 (JLM, MM). Farewell Spit, 88 on 23/6 (JHS, BHS). Nelson Haven, 1 on 4/1 (CFJO). Orowaiti est., Westport, 1 on 15/12 (DJO). Okarito, 4 on 14/11 (CSL). L. Ellesmere, 51+ on 12/12, 19 on 4/1, 30+ on 3/2, 45 on 6/2 (PMS); max. summer 1981-82, 80; 6 overwintered (CFJO). Taupeka Point, Chatham I, 75+ on 27/11 (KJT).

SHARP-TAILED SANDPIPER *C. acuminata*

Kaipara H, 13/3, 1 at Ngapuke Creek and 2 at Oyster Point (BB, DGB, TH). Manukau H, Karaka, 4 on 16/1 (AH); Yates Dam, 2 on 3/12 (RBS); summer census, 5; 4 at Karaka on 16/1 (BB, AH) and 12/4 (KJF). FoT, Miranda, 6 on 1/2 (RWL); Access Bay, 5 on 18/2 (CM); census, summer 7, winter 1 (BB); "Swallow Pools," 9 on 21/3 (TC). Kaituna Cut, 7 on 10/2 (WMH); 10 on 22/2 (GAT); 8 on 14/3 (RMW). Whakatane SP, 3 on 2/1 (RMW, WMH). Westshore, 5 on 7/11 (KVT). Manawatu R. est., 2 on 15/11 (LJD); 2 on 20/24 Dec; up to 7 from 13/2 to 28/3 (JLM, MM). L. Ellesmere, 1 on 4/1 and 19 on 3/2 (PMS); 20 on 24/2 (CM); max. summer 1981-82. 25 (CFJO). Southland, Waimatuku R. mouth, 1 seen 5 times between 1/12 and 28/3 (MLB); Awarua Bay, 7 on 6/12 (MLB). Hapupu, Chatham I, 3 on 26/11 (KJT).

PECTORAL SANDPIPER *C. melanotos*

Karaka, 1 on 16/1 and 14/3 (AH, BB, IS). Access Bay, FoT, 1 on 31/1 (BG, GMHP); 1 on 28/4 (BG, GMHP, BSG). Taramaire/Miranda, 3 on 7/12 (RP). Kaituna Cut, 2, 18-27/2 (PCML). Bell Block SP, 1 26-28/10 (DGM, REL). Westshore, 3 on 18/11 (KVT). Manawatu R. est., 1, 20-24 Dec (JLM, MM). L. Ellesmere, 8 on 4/1 roosting with Pied Stilts high on shore; 1 on 6/2 (PMS); 7 on 24/2 (CM); max summer 1981-82, 9; 2 overwintered (CFJO). Ashburton R. mouth, 1 on 26/2 (CFJO). Oamaru, 2 on 12/3 on small farm pond 5 km inland (CFJO). Waimatuku R. mouth, 3 seen 5 times between 1/12 and 28/3 (MLB).

CURLEW SANDPIPER *C. ferruginea*

Karaka, 7 on 2 and 5/7, 8 on 19/7 (BB). FoT, Miranda, 18 on 18/4 (AH); Access Bay, 17 on 18/2 (CM); Taramaire, 3 on 4/12 (RP); 12 on 28/2 (PCML); 11 on 28/4 (BSG). FoT census, summer 20, winter 1 (BB); 22+ on 21/3 (TC); red-tagged bird seen on many occasions (BB); 12+ on 18/4, darkly red (RBS); lone very red

bird on 16/5 (BB). Westshore, 1 on 10/10 (KVT). Farewell Spit, 1 on 25/6 (JHS); 4 on 13/11 (CM). L. Ellesmere, 2 on 26/7; 1 on 3/10 very highly coloured; 31+ on 12/12, 17 on 3/2 (PMS); 60 on 24/2; 29 on 19/3 (CM); 26 on 22/4 (GAT); max. summer 1981-82, 64; 5 overwintered (CFJO). Awarua Bay, 13 on 6/12 (MLB).

RED-NECKED STINT *C. ruficollis*

Tapora, 1 on 14/2 (CM). Manukau H, Karaka, 8 on 19/7, 13 on 18/10 (BB); 4 on 29/10 (BSG); 23 on 23/11, 30 on 16/1, 20 on 12/4 with 12 showing colour (BB); 12 on 7/6 (BB, KJF, AH); harbour census, summer 24, winter 12 (BB). Miranda, 5 on 3/2, a few all summer (RBS, JRH). FoT census, summer 3, winter 1 (BB). Bowentown, 1 on 10/4 with Banded Dotterel (FN). Kaituna Cut, at least 4 present between 17/10 and 27/2 (PCML, WMH). Maketu, 7 on 4/1, 5 on 10/3, 1 on 15/6 (GAT). Ohope Spit, 1 on 9/1/81 (WMH). Muriwai Lagoon, 2, Feb (BRK). Westshore, 2 on 10/12 (KVT). Manawatu R. est., 2 on 28 & 29/11, 2 on 13/2 (JLM, MM). Farewell Spit, 3 on 14/11 (CM); 7 on 23/6 (JHS). L. Ellesmere, 7 on 26/7 (PMS); 150 on 24/2; 51 on 19/3 (CM); max. summer 1981-82, 214; 1 overwintered (CFJO); 93 on 16/4 (GAT); 3 on 4/5 (GAT). Awarua Bay, 39 on 6/12 (MLB).

SANDERLING *C. alba*

Karaka, 1 on 23/5 (RC, AH). L. Ellesmere, 1 on 13/11 (CFJO). Mullet Creek, Farewell Spit, 1 on 12/11 (CM). Awarua Bay, 1 on 6/12 (MLB).

PIED STILT *Himantopus himantopus leucocephalus*

Manukau H census, summer 1899, winter 4691 (BB). FoT census, summer 1160, winter 4495 (BB). Little Waihi, 259 on 16/5 (GAT). Kaituna Cut, c.300 on 19/6 (PCML). Maketu, 667+ on 16/5 (GAT). L. Rotomahana, 115 on 10/1 (GAT). L. Rerewhakaaitu, 341 on 13/12 (GAT). Kawhia H, 318 on 27/2 (BHS). Bell Block SP, 60 on 21/11 (DGM). Waitotara R. mouth, 55 on 14/2 (DGM, REL). Westshore, 928 on 2/11 (KVT). Patea R. mouth, 17 on 3/4 (DGM). Manawatu est. present all year, max. 355 on 1/5 (JLM, MM). Arahura R. mouth, 30 on 22/1/81 (NJW). L. Grassmere, 168 on 3/4 (BDH). Cobden Lagoon, 7 (inc. 2 juv) on 5/6 (CSL). Rangiriri, Chatham I, 2 on 28/11 (KJT).

BLACK STILT *H. novaezeelandiae*

Kaipara Harbour, Jordan's Farm, 1 on 14/3, smudgy (BB); Ngapuke Creek, 1 on 14/3, a typical subadult, not quite all black (RBS); Oyster Point, 1 on 14/3 showing some white (RBS). Wiroa I, Auckland Airport, 1 on 29/5 feeding with 50 Pied Stilts — lower breast and belly smudgy; patch of white on cheeks and throat; under tail white (BSG). Puhinui Creek, Manukau H, 1st week in May, 1 (R. Cometti). Waimahia Inlet, Manurewa, 1 on 3, 4 & 7/11 (KJF). Miranda, 1 on 14/3 (LB). Kawhia H, 8 on 27/2 — 4 all black, 2 with some speckling on belly and around vent, 2 with a little white at base of bill and vent (BHS). Manawatu est., smudgy immature from 16/1 to 28/2 (JLM, MM). Ahuriri R., North Otago, 2 on 30/12 2 km up river from mouth at L. Benmore; not banded and were feeding in shallow water running over gravel; did not associate with 13 Pied Stilts 20 m away (LJD); 18 on 2/4, and up

to 33, 26/4-14/5 (CFJO). Godley R. delta, 5 on 2/4 (CFJO). Dobson R. delta, 2 on 2/4 (CFJO). Totaranui, 1 on 13/2 (CFJO).

SOUTHERN GREAT SKUA *Stercorarius skua lonnbergi*

Foxton Beach, 1 on 12/10/80 (JLM, MM). Waitaki R. mouth, 1 on 11/3 (CFJO).

POMARINE SKUA *S. pomarinus*

Foxton Beach, an immature bird with pale rump on 13/4 (JLM, MM). Farewell Spit, 1 on 13/11 (CM). Kaitorete Spit, L. Ellesmere, 1 on 13/11 (CM). Rakaia R. mouth, 2 on 23/3 (CFJO).

ARCTIC SKUA *S. parasiticus*

Whangarei H, 1 on 16/5 (CM). Waiheke I, 2-3 on 26/11 offshore (BB). Taramaire, Fot, 2 on 4/12 (RP). Ohui, offshore between mainland and Slipper I, 1 dark phase on 18/1 (PCML). Papamoa, offshore between mainland and Motiti I, 1 dark phase on 26/1 (PCML). Papamoa Beach, 2 pale phase on 9/3 chasing White-fronted Terns over beach (PCML). Kawhia H, 1 on 27/2 (BHS). Foxton Beach, 1 on 26/10; up to 3 from 27/3 to 10/4 (JLM, MM). Ohau (Levin), 1 on 9/1 (white below, whitish rump, white patch on base of primaries; in primary moult) (BDH). L. Ferry, 2 on 28/3; 6 on 8/4, 2 with white below and 1 with pale rump (BDH, JES). Farewell Spit, 1 on 12/11 (CM). Nelson Haven, 1 on 21/6 (JHS). Tauranga Bay, Cape Foulwind, 1 on 2/12 (DJO). Punakaiki, 2 on 25/1 (NJW). Porarari R. Beach (Punakaiki), 2 on 17/3 (DJO). Charlestown, 2 on 18/4, 7 on 27/4, 5 on 28/4 (DJO). Cobden Beach, 2 on 15/4 (NJW). Kaitorete Spit, L. Ellesmere, 1 on 18/4 (CM). Queen Charlotte Sound, birds of both light and dark phases seen during Dec and Jan (SCS).

