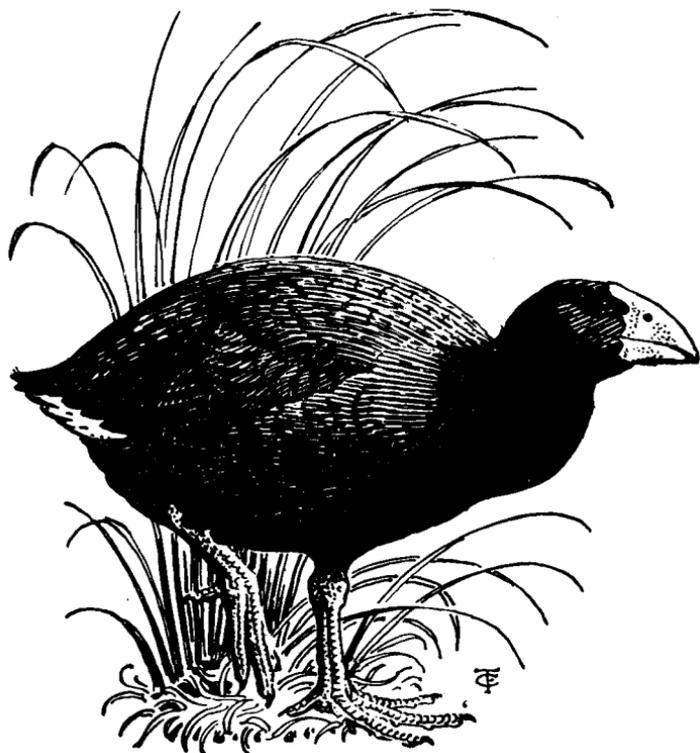


NOTORNIS

Journal of the Ornithological Society
of New Zealand



Volume 35 Part 4 December 1988

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CONTENTS

HAWKINS, J.M. The Farewell Spit gannetry - A new sea level colony	249
WALTERS, M. Probable validity of <i>Rallus nigra</i> Miller, an extinct species from Tahiti	265
MISKELLY, C.M. The Little Barrier Island snipe	273
Classified Summarised Notes, North Island	285
Classified Summarised Notes, South Island	311
Short Notes	
HADDEN, D. A six-egg clutch of Yellow-breasted Tit	260
SIBSON, R.B. A Back-tailed Australasian Gannet and others with variable tails at Muriwai	261
FOX, N.C. A taxonomic redescription of the New Zealand Falcon <i>Falco novaeseelandiae</i> Gmelin, 1788	270
BEAUCHAMP, A.J. Status of the weka <i>Gallirallus australis</i> on Cape Brett, Bay of Islands	282
KAUFMANN, G. Development of Spotless Crake chicks	324
MALONEY, R. A Ruff at Lake Wainono	328
Review	284

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NOTORNIS

is the journal of the Ornithological Society of New Zealand (Inc.)

Editor B. D. Heather,
10 Jocelyn Crescent,
SILVERSTREAM

VOLUME 35

PART 4

DECEMBER 1988

THE FAREWELL SPIT GANNETRY - A NEW SEA LEVEL COLONY

By J. M. HAWKINS

ABSTRACT

A new breeding colony of Australasian Gannets (*Sula bassana serrator*) is recorded from Farewell Spit, Nelson. From small beginnings in 1981 and a major roost of c. 300 in 1983, the colony has increased steadily from c. 75 breeding pairs in the 1983/84 season to c. 600 in 1987/88. Two birds breeding at the site had been banded as chicks at White Island, Bay of Plenty.

INTRODUCTION

Until 1981 the only records of Australasian Gannets (*Sula bassana serrator*) at Farewell Spit were of birds feeding offshore and the occasional beach wreck. When in November 1981 about 9 gannets were seen on a slightly raised area of vegetated sand on the Bay Flats east of Mullet Creek (Fig. 1), there was considerable interest, especially as the birds were displaying and at least two had scrapes. However, there was no sign of any breeding and gannets were not recorded there or anywhere else on the Spit in November 1982.

In January 1983, members of an Ornithological Society field course saw about 300 roosting on the Shellbanks at the eastern end of the Spit (Fig. 1). They noted much activity and display but once again the gannets did not build nests.

The Shellbanks are raised banks, up to 2 m high in places, of shell, sand and driftwood, sparsely vegetated with marram (*Ammophila arenaria*), sea rocket (*Cakile edentula*), velvety nightshade (*Solanum chenopodioides*),

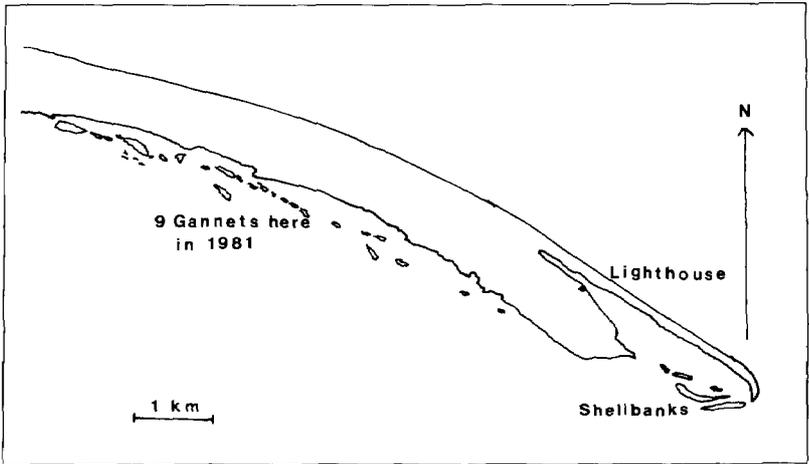


FIGURE 1 — The eastern end of Farewell Spit

and sowthistle (*Sonchus oleraceus*). At high spring tides, water separates the Banks from the 25 km Spit proper and from one another, but foot access is possible at low and some neap tides. They are traditional nesting sites for Southern Black-backed Gulls (*Larus dominicanus*), Red-billed Gulls (*Larus novaehollandiae*), Caspian Terns (*Hydroprogne caspia*), White-fronted Terns (*Sterna striata*), and occasionally a few pairs of Black-billed Gulls (*Larus bulleri*). The Caspian Tern colony of some 150 pairs is the largest in the South Island.