SKUA sp.

Waitotara R. mouth, 1 dark phase probably Arctic following White-fronted Terns on 14/2 (DGM, REL). Miranda, on 4/4 on two occasions skua mobbed by godwit and knot flocks until intruder well clear of roost; nearby roosting SIPO stayed put, other small waders, Wrybill, etc., took flight but did not participate (AH).

BLACK-BACKED GULL *Larus dominicanus*

Manukau H census, summer 479, winter 959 (BB). FoT census, summer 1015, winter 848; Taramaire, up to 150 inland on 17/10 and c.50 young grey birds on 17/11 (BB). Mt Tarawera, 425-500 on 12/12; 31 empty nests, 7 with 1 egg, 5 with 2 eggs, 1 with 3 eggs; chicks running free, 10 (RMW). Waitotara R. mouth, several hundred nests with eggs and chicks on 22/11; deserted by 14/2 but many corpses, some freshly killed (DGM, JCM, REL). East Clive, small nesting colony 29/12 (KVT). East Clive to Awatoto, HB, 1725 on 18/7 (KVT). Westshore, 235 on 2/11 (KVT). South East I, estimated 32 breeding pairs Nov with main concentration near seal colony (MDD).

RED-BILLED GULL *L. novaehollandiae scopulinus*

Outpost I, Leigh, c.40 on 9/1, including a few with nests (MJT). Manukau H census, summer 105, winter 3819 (BB). FoT census, summer 238, winter 1196 (BB). Pongakawa Stream (BoP), 350 on 11/4; group feeding on grass pasture, some flying ahead and feeding,

then birds from the back flying forward over mob and feeding ahead (JHS, BHS). Sulphur Point, L. Rotorua, 1000 on 4/3 (RWJ). Waitangi, HB, 230 on 31/3 (KVT). Punakaiki, 42 on 12/1, including 6 juv (NJW). Nellies Nook, South East I, egg laying began about 18/11; estimate 25 breeding pairs on island (MDD).

BLACK-BILLED GULL *L. bulleri*

Kawakawa Bay, 10 on 27/6 (RBS). FoT, census, summer 50, winter 15 (BB); Access Bay, 60-100 on 1/2, 30 half-grown chicks (TC). Kawhia H, 3 on 27/2 (BHS). Tarawera R. mouth, 4 on 26/6 (PCML). Sulphur Point, Rotorua, 90 on 14/3, including 14 first-year and 5 second-year birds (RWJ). Muriwai Lagoon, Gisborne, 100+ on 24/5 (BRK). Wairoa R. bar, c.125 pairs Dec, many young well developed by 25/12, nests still with eggs (GF). Opoutama Beach, Mahia, 8 on 29/11 (GF). Waitangi, HB, 500 on 29/10; 5/11, nests being built, total 230; weekly visits made until chicks hatched, but on 21/1, site had been vandalised and was deserted (KVT). L. Horowhenua, 60 on 9/1; 0 on 29-30/5 (BDH). Farewell Spit, 167 on 25/6 (JHS, BHS). Buller/Howard R., 80+ with 18 on nests and young on 18/11, none present on 28/11; 125 abandoned nests and large flock on shingle up Howard but not renesting on 19/12 (PJ). Kahutara R. mouth, c.900 on 14/9 (BE). Kowhai R. mouth, c.1300 on 25/7 (BE). L. Ellesmere, 128 on 6/2 roosting in shallows at lake edge (PMS). Lower Waitaki R., c.1500 on 1/1 (LJD). Eglinton Valley, Walker Creek, 122 adults and 59 large young on 6/12 (KM).

BLACK-FRONTED TERN *Sterna albostriata*

BoP, Rangitaiki R. mouth, 1 on 9/5/81 (WMH); 12 on 5/7 (PCML); 22 on 5/7 2 km inland from mouth (PCML); Tarawera R. mouth, 10 on 7/6/80 (WMH); 13 on 1/5 (RMW); 30-40 on 7/6 (PCML). Waitangi, HB, 75 on 18/6 (KVT). Waikanae Beach, 12 on 20/4 and 7/6 (BMS, DMS). Farewell Spit, 123 on 25/6 (JHS, BHS). Upper Wairau R., 80+ on 29/11. Kaituna, NW Blenheim, 23 on 2/12 over pasture (DJB). Wairau Spit, 100+ on 10/5 (GAT). Buller/Howard R., 18 on 18/11, 3 birds on nests; none present 28/11, 4 empty nests with shell present on 19/12; shingle plant operating within a few yards (PJ). Motueka Sandspit, 21 on 27/3 (BE). Seal I, 14 juv on 25/1, 42 on 10/5 (BE). Kowhai R. mouth, 40 on 25/7 (BE). Arahura R. mouth, 3 on 19/1/81 (NJW). Ahuriri R., 30/12, 3 pairs with nests and eggs plus 10 unoccupied birds roosting nearby (LJD). Dart R., 9 on 16/11 (MLB). Rees R., 2 on 16/11 (MLB).

WHITE-WINGED BLACK TERN *Chlidonias leucopterus*

FoT, Wharekawa, 1, 15/10-17/11; 2 from 5/12 to 1/2 and 1 from 18/2-13/6, when it was seen at Access Bay in breeding plumage (AH, BB, TC, AJG, JRH, RBS). Westshore, 1 on 6/5 in advanced nuptial plumage (NBM). Spider Lagoon, South Canterbury, 2 on 21/2 in non-breeding plumage (PMS). Opihi R. mouth, 2 on 25/4 in non-breeding plumage roosting among Black-fronted Terns (PMS).

GULL-BILLED TERN *Gelochelidon nilotica*

Jordan's Farm, Kaipara Harbour, 6/6, 2, and a probable third more distant, were feeding into wind across seaward field. One rested on grass briefly. All had reduced black caps (BB, DGB, *et al.*).

CASPIAN TERN *Hydroprogne caspia*

Kaipara H, 13/3, Ngapuke Creek, c.40 and Oyster Point, 45 (BB). Wiroa I. Auckland Airport, 20 on 16/5 (BSG). Karaka, 71 on 16/8, 70 on 28/3, 68 on 7/6 (BB, KJF). Manukau H census, summer 86, winter 130 (BB). FoT census, summer 44; winter 84 (BB). Whangapoua, 44 birds on 1/11 — 3 two-egg nests, 17 one-egg nests, 15-20 scrapes; c.9 broken eggs, probably due to recent flooding (GMHP). Port Waikato, colony of 222 on 22/11 (AH). Bowentown, c.50 on 26/1 on shellbanks (PCML). Sulphur Point, Tauranga, 83 on 24/4 roosting (BC). Matahui Point, Tauranga H, 50 on 30/5 (BC). L. Rotorua, 35 on 25/2 (GAT). Maketu, 7 on 10/3, 6 on 16/5 (GAT). Whakatane R. mouth, 5 on 31/5 (GAT). Matata Lagoon, 2 on 11/4; 1 dived repeatedly to pick up a stick, then carried it up to c.50ft, dropped it again, and then dived to retrieve it (JHS, BHS). Ohope Spit. 11 on 31/5 (GAT). Ohiwa H, 30 on 2/11 nesting on island (WMH). Muriwai Lagoon, 11 on 26/4 (BRK). Urenui-Cape Egmont, small numbers along coast, Jul-Jun (DGM). Westshore, 15 on 14/5 (GAT). Tukituki R. est., 19 on 16/5, all in winter plumage (W & MT); 34 on 18/7 (JW). Manawatu R. est., 32 on 9/4 (JLM, MM). Moutere Sandspit, 60 on 23/2/81 (JMH). Hokitika R. mouth, 3 on 14/11/80 (NJW); 4 on 14/11 (CSL). Okarito, 1 on 14/11 (CSL). L. Ellesmere, 12 nesting pairs summer 1981-82 (CFJO). L. Waitaki, 3 on 30/4 (CFJO). Ahuriri R., 1 on 30/12 (LJD).

CRESTED TERN *Sterna bergii*

Scorching Bay, Seatoun, 1 on 19/12 loosely associating with a flock of breeding White-fronted Terns (BMS, DMS).

FAIRY TERN *S. nereis*

Te Arai Stream, Mangawhai, pair on 19/12 with 2 eggs; still present 24/1 but no nest (CM). South Kaipara Heads, 2 on 28/11 (MJT). Bowentown, 1 on 3/4 on shellbanks (PCML). Sulphur Point, Tauranga, 1 on 6/11 (KICF).

LITTLE TERN *S. albifrons*

Karaka, 8 on 29/10 (BSG); 3 on 23/11 (AH); 1 on 24/5 in breeding plumage (BSG). Manukau H census, summer 8 (BB). FoT, census, summer 3 (BB); 8 on 3/2, some present all summer (RBS). Access Bay, 10 on 3/12 (BB, AJG). 12 on 4/1 (TC); 5 on 27/4, of which 4 were immature (BSG); 10 on 18/2 (CM). Ohope Spit, 2 on 26/12/80 (WMH). Muriwai Lagoon, Gisborne, 1, Dec and Mar (BRK). Motueka Sandspit, 1 on 25/2 (BE, JMH).

WHITE-FRONTED TERN *S. striata*

Karaka, 70 adult and 6 juv on 24/1 (BB). Manukau H census, summer 133, winter 142 (BB). FoT census, summer 192, winter 338 (BB). Access Bay, 300+ on 3/12 (BB, AJG); up to 200 breeding pairs on 4/1 and birds still laying, though a few small and a few very large chicks pointed to renesting after flooding (TC); on 1/2 c.100 chicks more than half grown and 2 flying (TC). Port Waikato, colony of 350 birds and 152 nests on 21/12; 149 on 10/1 with 149 nests (AH). Opoutere Beach, north end, c.100 on 18/1; south end, c.100 on 19/1 (PCML). Tarawera R. mouth, 300+ on 31/5 (GAT).