METHODS

The establishment of this colony was watched by JMH and various OSNZ members on visits to Farewell Spit. Notes were taken by JMH for all visits except for those made by Patrick Riddett while he was ranger at the lighthouse. As this was a new colony the former Lands and Survey Department, the former Wildlife Service and the Ornithological Society of New Zealand stated clearly that the colony was to be visited only to note whether the gannets were nesting and raising chicks. Also a further reason for not disturbing the area was the Caspian Tern colony alongside.

At the laying and young chick stages of each season we checked the colony only enough to make sure that the gannets were laying eggs and later hatching chicks. Therefore the early counts were estimates only, made quickly and often from only one side of the colony. The number of birds on each colony cannot be seen from any one vantage point and so for a good count one has to circle each colony.

Some of the later counts are more accurate because we could approach each colony and count from several points. The numbers given, which are means of counts by two or three observers, usually did not vary by more than 5 birds.

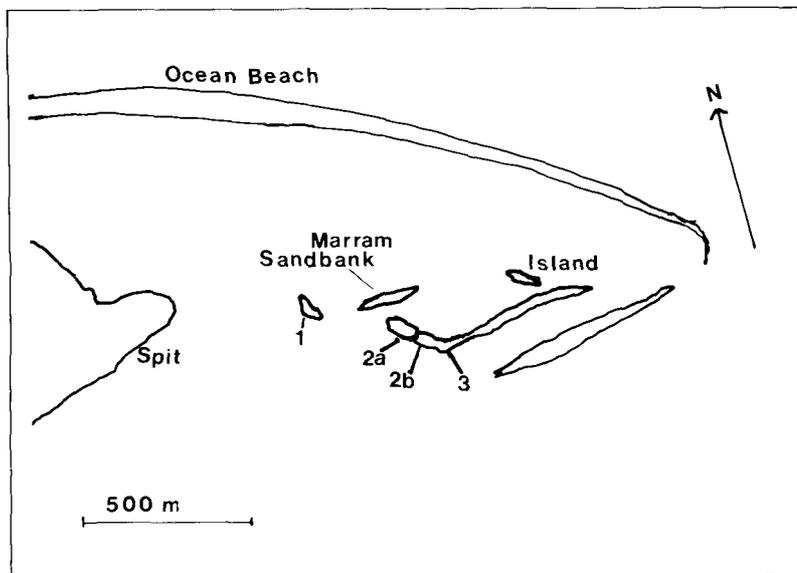


FIGURE 2 — The gannet colonies on the Shellbanks. Colonies 2a and 2b were called colony 2 until divided by the sea in 1987

OBSERVATIONS ON BREEDING

1983/84

This was the first season of actual breeding. At the roosting site of 1982/83's c. 300 gannets, two colonies formed totalling 70-80 nests. Some 400 non-breeding birds were also present. Thus, the colony apparently had begun with birds roosting there in 1982/83, a summer of strong winds when take-off and landing were easy, even though the site was a sea-level shellbank.

On 23 November 1983, about 600 gannets were on the Shellbanks in two colonies (colonies 1 & 2; Fig. 2) with a total of 70-80 occupied nests, some of which had eggs. On 19 January 1984, the nesting gannets had chicks and a roosting flock of adult birds was on an outer bank.

1984/85

This season the number of breeding pairs increased to c. 126 and a third colony was formed to the east.

On 10 August, gannets were seen visiting the colonies. On 27 September, 50+ gannets and about 30 occupied nests (at least one with an egg) were in colony 1, and about 80 gannets were in colony 2. A further 500 were fishing offshore on both sides of the Spit.

On 13 October 1984, 200-300 gannets and about 50 nests were on the Shellbanks. A fortnight later about 400 gannets were in three separate colonies.

On 11 January 1985, 16 chicks and c. 40 occupied nests were counted in colony 1, 14 chicks and 30 occupied nests in colony 2, and three chicks and 23 occupied nests in colony 3.

On 8 March 1985, 28 chicks were counted in colony 1, one chick in colony 2 and two chicks in colony 3. Presumably many of the chicks had fledged because dead chicks were not found on the colonies or the nearby coast. Few adult birds were at colonies 2 and 3, which had been washed over by high tides. A normal 4 m spring tide affects the nesting colonies only if accompanied by strong winds or an ocean swell.

1985/86

Once again there was a further increase in breeding pairs to about 240. Twenty-two dead chicks were found in the colonies in January, which is the only occasion when more than the odd dead chick was seen.

On 28 September 1985, all three colonies had occupied nests, and eggs were seen in colonies 1 and 2. On 12 November, colonies 1 and 2 each had about 100 occupied nests, and about 200 adult birds were counted in colony 1 and about 220 in colony 2. Colony 3, which was still the smallest, had about 80 occupied nests and 150 adult birds. On 12 December, 1 chick was seen among gannets but no effort was made to see any more.

On 29 January 1986, the chicks were counted as follows:

Colony 1: 70-80 live chicks plus 12 dead. This colony had roughly equal numbers of downy and fully feathered chicks.

Colony 2: 70+ chicks plus three dead. Most chicks in this colony were fully feathered.

Colony 3: 90+ chicks plus seven dead. This colony had become the largest and had more downy than feathered chicks.

Colony 1 still had the most adult birds, many of them roosting at the western end. Some of the dead chicks may have been killed by a storm on 25-26 January. Dead chicks have been seen only after storms or particularly high tides.

1986/87

This season there was another encouraging increase in breeding pairs to about 360. A banded adult (band M9253) gave the first indication of where these gannets originated. It was a breeding bird with a chick. This bird had been banded as a chick on White Island in 1981.

On 3 November 1986, there were over 300 gannet nests on the Shellbanks, an increase in nesting from the previous season. On 2 December 1986, although the number of adult birds was much the same as in early November, more birds seemed to be breeding. Chicks in full down were in all three colonies.

On 30 January 1987 the chicks were counted without causing undue disturbance, and so some chicks in the middle of the colonies or under adults may have been missed. Colonies 1 and 2 each had 130 chicks and colony 3 had 100. Some birds were still on eggs. Colony 3 was extending to the southeast and gannets were roosting on the outer shellbank. The number of adult gannets was estimated at 900.

On 27 February 1987, colony 1 had about 120 feathered chicks and 10 downy chicks.

Colony 2 had only 65 feathered chicks. Some may have already left for sea because there was no obvious mortality in the colony or along the nearby coast.