Bowentown, 30 on 3/4 on shellbanks (PCML). Maketu, c.340 on 10/3; 6 on 15/6 (GAT). Port Ohope Spit, 200 plus 30 juv on 23/2; returned after absence of 8 years to breed and nearby were Red-billed and Black-billed Gulls nesting (RMW). Muriwai Lagoon, Gisborne, 47 on 1/2 (BRK). Wairoa R. bar, 300 pairs nesting Dec with Black-billed Gulls (GF). Waitangi, HB, 250 on 29/10; nesting colony washed out 31/10 (KVT). Manawatu R. est., 78 on 28/2 (LJD); 120 on 10/4 (JLM, MM). Farewell Spit, 26 on 23/6 (JHS, BHS). Wairau bar shoreline, 50 on 12/9 (DJB). Whararíki, 200 on 12/4 (BE). Punakaiki, 116 on 12/1, including 3 juv (NJW). Hokitika R. mouth, 160+ on 24/8/80 (NJW). Ashley est., 128 on 18/4 (PMS). Caroline Bay, Timaru, 295 on 20/3 (PMS). South East I, estimate 70 breeding pairs; egg laying began 24/11 (MDD). Mangere I, laying started mid-Nov (DC).

NEW ZEALAND PIGEON *Hemiphaga novaeseelandiae*

Waiheke I, flock of 20 on 20/1 (MJT). L. Okareka, abundant in tree lucerne Jul/Aug (JI). L. Waikaremoana, c.40 on 26/2 in a flock, swooping, diving and chasing above camping ground (PM per BHS). Rangitoto Ranges, 10 on 20/3 on summit track (BHS). Motu R., abundant in the mid and lower reaches 29-31/1 (GAT). Bushy Park, Kai-iwi, 8 on 4/4 in puriri tree (DGM). Christchurch, 10 on 29/4 roosting in *Betula* in Botanic Gardens (CFJO). Whitcombe R., Westland, 1 on 9/4 (GAT). Te Anau, absent over winter until 2/9; 22 stripping laburnums on 30/1 (JVM). Halfmoon Bay and environs, 13-22/1, most common species (WJC).

WHITE COCKATOO *Cacatua galerita*

Manurewa, 1 early Feb (GF). Pukekohe East, 1 on 30/4 being harassed by magpies (AH). Waiuku Forest, on 2/5, 2 birds returning to roost in forest at late dusk (AH). Port Waikato, 18 on 11/7 (AH). Pohangina Valley, 1 km north-west of Totara Reserve, 11 on 13/9 (LJD). L. Ryan, Mar-Jun, 1 seen periodically (NJW).

KAKA *Nestor meridionalis*

Little Barrier, 3 on 1/4 together and c.5 more flying near junction of Summit and Valley Tracks (BB). Man o' War Bay, Waiheke I, flight of 12 over native forest on 20/1 (MJT). Huia, 1 on 31/1 (JGH). Remuera, 1 on 28/4, noisy (RBS). Duder's Beach, Maraetai, 1 on 24/4 (JGH). Mt William Walkway, 1 on 24/3/79 (JGH). North Mamaku SF (eastern boundary), 1 on 11/3 (GAT). Rangitoto Range, 3+ on 20/3 on summit track (BHS). Pureora, 1 on 16/5 (SG); 12/10 especially noisy at this time of year (JI). Aniwaniwa, Urewera NP, usually 6+ 18/12 to 14/1 (JGH). Ngutuoha, Urewera NP, several heard daily 12/5 and 18/5 late morning and early evening (JGH). Marsden, 1 on 18/7 flying over cut bush (CSL). West Matukituki, 9/4, a pair feeding flying juvenile in silver beech forest above Aspiring Hut (PC). Chalky Inlet, North Port, 3 on 27/3 fluting at dusk (KM). Frew Saddle and Mathias Pass, present 9-11 April (GAT). Cobb Ridge, 3 on 6/3 swooped down on car and started devouring tyres (BE). Whitburn Valley, W. Dart, on 10/4 flock of 9 arrived in evening to roost in bluffs (PC). Cascade Basin, head of Dart (alt. 5300ft), on 12/4, flock of 6 feeding on snowberries along bluffs (PC). North Mavora L., 6 on 17/3 (WJC).

EASTERN ROSELLA *Platycercus eximius*

Opuawhanga, 10/9, pair investigating nest box put up for starlings; 14/9, watched chiselling out hole in nest box — while one bird chiselled the other kept watch; even though hole was enlarged, birds failed to nest (JFS). Tahekeroa, 8 on 10/4 (DGM). Oyster Point, Kaipara H, 7 on 6/6 (BB). Waiheke I (Goodwins Bush), 1 on 21/2 (BB). Ness Valley, Clevedon, 6-8 on 22/10 feeding on ground (BB, DFB). FoT, Waharau Reserve, present 18/4 (BB). Ramarama-Drury, 2 on 13/8 (AH). Kaueranga Valley, 4 or 5 each day 16-20/11 (MB). Waingaro Bush, Ngaruawahia, 6 on 29/3 (MS). Oparau Stream, Kawhia, 1 on 11/7 (JHS).

RED-CROWNED PARAKEET *Cyanoramphus novaezeelandiae*

Opuawhanga, 1 on 30/10 (JFS). Little Barrier, 1 on 29/6 feedihg on *Astelia* fruit (GAT). Whangapoua Beach, Great Barrier, 5 on 11/4 in puriri (LN, CH, KB). South East I, female incubating Dec (DC).

YELLOW-CROWNED PARAKEET *C. auriceps*

Little Barrier, 1 on 28/6 feeding on *Pittosporum umbellatum* (GAT). L. Rotoaira, foot of Pihanga, 2 on 15/1. Karioi SF, 14/1, small flock in bush remnant surrounded by exotic plantation (DJB); Access Road No. 15, off Desert Road, Turangi, 1 on 17/1 (BE). Kumara reservoir, 3 on 30/8 (CSL). Hukarere, 2 on 14/3 (CSL).

CHATHAM ISLAND YELLOW-CROWNED PARAKEET *C. auriceps forbesi*

Mangere I, estimate 40 in 4-ha bush (DC); 29/10 nest of 4 eggs hatched (AKM). 20/1, single chick in nest (CRV).

SHINING CUCKOO *Chrysococcyx lucidus*

Opuawhanga, 1 on 18/11 sitting on power line undisturbed by activity underneath; 5/2, young bird fed by pair of Grey Warblers, female Chaffinch and a Fantail (JFS). Matakana I, 10+ on 21/11 flying about in group, calling continuously (FN). Pukekohe East, 18/11, male feeding female perched on small gumtree with damsel fly, caterpillar and a beetle plus other insects, for more than 15 minutes until they were joined by two other birds, when all flew into tall tree. Quite a number of this species in the area at this time and calls heard at night, 10-11 p.m. (TH). Papamoa Hills, last heard on 17/2 calling at 11.30 p.m. and flying north (GAT). Tupara, Taranaki, prolonged whistling on 15/10 (RBS). New Plymouth, first heard 7/10 (JCM, G. Dumbell); 3 together in suburban garden on 21/11 (DGM); 1 calling at 11.30 p.m. on 21/12 (RWW); last heard 31/1 (DGM). Te Popo, Stratford, first heard 25/9 (JM). Pokeka Stream, Waitotara SF, 6 heard on 21/11 during 2-hour walk (LJD). Pinehaven, Hutt Valley, 1 fully grown young being fed by 2 Grey Warblers 30/1 and 1/2; constant calling all day (BDH). Punakaiki, 7/10 first heard calling in *Pinus radiata* (NJW). Charlestown, first seen and heard on 1/10 and last 7/4 (DJO). L. Rotoroa, Kaikoura, 2 seen and 4 heard on 13/11 (BE). Lewis Pass, 2 on 5/1 at Summit (CFJO). Sealers No. 1 Creek, Fiordland, 1 on 4/11 singing (KM). Mangere I, 1 heard and seen 22-26/11 but not heard after 26/11 (DVM). South East I, 1 heard Nov-Jan but probably pair present as chick found in Chatham Island Warbler's nest 18/1 (DC).

LONG-TAILED CUCKOO *Eudynamys taitensis*

Langholm, 1 on 4/3 calling at 2230 (MJT). Hamilton City (near Lake), 1 immature bird on 28/3 seen high in eucalypt tree, single call *rrrp* repeated for over an hour at sunset (MS); watched hawking insects from top of pine tree at dusk (RWL). Motu R., 29-31/1 numerous (GAT). L. Te Anau, 1 on 23/1 being noisily pursued by small birds (probably Brown Creeper) along shoreline (FN). Boddytown, 1 on 23/1 called for over an hour moving around four widely separated trees (CSL). Stewart I, 1 on 29/1 flying and calling (FN).

MOREPORK *Ninox novaeseelandiae*

Opuawhanga, 8/9, when taped *cree* sound played, female puffed up and spread wings: *wok wok* call started, 7/10 at 1.50 p.m., 10/10 at 2.47 p.m., 14/10 at 11.30 a.m. and 2.35 p.m. (JFS). Browns Bay, Auckland, 1 heard on 30/8 in suburban garden (DFB). Hatepe, L. Taupo, 1 seen in daylight in May (JD). Northern Mamakus, Kaharoa Plateau, Mt Otanewainuku and Papamoa Hills, widespread and abundant in all forested areas, Nov-Mar 1981-82 (GAT).

LITTLE OWL *Athene noctua*

Blenheim, 1 on 3/12 chased by pair of Blackbirds through vineyard (DJB). Kaniere, West Coast, now present (F. Overmars, pers. comm. CFJO). Harihari, 3 in January (CFJO). Makikihi, South Canterbury, 2 on 15/5 (CFJO). Boddytown, 1 on 19/7 flying in mid-afternoon; 1 on 20/1 heard calling at 9.30 a.m. (CSL).

SPINE-TAILED SWIFT *Chaetura caudacuta caudacuta*

Leask Bay, Stewart Island, 2 on 16/4 (M. Mendill per RRS).

NEW ZEALAND KINGFISHER *Halcyon sancta vagans*

Opuawhanga, 5/12 young birds in nest in old ponga; 1 on 12/12 caught mouse but did not eat it; 6 on 15/4 on short length of power line (JFS). Maketu est., 37 on 15/6 (GAT). Mamaku Range, few still in heavy forest during May-Jun — widespread and abundant during the summer months (GAT). Kawhia H, north end, 40+ on 11/7 (JHS). Motu/Haparapara R., few present in heavy bush in Dec-Jan (GAT). Punakaiki, 20/2 first post-breeding bird seen on coast (NJW).

KOOKABURRA *Dacelo gigas*

Matakana, 2 on 1-16/8 (SPC). Warkworth, 1 on 12/4 "laughing" across river in centre of town (BB); 1 on 24/6/81 (SPC). Tahekeroa, April, reported occasionally seen and heard (DGM). Puhoi Valley, heard occasionally Jan-Mar (MJT). Wenderholm, 1 on 24/1 being buzzed by Kingfisher (MJT). Coalmine Bay, Whangaparaoa, 1 on 5/9 (SPC).

RIFLEMAN *Acanthisitta chloris*

Little Barrier, widespread Jun (GAT). Pureora, 3 on 16/5 — one flew feet first at my face in unprovoked attack (SG). L. Waikareiti Track, Waikaremoana, very common on 7/7, birds "attacked and whistled" and one alighted on my arm and back in an effort to oust me from area (SG). Mamaku/Kaharoa Forests, 1981/82, either very local or absent (GAT). Blythe Track, Ruapehu, 25 on 15/1 (BE). L. Sylvester, Cobb, 10 on 6/3 (BE). L. Kaniere, 3 in May in podo-

carps (CFJO). Fernleigh, 4 on 25/7 (BE). Canyon Creek, Upper Mathias R., 1 female seen in *Hoheria lyalli* on a terrace in a deep gorge, well away from forest or other scrub (GAT).

ROCK WREN *Xenicus gilviventris*

Arthurs Pass NP, Goat Pass, 2 on 20/3 (GAT); Mt Oates, 2 on 20/3 at 5800ft. a.s.l. Female was seen to catch an alpine grasshopper (2.5 cm long) which was held in bill, battered on ground and continuously pecked occasionally. This occupied the bird for 5 minutes but it was not seen to eat all or part (GAT). Frew Saddle, 2 seen on a talus slope above Saddle on 11/4. 1 bird was continuously flicking out one wing only. Calls could be heard distinctly but faintly at 25 m (GAT). Canyon Creek, Upper Mathias R., 3 in a group, 3200ft a.s.l. on 12/4 (GAT).

SKYLARK *Alauda arvensis*

FoT, 18/4, some tentative singing after brief summer recess (RBS). Te Matai-Mangorewa area, north of Rotorua, present on grazed ridges among pines 2-6 m tall 1981/82 (GAT). Mangere I, low numbers Sep-Nov (DC).

AUSTRALIAN TREE MARTIN *Hylochelidon nigricans*

Berwick, Outram, Otago, 1 on 3/12 with Welcome Swallows and again on 14/11; on 21/2, 2 were seen (ALN).

WELCOME SWALLOW *Hirundo tahitica neoxena*

Little Barrier, 30/3 to 12/4, 2 hawking above summit; 34 clung to Ranger's clothesline during cyclone Bernie and later took to the ground below, as conditions worsened (BB). Horuhoru, on 26/11, frequenting two caves below the gannets and probably nesting (RBS). Pirongia south SF, 79 on 5/3 on telephone line (RG). Mt Maunganui, on 23/10, 12 birds getting mud from cattle trough and flying to a cliff near top of mountain (KICF). Whakatane/Taneatua R. junction, albino on 4/5 (JRL). Sulphur Bay, L. Rotorua, flock of 250 present May/Jun (GAT). East Coast/Awatoto, 400 on 18/7 (NBM). Bell Block SP, 40 on 1/8; Waitotara R. mouth, 30 on 14/2 (DGM, REL). Parapara, 34 on 9/4 (BE). Nelson North West area, during Nov seen at every hut site on Whangapeka, Heaphy, and Abel Tasman Park Tracks (MPK). Wairau R., west of SH1, 150+ on 28/2, incl. c.60 resting on stones, feeding over water during windy rainy late afternoon (DJB). L. Ryan, Mar-Jun, usually 3-5 present but 9 on 14/4 (NJW). Cobden Lagoon, 5 on 11/7 (CSL). Hokitika SP, 100 on 19/7/80 (NJW). Kyeburn R., 3 on 15/10, first record for Central Otago — no evidence of nesting (PC). Te Anau, regularly seen in winter until 4/9, max. 30+ on 21/7; 6 reappeared on 9/5 (KM, JVM).

NEW ZEALAND PIPIT *Anthus novaeseelandiae*

Kaitoke Beach. Great Barrier, 2 on 11/4 (KB). Waiheke I, 13 counted 20-21/1 (MJT); Awaawaroa, 6 on 20/2 on the road plus 2 further on (BB). Bethell's Beach, 2 on 25/7 (MJT). East Cape Road, 4 on 29-30/1 (MJT). Otamarakau, 2 on 7/6 (PCML). Northern Mamakus, widespread but not common; favours logging roads and clearings (GAT). L. Rotomahana, 14 on 14/6 feeding at landing (GAT). Hastings, 1 on 8/5 eating grass grubs tossed out on to lawn from vegetable plot (KVT). Stoney R. mouth, Okato, 1 on 10/10

(DGM). Foxton Beach, 2 on 11/9 (JLM, MM). Wairua/North Bank, 2 on 9/1 (PJ). Cobb, 10 on 6/3 (BE). Kaikoura Pen., 2 on 11/5 (BE). Whahariki, 6 on 12/4 (BE). Punakaiki R., 17/1, nest with 4 nearly fully feathered young; adult fed them with green grass cicada (NJW). Key Dome, Western Dart, on 11/4 at alt. 5700ft, good numbers along ridge (PC). Tiwai Pen., Southland, 7/3, common (WJC). Mangere I, 21/11, nest with 3 adults tending 2 chicks (DVM).

DUNNOCK *Prunella modularis*

Mt Maunganui, Dargaville, singing on 1/8 (RBS). Little Barrier, present on homestead flats and 1 on beach near Pohutukawa Flats 29/6 (GAT). Auckland, now seldom heard or seen around, except on cool west coast (RBS). Mangatangi Dam, Hunua, calling on 4/4 (RBS). Waiotapu Forest, 21/6, heard in pruned *P. radiata* (RWJ). Waikoau, 3 on 9/5 (KVT). Taranaki, widespread (RBS). Tawa, 1 on 30/8 (BMS, DMS). The Ned, Marlborough, 2/11, nest in bracken with 4 eggs (DJB). Mathais R. Canterbury, 12/4, common in riverflat scrub and podocarp/hardwood remnants (GAT). Mangere I, estimate 30 pairs; other than Chatham Island Warbler, most common forest passerine (MDD).

FERNBIRD *Bowdleria punctata*

Bethell's Road Swamp, an important stronghold (RBS). Kopuku, 1 heard on 11/10 (BB, AH). Whangamarino Swamp (causeway bridge), 2/9, high numbers (IS). Matakana I, few birds around lagoon (BC). Northern Mamaku forests, widespread but local, in scrub or old skid clearings in logged area (GAT). Whakarewarewa SF, widespread but local in swamps and scrub amongst young pine plantings (GAT). Kaingaroa SF, 2 on 29/10 (WMH). Te Wera SF, heard on 20/8 (DG). Ngamotu, Wairoa, 2 on 10/12 in blackberry and bracken fern (GF). Taihape, 1 on 28/1 on marsh bordered with pines (KVT). Farewell Spit, 1 on 12/11 in rush swamp near Lagoon Creek (BDB *et al.*). Cape Farewell, 2 on 12/4 (BE). Puponga Inlet, Golden Bay, calling 11/11 (CM). Rainbow Gorge, 1 on 20/2 (PJ). Port Elizabeth, 1 on 16/1 (CSL). Grove Swamp, Hokitika, moderate number 12/5 (CFJO). Rotokino Swamp, South Westland, 74 on 19/1 (CFJO). Te Anau, Lookout Mire, 17 on 13/2 and at Dome Mire, 8 on 14/2 (KM). Waituna Wetlands Reserve, on 7/3, 2 seen and 2 heard western end (WJC). Upper Freshwater Flats, Stewart I. 1 on 25/8 (GAT).

BROWN CREEPER *Finschia novaeseelandiae*

Torrent Bay, 4 on 13/3 (BE). Bay of Many Coves, Queen Charlotte Sound, widespread in dense kanuka-manuka canopy up to 300 m a.s.l. Jan (SCS). Kawhaka SF, first song heard 31/7/81: 1 on 31/8 in song (NJW). L. Rotoroa, 11 on 13/11, 10 on 17/5 (BE). Hukarere, 7 on 14/3 (CSL). Coal Creek Falls, Runanga, 3 on 27/5 (CSL). King Domain, Greymouth, 4 on 11/7 (CSL). Fernleigh, 10 on 7/11 (BE). Balloon Hut/Mt Arthur Tableland, small flock on 26/12 (PJ). Branch Creek/Taylor Pass, 30 on 18/4 (PJ). Greyneys Shelter, Arthurs Pass NP, flock in mountain beech forest on 20/3 (GAT). Milford Sound jetty, 5 on 13/3 (PJ).

WHITEHEAD *Mohoua albicilla*

Mt Raungatautari (near Cambridge), 5 on 9/1/82 (JHS, BHS). Ngapaenga, near Te Kuiti, 2 on 10/12 (RG). Tararua Ranges, track over Judd Ridge up to Field Hut, groups of 6 and 4 on 25/1 all calling profusely (LJD). Pureora, singing strongly 19/1 (BB). Rangitoto Range, 8 on 20/3, incl. 3 juv (BHS). Otanewainuku, 2 flocks of c.10 on 24/4 (PCML). Rotorua district, widespread and plentiful in all forest, scrub and exotics habitats (GAT). Motu and Haparapara R., common in forest Dec-Jan 1981-82 (GAT). Waihaha Forest Hut area, Tihoi SF, 3 on 18/10 (LJD). Kaimanawa SF, 6 on 15/1 off Desert Road (LJD). Ruahine Ranges, Iron Gate Hut area, Oroua River catchment, 9 on 4/4 in red beech (LJD).