Colony 3 had about 100 feathered chicks and three downy chicks. One naked chick was also seen and one adult was still sitting on an egg.

On 6 March 1987 Patrick Riddett, the Department of Lands & Survey ranger at the lighthouse, reported that the tide had washed over colony 1, which had 100 chicks. Colony 2 had 40 chicks and the bank on the south side of the colony had been cut back by the sea. Colony 3 had 112 chicks, one newly hatched chick, and an adult still sitting on an egg.

On 29 March 1987, colony 1 had 13 feathered chicks, two downy chicks, and about 100 adult gannets, colony 2 had only two downy chicks and about 100 adults, and colony 3 had five feathered chicks and two downy chicks. The adult birds were very flighty and those at colony 3 lifted off before they could be counted.

On 10 April, three chicks were in colony 1, no chicks in colony 2, and two chicks in colony 3.

On 18 May 1987, only one feathered chick was in colony 3 and about six adult birds were hovering around. The other two colonies were empty. The single chick appeared to be well fed but unable to fly.

1987/88

This season the numbers of adult gannets increased to about 1800 while the number of breeding pairs almost doubled to about 600.

Banded birds seen included the banded bird of the 1986/87 year and three whose bands could not be read.

On 27 October 1987, colony 2 was seen to have been cut in half by the tide and had become 2a and 2b (Fig. 2). About 1050 adult gannets were on the colonies as follows: colony 1 about 300, colony 2a about 100, colony 2b about 250, and colony 3 about 400. Eggs were seen under the birds.

In early January 1988, during an OSNZ study course on Farewell Spit, the gannets were observed from a marram sandbank some 30 m from colony 2b. It was estimated there were some 1600 to 2000 adult birds and well over 300 chicks. On 12 January, Patrick Riddett counted 536 chicks in the three colonies.

On 2 February 1988, a further count was made by OSNZ members: Colony 1: 187 feathered chicks, 14 downy chicks, one naked chick and two birds on eggs.

Colony 2a: 36 feathered chicks, five downy chicks, and two birds on eggs.

Colony 2b: 108 feathered chicks, 17 downy chicks, and one or two birds on eggs.

Colony 3: 208 feathered chicks, 14 downy chicks, and three or four birds on eggs.



FIGURE 3 — Colony 1 (foreground), looking eastward towards Marram Sandbank (left), Island (centre distance), and colonies 2 and 3 (right distance)

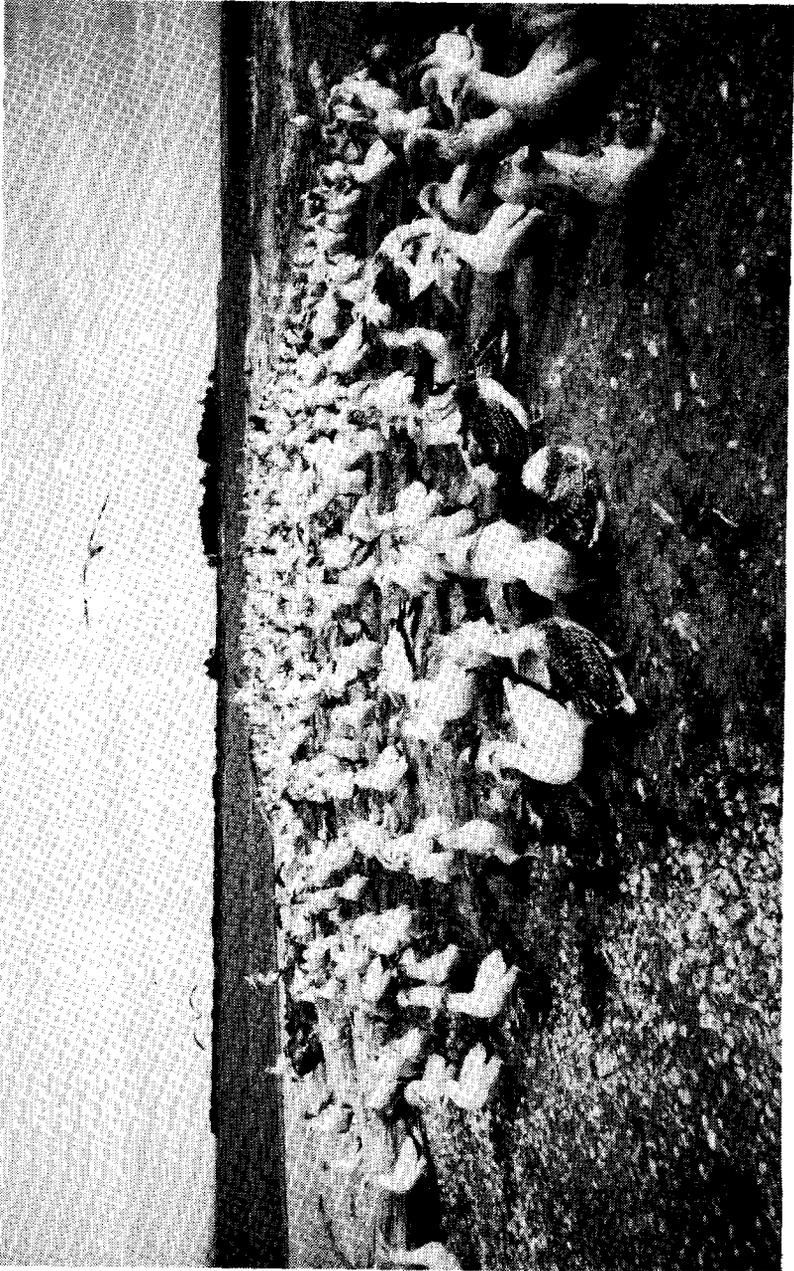


FIGURE 4 — Colony 1, looking westward towards lighthouse



FIGURE 5 — Colonies 2a and 2b (foreground); colony 3 beyond

Altogether there were some 600 occupied nests, a similar total to that of 12 January. The only dead chick seen was a feathered one in colony 2b. At least two of the adult birds were very speckled on the wing, and the tail feathers of adults varied greatly from totally white through to totally black. See Sibson, this issue, pages 261-264.

On 17 February, chick numbers were as follows:

Colony 1: About 180 feathered chicks, two downy chicks and one dead downy chick.