YELLOWHEAD *M. ochrocephala*

Catlins SF, 21/1, 10-12 seen/heard along Catlins R. in silver beech forest (PC).

FANTAIL *Rhipidura fuliginosa*

Ngapaenga, Te Kuiti, 1 on 10/12 all black (RG). Mt Pirongia, 1 on 6/3, all black, with 3 normal birds (PM per BHS). Huiroa, 1 black in Sep (JM). Martin's Bay, 3-4/8, pied and black forms common (WJC). Mangere I, 0 Sep-Jan (MDD). South East I, low numbers (MDD).

PIED TIT *Petroica macrocephala toitoi*

Puketi, 27/3, many heard and seen, mainly giving *psst* call; most territories along track seemed taken up (JFS). Russell SF, 5 males on 9/2 (Pukemoremore Track) (JFS). Opuawhanga, 4 males seen, 2 others heard on 25/9 (JFS). Mt Raungatautari (near Cambridge), 9/1, numerous on upper two-thirds of track to summit (JHS, BHS). Matakana I, 1 male on 7/12 on territory in pine forest (FH). Motu Basin, numerous 29-31/1 (GAT). Blowhard Bush, HB, 2 on 28/1 (KVT).

YELLOW-BREASTED TIT *P. m. macrocephala*

Mt Fyffe, 2 pairs and 3 males on 18/9 (BE). Punakaiki, 20/7 singing (NJW). Kumara reservoir, 3 on 30/8, juvenile being fed by male (CSL). Totara SF, first song heard 24/7/80 (NJW). Te Anau, singles seen in manuka scrub 6/1-6/3 (KM, JVM). Dusky Sound, numerous in March (PJ).

CHATHAM ISLAND TIT *P. m. chathamensis*

Mangere I, 1 male on 27/1 (WFC). South East I, abundant Sep-Jan (WFC).

NORTH ISLAND ROBIN *Miro australis longipes*

Little Barrier, 1 on 6/4 singing near summit (BB). Northern Mamakus, Mangorewa, Te Matai, Otanewainuku SFs, widespread and abundant, scarce in Kaharoa SF, 1981-82 (GAT). Atiamuri Lookout, 1 on 20/3 in scrub and pine (SG). Waihaha SF, 1 on 10/4 (RD). Tihoi SF, 3 heard and 1 seen on 18/10 (LJD). Inland Wanganui, 21/11, 20 heard on 2-hour walk beside Pokeka Stream in Waitotara SF; good population (LJD).

SOUTH ISLAND ROBIN *M. a. australis*

L. Rotoroa, Kaikoura, 1 on 12/10; 1 on 8/2 (BE). Lake Rotoiti, Nelson Lakes, 2 on 25/11 (CM). Lake Gunn, 1 on 13/3 hopped into car between passenger's feet (PJ). Lewis Pass, 2 on 19/4 at 4000ft (CFJO).

STEWART ISLAND ROBIN *P. a. rakiura*

Stewart I, more widespread in manuka on freshwater flats in Aug 1981 than in 1977-1979 (CFJO).

SONG THRUSH *Turdus philomelos*

Opuawhanga, from May onwards until Oct, bird imitating first part of Shining Cuckoo call; 5/6 imitating Morepork and Rosella (JFS). Remuera, 12/4, snippets of song, short but explosive (RBS). Auckland, first song 8/5 (MJT). Hamilton, first song 23/3 mid-morning (MS). Cambridge, first song 11/5 in suburban garden (BHS). Tokoroa, first song 15/5 in garden (SG). Hastings, song began at 3.15 a.m. on 22/5 (KVT). Haparapara Stream, East Coast, 28/12, present in scrub (GAT).

BLACKBIRD *T. merula*

Auckland, first song 23/6 (MJT). Orakei, male seen several times offering leaves to another male, Jul (MJT). Clevedon, male on 12/10 attacking reflection in early morning accompanied by fledgling calling plaintively but ignored (AJG). Kaimai-Mamaku SF, in dense virgin rimu-tawa forest in Jun (GAT). Punakaiki, 21/8, singing (NJW).

SILVEREYE *Zosterops lateralis*

Manurewa (Hill Road), 12 bathing together in bird bath on two consecutive days in Jun (JD).

STITCHBIRD *Notiomystis cincta*

Little Barrier, 154 seen or heard between 2 and 4/9 (CM); 3/3, one tape recorded singing a complex whisper song (BB).

BELLBIRD *Anthornis melanura*

Maraetai, 1 reported singing in a garden 1981 (BB). Kawakawa Bay, 23/10, one flew from an *Erythrina* across road in front of car (BB). FoT, Waharau Reserve, 18/4, 3 together and 2 separately (BB). Matawai, 1 on 19/9 in cutover bush (BJ, SJ). Blowhard Bush, HB, 1 on 28/1 perched on pine (KVT). Waikoau, 1 on 7/5 (KVT). Bushy Park, Kai-iwi, several near homestead on 4/4 (DGM). Christchurch City, present within town belt winter 1982 (CFJO).

TUI *Prosthemadera novaeseelandiae*

Clevedon, 2 fledglings on 15/3 still being fed; very faint thin calls (AJG). Piha, 1 perching on power line, Nov (MJT). Manurewa (Hill Road), 1 on 15/5 had 29 dips in garden bird bath taking 4 minutes (JD). 1 seen 6-20/12 persistently chasing sparrows and starlings through garden (JD). Kawakawa Bay, 60 on 11/10 in grove of kowhais (JD). Punakaiki, 1 on 11/10 feeding on *Myrsine salicina* berries (NJW). Pelorus River, several in matai on 1/5 in full song (DJB).

CHATHAM ISLAND TUI *P. n. chathamensis*
Mangere I, several visiting bush for flax nectar, Oct-early Nov (DVM). South East I, conspicuous Nov-Dec; seen collecting insects for chicks (DC).

CIRL BUNTING *Emberiza cirlus*
Tuahine Point, Gisborne, 6 on 1/8; 2 males singing on territories 7/1 (BRK). Nelson Haven, 6 in May and Jun, in *Salicornia* (JMH). Kahutara, 1 male trilling on 14/9; pair at same spot on 12/10 (BE). Kaikoura, 6 sightings during May (BE).

CHAFFINCH *Fringilla coelebs*
East Cape, Haparapara and Motu R., present during Dec/Jan (GAT). L. Rotomahana (Ashpit Road), 500+ in June in large flocks among lupins at edge of road (GAT).

GREENFINCH *Carduelis chloris*
Remuera, first spring "jeering" on 28/8 (RBS).

GOLDFINCH *C. carduelis*
Northern Mamaku, Te Matai Forests, small flocks present in June in clearings and cutover forests (GAT). Blenheim, 2 on 30/11 perched and noisy on power line 1 m away from unconcerned Kingfisher (DJB).

REDPOLL *C. flammea*
Matakana I, 1 pair on 21/11 at edge of lake (FN). Blowhard Bush, HB, 6 on 28/1 (KVT). Te Anau, large flocks taking larch seeds on 30/8 (KM, JVM). Rangiriri, Chatham I, 2 on 28/11 (KJT).

STARLING *Sturnus vulgaris*
Remuera, throughout winter, often including in repertoire sound of distant Pied Stilts (RBS). Hatepe, L. Taupo, flock 3000+ on way to roost on Motutaiko I in May (JD).

INDIAN MYNA *Acridotheres tristis*
Opuawhanga, 30/4, heard imitating dog and duck (JFS). Auckland, red or orange-headed birds are now reported in the flax-flowering season (RBS). Little Barrier, 3 in Jun around bunkhouse (GAT). Wanganui, 5 along river and 2 in city centre on 31/12, but none on SH3 further south (JLM, MM).

NORTH ISLAND KOKAKO *Callaeas cinerea wilsoni*
Kohukohunui Track, Hunua Ranges, 24/10, while I was playing taped calls with DFB and SPC, a stoat ran briskly almost to our feet before being frightened by a sudden movement (AJG). South-east of Hauturu (Kawhia Harbour), 8 on 29 and 30/6 between The Dome and Rock Peak (PA). Pureora, 3 on 7/2 seen and heard at midday in blazing heat; none seen or heard 16/5 (SG). Horohoro SF, 2 on 9/5 calling (JI). Oropi, near Te Puke, 3 on 10/11 (RMW). Mangorewa SF, 1 on 14/2 seen in rimu, tawa, beech forest near the southern boundary (GAT). Kaharoa SF, over 10 birds seen/heard Dec/Jan (GAT).

BLACK-BACKED MAGPIE *Gymnorhina tibicen tibicen*
Mangere SP, increasing population on surrounding farmland

(RBS). Pahiatua, 1 on 18/1 (BE). Gisborne, Kaiti Beach, 1 on 7/9 (BRK); Kaiti, 1 on 24/5 in suburb (BRK). Hararapara Stream, East Coast, present in lower reaches, 28/12 (GAT). Hapuku, 2 on 17/7 (BE). St Anne's Lagoon, 1 on 23/10 (BE).

WHITE-BACKED MAGPIE *G. t. hypoleuca*

L. Otamangakau (Access Road), 24 on 1/11 (DJB). Kokatahi/Kowhitirangi, 7 on 25/8/80 (NJW). Dunton Creek, Te Anau/Milford Sound, 1 on 4/8 (WJC).

ROOK *Corvus frugilegus*

Okiwi Airstrip, Great Barrier, 1 juvenile (no white on face) on 25/5 (CCO). Miranda, 18 on 28/8 inland (CM). FoT winter census, 119, an increase of 59 from last winter; a farmer reports having known this species on his Walton farm "some years ago" (BB). Waihau Beach, East Coast, 2 on 12/11 (BRK). Kaiti Hill, Gisborne, 29 on 3/8 over rookery in eucalypts (BRK). Takapau, 22 on 19/5 (KVT). Pahiatua, 3 on 18/1 (BE). Kaikoura, 8 on 24/7, 10 on 16/10; 1 carrying nesting material 5/11 (BE).

CORVUS sp.

Marahemo, 1 big and black, not obviously a Rook, foraging among sheep on 1/8 (RBS).

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SHORT NOTE

RED-BILLED GULL USES CURRENT TO FORAGE FOR FOOD

On 14 May 1982, I watched a Red-billed Gull *(Larus novaehollandiae)* at Miranda, Firth of Thames, feeding in an interesting way. A small stream runs out on to the mudflats, and as the tide was about 1½ hours out much of this stream was exposed. The gull was drifting down this stream, always facing in the direction it was being taken. It would submerge its head and drift for five or six metres, raise its head to look around, then dip it again. It kept up this procedure for about 150 metres. Then it took to the air, flew back upstream, landed on the mud, walked into the stream, and continued its seaward drift again.

Once it caught a small fish, at which the bird stopped until it had positioned the fish correctly for swallowing. Then it went back to its activity, which it was still doing when last seen 20 minutes later.

LEN BUCHANAN, *C/- Mangatarata School, R.D. 1, Waitakaruru*

SHORT NOTES

SEXUAL DIFFERENCES IN PUKEKO CALLS

Pukekos *(Porphyrio porphyrio melanotus)* do not have distinct physical characteristics that can allow the sex of a bird to be determined by eye. Earlier workers have described ways of sexing Pukekos by taking measurements of various physical features — culmen + shield length and body weight (Williams & Miers 1958) and shield width,

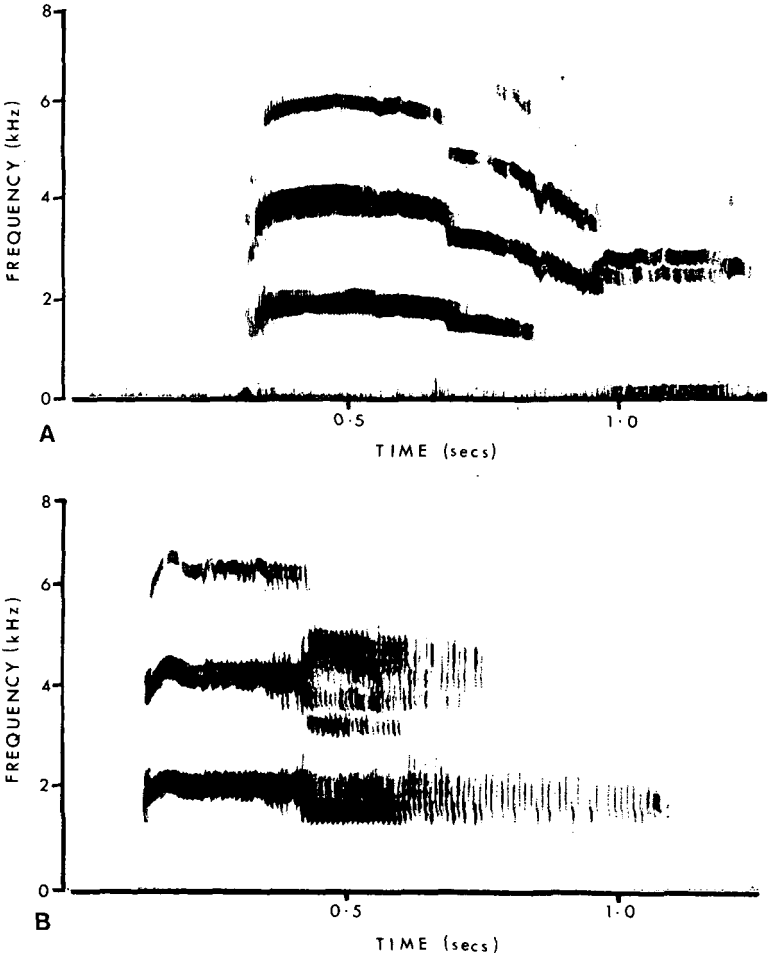

FIGURE 1 — Sonagrams of the crowing calls of (a) male and (b) female Pukeko

bill depth, and nares-to-tip length (Craig 1974, Craig *et al.* 1980). Male Pukekos are larger than females, but these methods require the capture of the birds for measuring.

I have recently finished a study of the vocal behaviour of the Pukeko (Clapperton 1982), using a population from which measurements of these features were taken and analysed to determine the sex of the birds. During this study it became evident that the loud crowing call of the Pukeko shows distinct sexual dimorphism.

The crowing call, given as a territorial advertisement call, is a loud drawn-out call heard frequently during the day and night. The call of the male is a clear sound, whereas that of the female has a harsh, guttural quality. This difference in quality is due to differences in the structure of the second part of the calls — in the male the second part is at a low fundamental frequency with little or no frequency modulation (Fig. 1a), whereas the female's call does not drop in frequency and the frequency is modulated widely (Fig. 1b).

This difference can, with practice, be easily distinguished by ear and can be used as a quick guide to the sex of birds in the field.

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B. KAY CLAPPERTON, *Department of Botany and Zoology, Massey University, Palmerston North*

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WINTER FLOCKING OF CHAFFINCHES IN NORTHERN NEW ZEALAND

When the nesting season is over, flocking and migration are part of the normal way of life of many species of finches and buntings. In Europe, Chaffinches *(Fringilla coelebs)* have attracted attention for more than two centuries because quite often large flocks seem to be composed almost entirely of birds of one sex. Hence their scientific name given by Linnaeus, which means literally, Bachelor Finch.

In Gilbert White's *Natural History of Selborne* there is a well-known passage in Letter XIII dated 22 January 1768 and written to Thomas Pennant: " For many years I have observed that towards Christmas vast flocks of chaffinches have appeared in the fields; many more, I used to think, than could be hatched in any one neighbourhood. But when I came to observe them more narrowly, I was amazed to find that they seemed to me to be almost all hens. I communicated my suspicions to some intelligent neighbours, who after taking pains about the matter, declared that they also thought them mostly females —

at least fifty to one. This extraordinary occurrence brought to my mind the remark of Linnaeus that " before winter all their hen chaffinches migrate through Holland into Italy." " Again, in Letter XV dated 30 March 1768, G.W. notes that " flocks of female chaffinches have not yet forsaken us." More than two years later in Letter VIII written to Hon. Daines Barrington on 20 Dec. 1770 he again mentions " those vast flocks of hen chaffinches that appear with us in the winter without hardly *(sic)* any cocks among them."

In New Zealand the Chaffinch is recognised as one of the most successful introduced European passerines. Its numbers certainly run into hundreds of thousands, possibly into millions. Although its distribution and breeding are reasonably well known, little attention seems to have been paid to behaviour outside the nesting season, i.e. in autumn and winter. However, Oliver (1955) terminated his account with the words " After the breeding season the Chaffinches gather together in large flocks sometimes comprising up to 600 birds."

In northern New Zealand flocks of Chaffinches first came to my notice one spring in the eastern Bay of Plenty. Near Cape Runaway on 23 August 1940 many were feeding in a weedy field of roots. Next day at Hicks Bay I found c.80, together with a few Greenfinches and Yellowhammers, feeding on the beach and among the tidewracks, sometimes advancing almost into the waves and retreating just in time. On 26 August while cocks were singing evidently on their chosen territories along the Oweka valley, up above c. 300 m a.s.l. in partly broken country among charred logs and stumps and luxuriant but trampled inkweed, there was a loose rambling flock numbering many scores. Inland there stretched range upon range of heavy rainforest. Perhaps the flocks were slowly heading for the high country after wintering in the warmer coastlands. When I later mentioned to Charles Fleming and Peter Bull that I had been finding flocks of Chaffinches, they expressed their surprise and could not recall any such occurrences near Auckland.

I do not know if winter flocking of Chaffinches as far north as Auckland occurs with annual regularity; but the following observations show that it is far from unknown.

Bethells 10/8/47: Two small flocks in the scrub back from the beach.
Mangere 18/6/51: Flock of c.20 in a vegetable field; yet on the day before a cock had been 'rattling' repeatedly as if claiming a territory.
Middlemore 24/7/54: Flock of c.15, although at least three cocks were already singing locally on territories.

An instructive note appeared in *Notornis* 10: 182-183, after H. R. McKenzie and M. J. Blundell had watched mixed flocks of finches attracted by the millions of small black seeds produced by a 'new' weed *Amaranthus retroflexus* on cropping land. For five successive winters 1958-1962, introduced birds came in thousands, especially

Goldfinches, Greenfinches and House Sparrows. On 26/7/61 there were also an estimated 450 Chaffinches and on 27/5/62 150.

From Beth Brown's notebooks comes further evidence. At Opoutere on 22/1/72, c.50 Chaffinches in a flock were feeding over a weedy fire-break in a forest of exotic pines. Also at Opoutere c.100 on 24/4/73 among young pines and on 16-19/4/76 many in flocks. Evidently flocks may be formed as soon as the nesting season ends. At Miranda on 20/6/80 a flock of c.30 feeding on saltings contained some males.

On 28/8/68 my wife and I paid a short visit to Tongariro National Park at a time when Chaffinches appeared to be taking up or returning to nesting territories in the high forests dominated by Mountain Beech *(N. cliffortioides)*. On the short turf of the golf course in front of The Chateau, we counted 13 brightly plumaged cocks, while others were already singing in the forests. We saw no hens. Next day as occasional bursts of song came from the forest around Rotopounamu, males but no females were seen flying singly bushwards from the vicinity of Rotoaira. 300 kilometres to the north at sea level most males have already occupied territories by the end of July, as is made clear by their frequent singing.

For climatic reasons New Zealand Chaffinches are likely to be more sedentary than their palearctic congeners, which are forced to leave their summer haunts at the onset of winter's frost and snow. Since many Chaffinches have nests in mountainous country well above the 1000-metre contour, there is certainly altitudinal migration. When winter comes, where do they go and how far? Do, for example, Chaffinches from the Tongariro National Park make for the coast? In the lowlands Chaffinches seem to favour arable land, rough country near the sea and saltings where *Salicornia australis* is a much-appreciated food of, for example, Goldfinches and Greenfinches. The common use of herbicides in cropping areas may be severely limiting the supply of weed seeds available for itinerant finch flocks. Is there any northward movement? Do some Chaffinches cross Cook Strait? Is there any traffic across Foveaux Strait?