Colony 2a: 38 feathered chicks and two downy chicks.

Colony 2b: About 120 feathered chicks, three downy chicks and one adult on an egg.

Colony 3: About 180 feathered chicks, two downy chicks and two adults on eggs.

The last two nests, which were a little apart at the west end of the colony, were the same two as seen on 2 February.

On 18 February, a 4.1 m tide and a moderate southeast wind pushed the water over many parts of the Shellbanks. Colony 1 was very exposed to the waves at the east end, and the chicks kept trying to stay on their nest sites even when repeatedly bowled over and over by the breaking seas. At the top of the tide the chicks were finally pushed into a tight mass. Many of the adults had left the colony and were sitting on the water close by.

Although slightly higher ground was near the west end of the colony, none of the gannets moved to it, whereas the Black Swans (*Cygnus atratus*) had moved in with the tide and many were roosting on the banks.

The other three colonies were all washed over in parts by the tide but the chicks there could keep to their sites.

Four banded adult gannets were seen. One on colony 2b, banded on the left leg, could only be read partly as M39???. This series had been used only at White Island (C.J.R. Robertson, pers. comm.). Of three banded birds in colony 1, only one band, M39253, could be read. This was the same White Island bird seen in February 1987, and it was occupying the same site.

On a brief visit on 14 March, after high tides and strong winds had partly washed over the colonies, the colonies were found to have survived intact, most chicks being old enough to float on the water. The adult birds were not counted. Colony 1 had 35 feathered chicks, colony 2a had 12 feathered and one downy chicks, colony 2b had 14 feathered chicks, and colony 3 had 14 feathered and two downy chicks. The two separated nests at the west end of colony 3 were empty.

On 27 March Patrick Riddett counted c. 550 adult gannets, 12 feathered chicks and three young flying overhead at colony 1, c. 50 adults, two feathered chicks and one downy chick at colony 2a, c. 250 adults and four feathered chicks at colony 2b, and c. 500 adults but no chicks at colony 3. The colonies were very noisy with the birds displaying – head shaking and wing opening. Some gannets were carrying nest material (*Zostera*). A further 200 birds were flying offshore.

No further visit was possible until 15 May. As the colonies were approached 5 or 6 adults flew off them, but between 1600 and 1745 hours no birds were seen to actually land on any of the colonies though up to 12 adults and one juvenile were flying above them. Gannets were feeding offshore on both sides of the Spit.

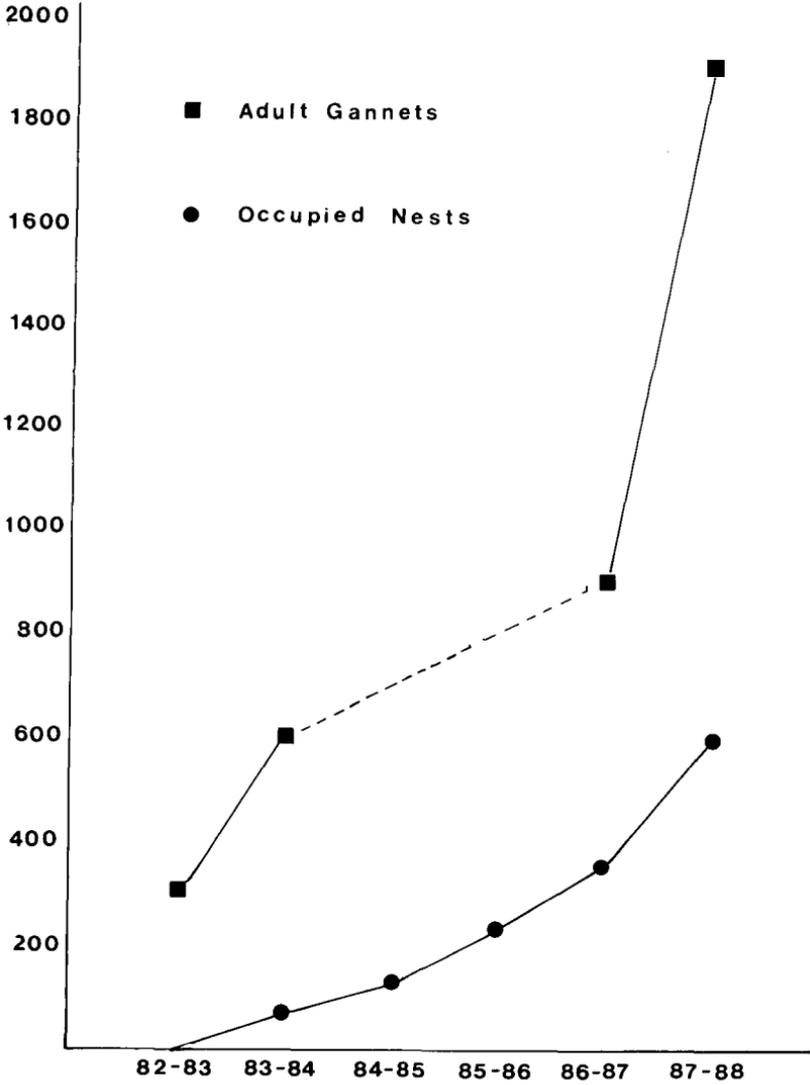


FIGURE 6 — Increase in numbers of adult gannets and occupied nests from 1982 to 1988

No gannets were present on the Shellbanks before sunrise on the 16th, but between 0830 and 1145 hours, up to six gannets were continually flying over the three colonies but not landing. High water was at 1003 and there were gulls, waders and swans roosting on the Shellbanks.

DISCUSSION

After five breeding seasons with increasing success each year (Fig. 6) the colony seems well established. It should continue to thrive, provided storms or high tides cause no major structural damage to the Shellbanks, the food supply is maintained, and human interference is minimal.

The decrease in the pelagic fishery in Golden and Tasman Bays may have led to an increase in the surface fish suited to the gannets' food requirements (P. Wilson, pers. comm.).

During the breeding season gannets have been seen returning to the colony from all directions, and feeding gannets are common along both shores of Farewell Spit and in Tasman and Golden Bays. Even in stormy weather there is usually some sheltered water where they can feed.