The composition of Chaffinch flocks deserves study. Autumn assemblages ought to contain birds of both sexes; but after about midwinter the composition changes and there seems to be a marked segregation of the sexes.

R. B. SIBSON, *26 Entrican Avenue, Auckland 5*

REVIEWS

New Zealand's birds — a photographic guide, by Geoff Moon with text by Ronald Lockley. Heinmann. 1982. 179 pp. 126 species illustrated with over 350 colour plates..

This is the fourth book of bird prints that Geoff Moon has produced since his *Focus on New Zealand birds* (1957). To say that he is our most prolific bird photographer is an understatement.

Photography of the standard achieved by Geoff Moon is a time-consuming business and requires incredible energy, patience and, for his hide work, often meticulous planning. It can also be a very frustrating business as no one can with certainty predict a bird's behaviour. One cannot fail to be impressed by the variety of species covered in this volume (with one exception) by a single photographer. An incredible amount of time and effort have gone to achieve this.

In his previous book, *The birds around us* (1979), the birds were grouped by habitat. In this book the birds of mainland New Zealand and its coastal waters are grouped by species. The emphasis is on our native (endemic and indigenous) birds with only 10 pages at the back of the book to illustrate some 22 introduced species.

In most cases some three or four prints illustrate each species. Nest and fledgling shots feature prominently, but there are also plenty of adult feeding, behaviour, species association, flocking and colony views. There is a good mix of superb bird portraiture and illustrated bird behaviour. I wonder how many ornithologists have witnessed dabchicks mating? This and many other rather unique action shots are included.

The text by Ronald Lockley is informative, interesting and easily read. It deals largely with behaviour and he quotes frequently from his own and Geoff Moon's experience. This is in no way meant to be an authoritative reference, but the " dry facts " of habitat, distribution, food, breeding and length are all listed alphabetically in a species guide at the back of the book.

The faults are few but worthy of recording. With some birds, notably the Tui and Pied Fantail, the colour reproduction in the review copy surely does not do justice to the original slides. The prints are so dark that not only is feather pattern lost but so also is a lot of significant gross detail. This is most unfortunate as the same Tui shots are shown on an illustrated order-form that came with the book, on which the printing is perfect, showing beautiful feather pattern and all the detail expected. The illustrations of Whiteheads, Tomtits, and Fernbirds are all similarly affected to varying degrees.

The best photographic studies in this book are superb, but there are some that are not and these contrast rather obviously. The Brown Creeper and the Sharp-tailed Sandpiper shots are not of the standard one has come to expect from Geoff Moon and, having seen them, one might find the birds hard to recognise in the field.

Finally, it would have been more interesting to the ornithologist

if some indication as to the location of appropriate photographs was added to the subtitles.

These are very minor faults and detract very little from the final product.

This book is an excellent photographic guide to our mainland birds and will provide a lot of pleasure and interest for the mere bird lover and ornithologist alike.

T. C. Dennison

The contributions of Cook's Third Voyage to the ornithology of the Hawaiian Islands, by David G. Medway. 1981. Pacific Science 35 (2): 105-173. Copy in OSNZ library.

This paper is an important contribution to the history of Hawaiian ornithology. Cook's brief visits in 1778 and 1779 provided the first European contact with the birds of the Hawaiian Islands. First descriptions of 11 species or subspecies were based on specimens collected, and 6-7 types still survive in British and European museums.

This is the first detailed account dealing specifically with ornithological observations made during the visits, including relevant journal accounts, the bird specimens obtained, and the descriptions later based on those specimens. The history and fate of the various specimens are traced and discussed in scholarly detail; original descriptions are reproduced in full, together with English translation if necessary, and there are eight black-and-white plates and one colour plate of first paintings.

B. D. Heather

Finding birds around the world, by P. Alden and J. Gooders. 1981. Andre Deutsch. 683 pp. NZ$31.50.

This is clearly an American book written in American for the American tick collector. Just under half its pages are devoted to the American continent and about a third of the remaining localities discussed are large towns or capital cities: rarely centres from which an experienced birdwatcher would plan his excursions !

This sort of book is dangerous in that it is bound to increase the disturbance of bird habitats and, in easily accessible places, it can lead to their complete despoilment. Conversely, in countries such as our own, well away from centres of large populations of birdwatchers, making the whereabouts of good localities known is acceptable and may even do good in arousing public awareness. Roger Peterson, in the foreword to this book, illustrates where this has happened, even in the United States.

The book comprises simply an introduction, which is partly explanatory and partly advice to the novice traveller-cum-birdwatcher; 111 chapters, each discussing one area; and a bibliography and indexes. Chapter 111 deals with New Zealand and is the obvious place to start. Much as I endorse the complimentary sentiments expressed about our country, I cannot imagine anyone residing outside the Antarctic ice cap thinking that New Zealand provides " excellent birding," least of all those to whom this book would most appeal: one needs to work hard at that sport here. Apart from mentioning some of the more obvious

places, namely Miranda, Little Barrier and Kapiti Islands, and Tairoa Head, the rest of this 1½ page chapter is so superficial as to be almost useless, as is the scruffy sketch-map it includes. These comments could equally apply to most chapters on areas remote from North America.

The language, in common with much American writing, I find confusing. New Zealanders may well wonder exactly what species are meant by the Honeyeater, Red Knot, Red-breasted Plover, Pied Robin, New Zealand Grebe, or Boulder Wren and so will forgive the Poms' annoyance at their taking liberties with the terms *dotterel* and *shag*. A lovely piece of pseudo-scientific gobbledy-gook is the twice-mentioned " pelagic boat trip " which we are told is available here. One wonders what sort of boat trip the authors think we normally take ? (Flying boats, perhaps, or some sort of submarine crawling about the sea bed.)

As for the rest of the world, I can only provide a miscellany of comments on the areas I know personally. The British Isles are dismissed in two chapters, one on the Shetlands (fair enough) and one on London. The latter actually covers an area of some 2000 square miles, and we are expected to believe that it is feasible to work the north Norfolk coast from London, a minimum of 3 hours' drive away on overcrowded English roads ! Happily, all the localities mentioned are either well-controlled reserves or so crowded that an extra bus load or two would pass unnoticed, and the localities for rare breeding raptors, rare woodland and highland birds, and the vast wader habitats have all been omitted. Fortunately, owing to insufficient space for a more thorough treatment, similar remarks could be made about all the European countries dealt with, especially those of the far north, and the Near East. The visitor to Turkey, for example, is told only about Istanbul and has to find out for himself about the magnificent wetlands, the breeding grounds of vultures, flamingos, and ibises, and about rare mountain species. Other wetlands, alas, have not fared so well. The sections on the Neusiedler See and the Rhone and Guadalquivir deltas are accurate, and acceptable for the main areas where access is controlled by the authorities or by the terrain, but too much has been made of smaller localities nearby which are easily accessible and are much more sensitive to disturbance. Regarding the Coto Donana, the authors tell us a " monstrous new seaside resort " has sprung up along part of the coast and that now one may visit the reserve only under escort, in National Park Landrovers, and to selected habitats. Necessary, no doubt, but hardly consistent with the idea of what Guy Mountfort described in 1958 as " this wild paradise [where] half the bird species of Europe have been seen " and about which he explains " It is the express wish of the owners that it should be preserved as a sanctuary in the strict sense of the word and that it should not suffer the inevitable disturbance which occurs in so many nature reserves to which visitors are given access." Yet the authors are presumably quite happy to reconcile their profit motive with their part (by directing large numbers of the less informed type of visitor to these places) in aggravating this very sort of disturbance problem.

All the areas I have mentioned so far are well known, and so their bird lists are predictably accurate and complete. Yet 35-40%

of the bird names used are not the common names used by English speakers. However, if one cannot guess from the context, it is possible, by using both of the indexes, to discover, for example, that " Thick-billed Murre " is American for Brunnich's Guillemot; but what can the European with little English make of it when he is asked about " Gallinules," meaning Moorhens, and " Swamphens," meaning what are colloquially known as Gallinules ? More silly, perhaps, is the liberal sprinkling of totally unnecessary adjectives added to normal vernacular names. For example, only the European Robin is listed for England, when the European Robin *(Erithacus rubecula rubecula)* in fact occurs only as a migrant, and the resident Robin is the sub-species *E. r. melophilus.* Sometimes they get things right, however: Augur Buzzard is given for East Africa and Jackal Buzzard for South Africa, the correct names for the two races of one species; which just leaves one wondering when (if ever) they mean to imply sub-species, and when not.

Moving on to more exotic places, the Gambia and Senegal are quite well known, and this chapter seems to serve its intended readers well. The bird list is not quite as up to date as the so-called check-list reviewed in Part 2 of last year's *Notornis* but is otherwise more correct, to my mind. The Nairobi chapter really deals with the whole of Kenya, but at least its comments are limited to the game parks and one or two better-known tourist spots, and the information is reliable. I cannot comment on the bird list as it combines birds from 14 large areas and numbers over 600 species, which looks about right. Kakamega forest is unique and deserves the separate treatment it gets. Normally I would not be happy about directing swarms of people there, but as it is being so quickly destroyed, it is one case where good could come from publicity. Its value can be judged from its list of 310 species, to which I could add at least another dozen. The Mombasa chapter unrealistically covers most of the accessible coast. I prefer the treatment here; the reader is simply pointed in the general direction of good localities, given a rough idea of what to expect and left to fend for himself; and, I am sure, will derive more real satisfaction from doing so. It is a pity the coast to the south of Mombasa is not mentioned as the forests here are also interesting, having their own bird specialities, and are in desperate need of the better protection that might come from more recognition. The three chapters on South Africa are, as far as I can tell, and as far as they go, correct, useful, and generally good value.

Except for Kakamega, I have not gone through any of the African bird lists thoroughly, the reason being that so many of the names have been changed that the task of working them out becomes formidable. One has to look up each mystery name in the alphabetic index, which refers in turn to up to three pages in the taxonomic index, and then wade through those pages until the scientific name is found. Then, if one is lucky, this name agrees with that in one of the standard works on African birds, from which a common name which makes some sense can be found. In fact, it would have been simpler if scientific names had been used throughout. What any African, black, white, or khaki, would make of " African Baza," for example, I cannot imagine. The term is not used in any standard work on African birds, or birds of prey. It is not Kiswaheli, Afrikaans,

or any other African language. Baza is, apparently, an alternative Australian name for Cuckoo-falcon !