This is the only sea level colony in New Zealand and the largest gannet colony in the South Island. However, sea level colonies were attempted at Portland Island in the 1970s and there have been continuing attempts at Cape Kidnappers in the 1980s (C.J.R. Robertson, pers. comm.). With the usual strong winds at Farewell Spit, the gannets can lift off vertically from their nests without affecting their neighbours. On the infrequent occasions when there is little wind the gannets have to paddle along the ground, often regurgitating food and disrupting other incubating birds. People should therefore keep away from the colonies in calm weather. One gannet regurgitated nine pilchards (*Sardinops neopilchardus*), each 13-15 cm long. A second bird regurgitated eight similar fish.

Adult gannets are in Tasman and Golden Bays throughout the year, but immature birds are rarely seen. During the winter the gannets are not known to use the Shellbanks and all traces of their nests are usually blown or washed away.

The gannets have affected the numbers of other species nesting on the Shellbanks. The Red-billed Gulls have largely stopped breeding there, although 12-20 birds are always around the fringe of the colony. Occasionally one or two pairs do nest. The White-fronted Terns, always fickle nesters, have not nested there at all since the arrival of the gannets.

Over the last five years Caspian Tern breeding has increased gradually to about 150 nests. Their breeding seems to have benefited from the protective 'umbrella' of the gannets, which reduces harassment from Red-billed Gulls which still hang around.

About 80 pairs of Black-backed Gulls nest on the Shellbanks and at least one or two pairs are always patrolling the gannet colonies. These gulls prey on Caspian Tern chicks but have not been seen to prey on gannet eggs or chicks. However, they have been seen eating fish regurgitated by gannets taking off when disturbed.

ACKNOWLEDGMENTS

I thank the many members of OSNZ who helped with the field work in all weathers; Rowley Taylor and Barrie Heather for considerable help with the manuscript; Brian Bell, Chris Robertson and Peter Wilson for many helpful suggestions; Elspeth Waghorn for identifying the pilchards; Jocelyn Tilley for advice with draughting; and Merle Rae for typing.

I thank Bruce Robertson, Manager of Puponga Farm Park and the Lands and Survey Department, Takaka (now Department of Conservation), for allowing access to Farewell Spit, for accommodation and help with transport.

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SHORT NOTE

A six-egg clutch of Yellow-breasted Tit

On 12 December 1987 I came across a nest of Yellow-breasted Tits (*Petroica m. macrocephala*) in the bank of a stream at Craigieburn, approximately 35 km east of Arthur's Pass. It was tucked in beside a tree stump with overhanging grasses concealing it. To fill in a Nest Record Card I carefully lifted out the chicks and to my surprise found there were six. They were a few days old but still naked. On 19 December I checked again and all six chicks were still alive. I spent some hours watching the nest on the 19th but at no time did I see more than one female.

In a search through the literature available to me the only other record of six that I can find is Stidolph's report in *The Birds Around Us* (1971) of a Pied Tit (*P. m. toitoti*) in the Wairarapa with 5 eggs and a newly hatched young. (He does mention a Robin's nest on Kapiti Island with 6 eggs.) The Nest Record Scheme has no cards for Yellow-breasted Tit with 6 eggs (H. A. Robertson, pers. comm.). The usual range of clutch size given is 3 or 4 (Oliver 1955) or 3 - 5 (C. A. Fleming in *Complete Book of New Zealand Birds - Readers Digest* - and Falla *et al.*, *New Guide to the Birds of New Zealand*).

DON HADDEN, 288 *Yaldhurst Road*, Christchurch 4

SHORT NOTE

A black-tailed Australasian Gannet and others with variable tails at Muriwai

On the evening of 27 October 1987, Ronald Meadows, an experienced glider-pilot, telephoned in some excitement to say that he had just photographed a gannet which clearly showed 12 black feathers in its tail (Fig. 1). It had been soaring above the expanding colony at Muriwai, which he has now been visiting for some years to study the gannets' mastery of the air and the ways in which they respond to awkward air-currents. Indeed, so closely has he been associated with the new offshoot colony on the bare southern headland, now protected by a fence, that for two successive years he has offered nesting material to a male which occupies the same site. He believes that when he appears this bird recognises him and comes to the fence in expectation of an acceptable 'hand-out'.

Two days after our conversation Mr Meadows brought the accompanying photographs, together with other negatives. The Australasian Gannet (*Sula serrator*) is said normally to have a tail of 12 rectrices, of which the four in the centre are black and the rest white, yet a photograph taken half a century ago by a Geoff Buddle (1951) shows a local gannet in which the six central tail-feathers are black and three on either side are white. Peter Stein's code for the tail of a typical adult gannet was 4.4.4. During his extended studies of the Horu Horu gannets he applied a mathematician's love of precision to growth and plumage-changes. After noting that the number of black rectrices varied in the tails of gannets, caught as they returned to the island,



FIGURE 1 — A "black-tailed" Gannet soaring over the Muriwai colony

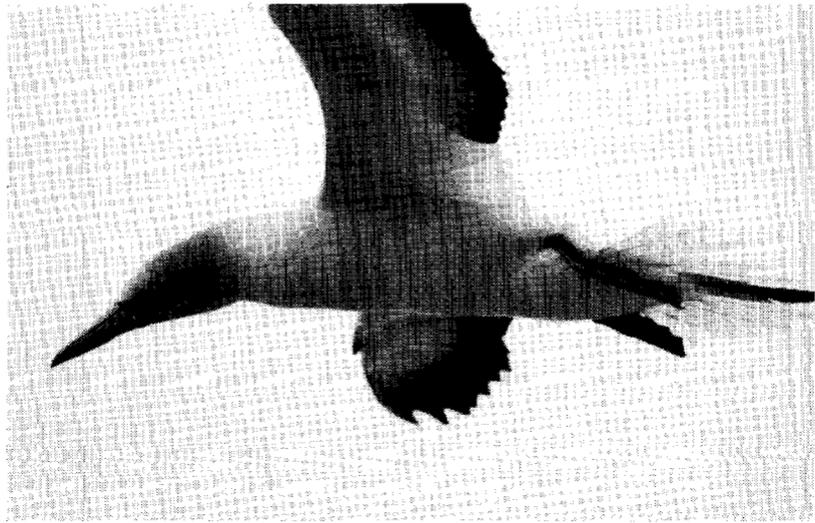


FIGURE 2 — Only two black tail feathers, code 5.2.5

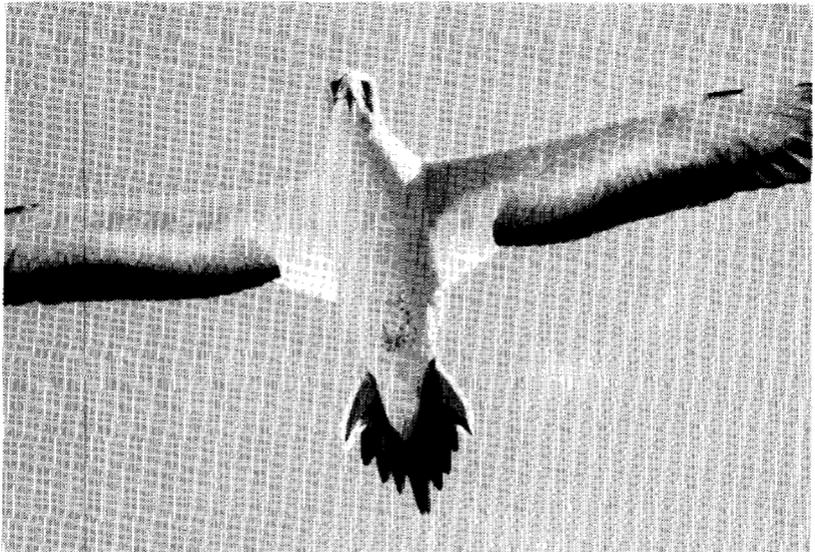


FIGURE 3 — Tail mainly black

Stein thought for a while that he had found a way of telling that a bird was subadult, but it was not to be. Even the number of tail-feathers proved to be inconstant. One 12-year-old bird had only eight rectrices with a code 3.2.3. Stein had also noted that occasionally up to ten central tail-feathers, even

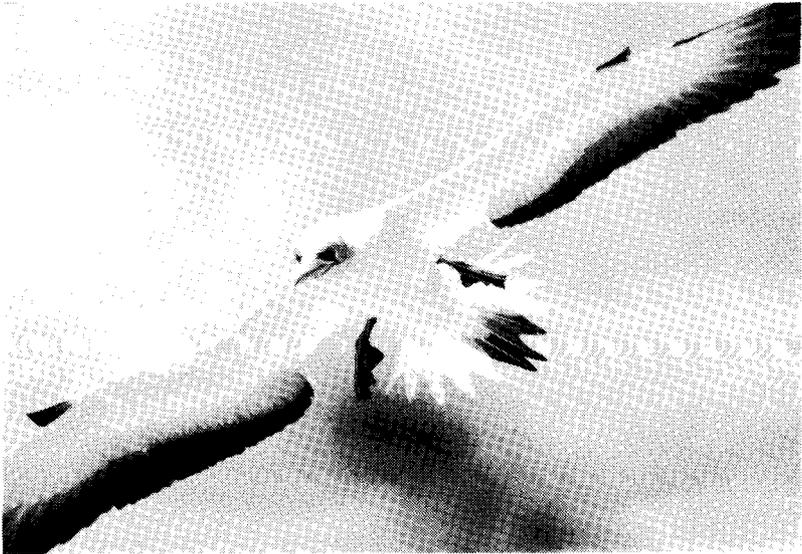


FIGURE 4 — An unevenly marked tail, code 5.3.4



FIGURE 5 — Carrying nest material, code 3.6.3, as in Buddle's photograph in apparent adults, might be black; an interesting observation duly noted in the "New Field Guide". But even with most 6-year-old subadults a code of 4.4.4 was normal. More recently Robertson (1985) has stated, without giving a precise formula, that the central tail-feathers of adults are black and the side feathers white; and also that, in the Australasian Gannet, the tail "changes from black, or black and white, to adult form over three or four years".

The Masked Booby (*S. dactylatra*), which breeds as close as the Kermadec and Norfolk Islands, is credited with having a wholly black tail. However Mr Meadows assures me that the bird which he photographed had the typical yellow crown and nape of a local gannet, and the bird in the picture certainly lacks the 'diabolical' appearance mentioned by Serventy & Warham (1971).

It is commonly accepted that the adult North Atlantic Gannet (*S. bassana*) has a white tail and the Cape Gannet or Malagash (*S. capensis*) a black tail, although in some examples the tail is variable. An instructive series of photographs in Nelson's "The Gannet" shows how the extent of black in the tail-feathers of North Atlantic Gannets shrinks during the years of immaturity; but even in fourth-year birds strong traces of black remain.

Although the three species of true gannets, as distinct from boobies, fish mainly over continental shelves, it is reasonable to conjecture that, aided by the West Wind Drift and the Roaring Forties, South African Gannets became the ancestors of Australasian Gannets and may still in their juvenile wanderings cross the Indian Ocean. Indeed recently, on the strength of photographs taken at Port Phillip Bay, Victoria, of a gannet with 12 black tail-feathers, *Sula capensis* has been added tentatively to the Australian list. Every year many seabirds from the south-west Indian Ocean or beyond reach New Zealand waters. In July 1987 a Grey-headed Mollymawk (*Diomedea chrysostoma*), bearing a South African band, was picked up at Whatipu, a few miles south of Muriwai, and Yellow-nosed Mollymawks (*D. chlororhynchos*), which seem to like the company of gannets, are now sighted by perceptive mariners every winter in the coastal waters of northern New Zealand.

Long isolation has enabled New Zealand gannets to evolve from fledging to maturity distinctive patterns of growth, plumage change and behaviour. However, variations in the number of black rectrices may indicate a not-too-distant origin from *S. capensis* and a tendency to revert to type. Alternatively, perhaps *S. capensis* sometimes straggles to New Zealand and has settled in to hybridise with *S. serrator*.

This note had been prompted by Ronald Meadows' outstanding pictures. To him I gratefully acknowledge my indebtedness. Since photographing the black-tailed gannet, he has returned to Muriwai and obtained pictures (Fig. 2-5) of other apparently adult, but probably young adult, gannets which show variations in the tail-feathers. These do not accord with Peter Stein's code of 4.4.4.