The bibliography is perhaps the most useful part of this book, although one cannot determine whether a quoted source is in print or not. Had the authors devoted their efforts to compiling a complete world-wide bibliography of this sort for the non-specialist birdwatcher, a real service would have been done to the prospective ornithological traveller and less potential harm to the birds they seek.

To sum up then, although books of this kind are likely to injure many of the areas they discuss and the birds they contain, this book, due to the inevitably inadequate treatment of so wide an area, is likely to do less harm than might be feared. The most potentially damaging information is given about the well-known parts of North America and Europe, where one hopes the growing conservation lobby may have some control over quasi-ornithological excesses. Further afield, the information is less specific and, one hopes, likely to result in a more individual approach, to the benefit of the individual, the birds, and our knowledge of them. The book is of limited use to non-North Americans owing to the number of strange common names used. (I hope these names are indeed understood in North America and that the authors have not had the arrogance to invent their own nomenclature.) Europeans in North America could make sense of the bird lists, as they have many bird species in common and so much other literature is available. But elsewhere most readers will find few familiar birds and will have very real difficulty in reconciling bird names in this book with those in the books they will need for identification. The bird lists seem to be complete for well-documented areas and less so as information becomes more difficult to acquire. The maps vary from adequate to useless and maintain a consistently scruffy schoolboy's-geography-exercise-book standard throughout (even the scales are not straight, ruled lines); they do nothing for the appearance of the book. The indexes do little to improve the nomenclature problems. The bibliography is the most useful part.

J. E. Squire

Birds of Fiji, Tonga and Samoa, by Dick Watling, illustrated by Chloe Talbot-Kelly. 1982. Millwood Press, Wellington. 176 pp; 15 colour plates; many other illustrations in colour and monochrome; distribution maps; 128 species fully documented.

It is difficult to decide whether this rather handsome publication was intended as a regional field guide or a 'coffee-table' reference. Personally, and also because of the increasing numbers of naturalists visiting the area, I would have preferred a more conventional pocket-sized field guide. Nevertheless it is a valuable addition to the Pacific literature.

The illustrations are of variable quality, I suspect partly because of the problem of relating painting from museum skins and specimens to the impression one gets in the field of the living bird; and this is often reflected in a lack of 'jizz.' While the (mainly) black and white illustrations of the seabirds, for example, show good recognition features, some of the waders are barely recognisable, especially the Banded Dotterel; also, the legs of the larger waders are too short relative to body size.

The presentation of precise mapwork in relation to accompanying text is a feature I often find irritatingly deficient in many books, and this one needs a little tidying-up in some ways. For example:

1. The common error of scattering spurious meaningless dots about the Pacific to represent island groups — I find non-existent islands in Tuvalu and Kiribati, for example.
2. The shaded area (p. 15) to represent the region under review should be lowered about two degrees in latitude in the north to avoid giving the impression of including southern Tuvalu and Tokelaus.
3. Reefs should be omitted — they tend to create fuzzy outlines.
4. Why not have enlarged maps for Samoan endemics (e.g. Triller, White-eye) as has been done for Fiji ?
5. ' Banaban ' should be ' Banaba ' or preferably ' Ocean Island.'
6. For comparative purposes it is preferable to have the same scale on all inserts.
7. Palmerston Atoll (photo p. 38) is part of the Cooks.

A reference on page 17 to the Rev. S. J. Whitmore should be to the well-known Whitmee. On page 151, the Niuean name *motuku* has again been incorrectly perpetuated for the Bristle-thighed Curlew.

Since a rare vagrant such as the Australian Pelican is fully documented, to be consistent, the same treatment should be accorded the White-faced Heron, Grey-tailed Tattler, Black-tailed Godwit and Little Tern, making the full species list at least 132.

On the positive side I especially liked the innovative and refreshing treatment of the historical and geographical sections, the useful vernacular index, and the delightful pencil sketches of details of heads, nests, fruits, etc. interspersed at appropriate places throughout the text.

There are some stimulating theories and tabular information about habitat utilisation, ecological isolation of local species, and breeding and moult cycles. Furthermore the author's emphasis on ecology and conservation throughout is one which all modern ornithological guides could well emulate.

The comprehensive bibliography will be a great help to any student of the South Pacific; inevitably, since the text was completed in 1978, there have been subsequent records and references. One of the most important results of this volume is again to demonstrate and identify the gaps that exist in our detailed knowledge of life histories, distribution and other features of the avifauna.

The price is a bit steep, but the quality is high, and I would recommend it to any naturalist interested in this region. (Normal price $39.95; $31.96 to members, ordered direct from the publishers, 291B Tinakori Road, Wellington.)

Peter Child

Having used this most welcome book in the field in both Samoa and Niue Island, I should like to make some relevant comments about it.

Although its size, 30 x 22 cm, is rather large for easy field use, it does stay open at any chosen page. I found some of the plates

misleading in field conditions. For example, the Red-vented Bulbul has a small crest and also a white band across the top of the tail, but neither of these field marks is shown in the painting in plate 7, although both are mentioned in the text. On Niue, I again found that the plates did not give the help one would expect in a publication of this type. However, the general text solved most problems, including the most difficult one of identifying a bird by its sound.

The range maps for each species I found useful, and I found the inclusion of local names for each of the island groups to be a major asset when discussing birds with residents. Twice I had local people confirm my tentative identifications by means of the local names. Another helpful feature, which should be used more often in bird books, is the provision of small sketches of a bird, its young, its nest or food, or comparative heads of the shrikebills and broadbills of the region.

In the sections on waders and seabirds, a silhouette is provided for most species, a helpful feature for readers not familiar with these groups. The bibliography of six pages contains 245 references, and the three indexes are for scientific, English and local names.

In conclusion, I strongly recommend this book, but it must be used with care in the field. As the author states in the introduction, much is yet to be learnt about many of the species of the region. The book should be a stimulus to ornithological work in the South Pacific.

L. B. McPherson

The bird fauna of Niue Island, South-west Pacific, with special notes on the White-tailed Tropic Bird and Golden Plover, by F. C. Kinsky and J. C. Yaldwyn. 1981. National Museum of New Zealand Miscellaneous Series No. 2; 49 pp., 22 tables of measurements. $2.80.

This learned systematic treatise provides an adequate picture of the interesting avifauna of remote Niue Island.

After a brief account of Niue's topography and environment and a concise account of previous ornithological work, the 25 species of Niue birds are discussed meticulously in turn. The 25 species include 6 seabirds, 12 land and freshwater birds and 7 transequatorial migrants, increasing by 6 species my own comprehensive list of 1971 (*Notornis* 18: 291-304); however, Child (1982, *Notornis* 29: 99-100) has added three more and another three were seen but not confirmed. This shows how much calendar time is necessary for an island's avifauna to be completely recorded.

The taxonomic treatment of all species is, as expected of the authors, superior, and the two illustrations by Janet Marshall (not mentioned in the text) are of her usual high class.

The map of Niue is not adequate, and one wonders why the authors did not use the Department of Lands and Survey's aerial mosaic, which would have given much more topographical detail. The ecologically important Huvalu Tapu Forest is wrongly spelt and not adequately marked on the map. There is little reference to the relative abundance of various birds as indicated by road counts. More important, there is scant mention of the vegetation (see Sykes, W. R., 1970. *Contributions to the flora of Niue,* DSIR Bull. 200) and even less of

non-avian vertebrates such as the roof rat *(Rattus rattus)*, Polynesian rat *(R. exulans)* and feral cats. The fact that Niue is perhaps the only South Pacific island without introduced birds is not mentioned. The conservation legislation passed in the 1970s is mentioned but not that it has since been revoked. Finally, one wonders why, with so many specimens available, no simple statistics have been applied to support the authors' findings.

However, despite these shortcoming, *The bird fauna of Niue* is a masterly approach to the systematics of the island's birds, including as it does an almost complete bibliography and using ample study skins. The description of the plumages and moult of the Golden Plover are of great value and interest. We have to regret that one of the authors has left South Pacific shores and so will not be available to handle more of our problems.

Kazimierz Wodzicki

Birds of prey of the world, by Friedhelm Weick, 1980. Collins. pp. 159, 1144 paintings, 160 line drawings. NZ$50.00.

This book is based on the author's practical experience as a bird painter over 25 years and has been produced with the help of the late Dr Leslie H. Brown, an acknowledged world authority on raptors. Essentially the book is intended as an identification guide to the world's raptors, inspired by Sir Peter Scott's ' Coloured Key to the Waterfowl of the World ' and should not be seen as a competitor to other more comprehensive volumes. To this end the book is composed of brief sections, for example, on the topography of a diurnal bird of prey, which serve to introduce and explain the use of the identification key. To supplement this key each species in the Order Falconiformes is illustrated and briefly described according to its plumage and distribution, together with measurements essential to quick and easy identification in the field. An additional aid to rapid diagnosis is the use of small arrows on the colour plates which draw attention to significant differences in appearance and plumage, be they racial, colour phase or otherwise. The text is in English and German.

My response to this book, even as a raptor enthusiast, is lukewarm. Much of its bulk is taken up by the German language sections, which tend to confuse the reader, are of doubtful appeal to New Zealand ornithologists, and when left out, leave little that has not already been written elsewhere. Perhaps two editions, one in English and the other in German, would have been more suitable, and at half the price !

I am most familiar with New Zealand raptors and so have judged the book's accuracy on these species and, alas, the author is not up to date with his information. The author may perhaps be forgiven for not including research done since 1977, but much of the data left out, for example, on the Harrier's length, weight and culmen, has been available for many years. However, the author has been meticulous in the preparation of his colour plates, and, apart from the dorsal surface of the adult male Harrier's tail, which is much more heavily barred, the standard of accuracy is high. Despite this, my recommendation is not to buy the book. Review copy deposited in OSNZ library.

L. A. Hedley