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PROBABLE VALIDITY OF *Rallus nigra* Miller, AN EXTINCT SPECIES FROM TAHITI

By MICHAEL WALTERS

The name *Rallus nigra* is known only from a plate by J. F. Miller, first published in his *Icon. Animalium* of 1784, which Lysaght (1956) believed depicted the rail currently known as *Porzana tabuensis* (Gmelin), the Spotless Crake or Sooty Rail, a widespread species occurring from Australia and New Guinea across the southern Pacific Ocean to the Marquesas Islands and south to New Zealand. She proposed to substitute Miller's name for Gmelin's on the grounds of priority, an action which seems unwise as circumstantial evidence suggests that *Rallus nigra* represents another, almost certainly extinct, species.

The plates of Miller and Forster

According to Lysaght's account, the Spotless Crake (*Porzana tabuensis*) was discovered at Tahiti and painted by Georg Forster on Cook's second voyage, and this plate was then copied by Miller. Lysaght continued:

The interleaved text gave no particulars except for the name of the bird, *Rallus nigra*, and the locality, Otaheite [i.e. Tahiti]. Miller's plate is very close to Forster's save that the bird is depicted standing instead of crouching, that it is almost uniformly black and only slightly paler below, instead of having a grey head and undersurface contrasting with the back and wings, and that the iris and legs are bright chestnut brown instead of red.

Lysaght's account actually leans very heavily on the earlier note of Sherborn & Iredale (1921) who, in discussing Miller's *Icon. Animalium* (a very rare book, a copy of which had just come to light) said:

Rallus nigra Miller is the bird long known as *Porzana tabuensis* (Gmelin), but the correct application of the latter name is not definitely ascertained. Thus J. R. Forster described a black bird, but noted that there was a brown variant. His son painted the Black Rail from "Taheitee" and this painting is preserved in the British Museum (Natural History), no. 130, with the native name "Maho" pencilled on it. The drawing was copied and published with little alteration by Miller under the name *Rallus nigra*. Forster's MS name was *Rallus minus*, and his localities were "Otaheite et in Tonga-Tabu".

It is, however, quite clear that neither of these plates represents *Porzana tabuensis* as Lysaght claims. *P. tabuensis* has a very conspicuous brown mantle which is present on neither Forster's nor Miller's plates.

Forster's unpublished plate depicts a squatting rail, charcoal grey on the head and underparts, black on the back, wings and tail. The legs are red, the claws greyish. The face is longish and the bill thick and black. The eye is red with a dark pupil, surrounded by an area of black skin outlined in orange. It is a very carefully executed painting. In the bottom left-hand corner, "Taheitee" has been written in pencil, and "Ge. Forster" in ink. In the bottom right-hand corner is written "Maho".

Miller's plate in the *Icon. Animalium* is a hand-coloured engraving depicting a standing rail, charcoal black all over, with suggestions of darker and less dark areas; but this impression may be due to lines on the original

print. The bill is black but appears thinner than on Forster's plate, the head is rounder, and a pale yellowish-green line separates the mandibles. The eye and legs are duller, browner red than in Forster, and the claws are grey, outlined with thick black lines. There is no suggestion of any bare skin round the eye.

Miller died in 1796, in the same year that a revised edition of his work was published. This book, the *Cimelia Physica*, of which more copies survive than of the original edition, reproduced the original plates (hand coloured from the same engravings but executed with rather less care) and added an interleaved text by George Shaw, of which the paragraph relating to Miller's Rail runs:

This bird, which the plate represents in its natural size, is a native of Otaheite and several other islands in the Pacific Ocean. The irides are red. It is a species which was first discovered during Sir Joseph Banks' voyage to the Southern Hemisphere. It is said to be subject to some variety in point of colour, being sometimes much browner than here expressed, with the vent barred with streaks of black.

Lysaght dismissed Shaw's statement that the rail was discovered on Banks' voyage as of "doubtful validity", but she seems to have overlooked the fact that Shaw's account is clearly taken from that of Latham (discussed later). Shaw was known to be flamboyant and careless, and in this instance he seems to have misinterpreted Latham's simple ascription of the species to Banks as meaning Banks had collected a specimen, when Latham probably meant no more than that the specimen or painting on which he based his description was in Banks' collection.

The most convincing note on Miller's Rail was that given by J. L. Peters (1934), who placed Miller's name with a query in the synonymy of the rail *Nesophylax ater* (North) from Henderson Island, and added in a footnote:

Miller's plate represents a wholly black rail somewhat larger than *tabuensis*; it cannot be identified with any of the known forms of *tabuensis* and possibly represents the bird later named *Porzana atra* or at least a bird closely allied to it.

As Henderson Island was not discovered until long after Cook's voyages, Miller's Rail is not likely to have referred to the rail population from that island, but it may have been an allied form. Lysaght correctly pointed out that the question of size is irrelevant because the measurements of the rail on Miller's plate do not exceed those of *some* specimens of *Porzana tabuensis*. However, the incompatibility of colouring is an important one, and one which seems to have been overlooked by all previous writers except Peters.

The description of *Rallus minutus* by J. R. Forster

In addition to the two plates, there exists a description by J. R. Forster, written at the time of the voyage but not published till many years after the author's death. This description, which Forster calls *Rallus minutus*, was identified by Lichtenstein, the editor of the published account, as *Porzana tabuensis* and was clearly based on a specimen or specimens collected by the Forsters on their journey, and not on Georg's plate, with which it disagrees on several points. According to Forster, *minutus* was a glossy black rail, with white barring on the thighs, a dull black bill, and red feet and eyelids. It

inhabited Tahiti and adjacent islands, and Tonga-Tabu. The body was the size of "*Scolopacis gallinulae*", i.e. *Gallinago minima*. The bill was straight, conical, with the base thick, the upper mandible "flat and convex" and black. The mandibles were subequal and sharp, the upper with the point very little bent, the lower more slender.

The nostrils were oblong and at the base of the bill. The eyes were medium, near the bill; the irides and the margins of the eyelids blood-red. The feet were four-toed and "split" (i.e. not webbed), designed for walking, and fuscous red. The thighs were half naked, smooth and slender, the toes very slender, the three front ones longer than the shin, the middle toe longest, the lateral ones shorter and slenderer, the points touching the ground. The claws were very short, slender, sharp and glossy black. The head, neck, breast and abdomen were lead-black; the back, wings and tail glossy black but at the same time dark rusty-fuscous. The wings were of middle length, fuscous, the underside of the tail and wings being variegated with white and fuscous. The 10 tail feathers were black.

I compared this description with specimens of *Porzana tabuensis* and *Nesophylax ater* in the British Museum (Natural History) collection, and found that much of it could apply to either species, but the barring on the thighs, the variegations on the underside of the wings, and the "rusty-fuscous" back seem definitely to refer to *tabuensis*. It seems likely, therefore, that the Forsters collected specimens (none now extant) of both *nigra* and *tabuensis* but failed to distinguish between them, J. R. Forster's description probably referring to *tabuensis* and Georg Forster's plate being based on a specimen of *nigra*. As it does not agree with the description his father gives, it cannot possibly have been based on the same specimen. There appears to be no evidence that either specimen ever reached Britain (Medway, pers. comm.).

The descriptions of Latham

Much of the past confusion regarding these two rails seems to have arisen from a failure to interpret correctly the significance of the two descriptions by John Latham (1783) in his *General Synopsis of Birds* of his Tabuan Rail and Otaheite Rail, the origins respectively of Gmelin's names *Rallus tabuensis* and *Rallus tahitiensis*. These are as follows,

Tabuan Rail

Length six inches and a half. Bill black: eyelids and irides red: general colour of the plumage brownish black: beneath dusky: legs reddish brown. Inhabits Tonga-Taboo, Otaheite and the neighbouring isles in the South Seas. This varies in having the plumage more inclined to brown: the vent white, transversely barred with black lines: legs red. Inhabits the Island of Tanna. Sir Joseph Banks.

(This description was probably based on Georg Forster's plate, although I would describe the legs as red rather than reddish brown)

Otaheite Rail

Length six inches. Bill three-quarters of an inch, black: the head, neck, and all the underparts of the body, dark ash-colour; palest on the chin: the upper parts, and the wing coverts deep red brown, quills dusky, edged with white: edge of the wing, and the first quill feather, white: tail an inch and a half long, rounded in shape, and black: legs dusky yellow: claws black. Inhabits Otaheite, and the Friendly Isles [i.e. Tonga]. Sir Joseph Banks.

Although Wigglesworth (1871) separated *tahitiensis* from *tabuensis*, nearly all writers have correctly realised that there is no difference between the populations of the rails of the species now called *tabuensis* occurring on the islands of Tonga and Tahiti, but have therefore regarded *tahitiensis* as a synonym of *tabuensis* in the mistaken belief that Latham had separated the two populations. In fact Latham did no such thing. According to his accounts, quoted above, both rails occurred on both islands. Furthermore, his descriptions must refer to two different species. The pronounced reddish brown of the upperparts of the Sooty Rail is indicated by Latham's description of the Otaheite Rail, while Latham's Tabuan Rail accords reasonably well with Miller's Rail, and this bird was probably a now extinct species allied to *Nesophylax ater* of Henderson Island. Latham probably described the Otaheite Rail from specimens collected on Cook's third voyage (Medway 1979).

One other point from Latham's description remains to be cleared up. The final section of his description of the Tabuan Rail, beginning "This varies in having . . ." has confused later writers into believing that Latham was suggesting variability from black to brown in this form. However, in his later work, the *General History of Birds* (1824), Latham separated this as "Variety A", saying that it referred to a specimen from the Island of Tanna. This seems likely to be simply an immature specimen of the Sooty Rail from that island and can therefore be dismissed from consideration of Miller's Rail. This description may be derived from the Manuscript compiled by William Anderson, then in the possession of Banks and now in the BM (NH), to which Latham had access and of which he made use. Latham would have described it as a variety because "the vent white, transversely barred with black lines" is not visible in Georg's plate (Medway, pers. comm.).

The evidence from the Cook Islands

Further support for the existence of two small rails on the same island, one related to *Porzana tabuensis* or a form of it and the other related to *Nesophylax ater*, was provided by Steadman (1985) in a survey of the birds of Mangaia, southern Cook Islands. He referred to the bird called by the natives "Mo'o mo'o", a small black rail which lives near the taro swamps. Although he did not manage to see one alive, Steadman believed that it was probably *Porzana tabuensis* (bones similar to which he found on the island) or an endemic derivative thereof. The Mangaian described it as very rare. Steadman also found wing and leg bones referable to a different species, which he plans to describe as new (Steadman, in press). Based on the leg bones, this rail was larger than *P. tabuensis* but had wings too small for flight and seemed to be very similar to *N. ater* (which Steadman regards as congeneric with *Porzana*), but with even more reduced wings. He adds significantly:

The Mangaian fossils suggest that perhaps two species of *Porzana* once inhabited many of the islands in eastern Polynesia, the smaller being *P. tabuensis* or its derivative, and the larger, more flightless one being very similar to *P. ater*.

Mangaia, with an area of 20 square miles and a maximum elevation of 170 m, is much smaller than Tahiti, the largest island in eastern Polynesia with a diameter of 33 miles and an elevation of 7321 feet, and so the

probability that two small rails occurred on Tahiti is considerably strengthened by the findings of Steadman. The discovery of bones of a rail of the *Nesophylax* group on Tahiti would strengthen the case still further.

CONCLUSION

It seems likely that the Otaheite Rail *Rallus tahitiensis* and *Rallus minutus* represent the rail now known as *Rallus tabuensis*, and in the interests of nomenclatural stability it would be unfortunate if the name were now altered. Probably Miller's *Rallus nigra*, Latham's Tabuan Rail, Gmelin's *Rallus tabuensis* and Georg Forster's plate all represent another species, now extinct, related to *Nesophylax ater* of Henderson Island. As Miller's name is the oldest one, the extinct bird from Tahiti is best called *Nesophylax niger* (Miller).

ACKNOWLEDGEMENTS

I am grateful to James Monk, David Medway and Storrs Olson, who all read drafts of this note and provided valuable assistance.

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SHORT NOTE

A taxonomic redescription of the New Zealand Falcon, *Falco novaeseelandiae* Gmelin, 1788

ABSTRACT

The New Zealand Falcon is redescribed to clarify the confused original description, the existence of possible type specimens and the nomenclature of possible subspecific taxa. A synonymy, redescription and differential diagnosis are given.

INTRODUCTION

Gmelin (1788) based his original description of *Falco novaeseelandiae* on that of Latham (1781). Both authors confused the plumages, describing a juvenile as 'male' and an adult as 'female'. Until quite recent times the adult and juvenile plumages have been confused (Brown & Amadon 1968). Also many authors, such as Buller (1873) recognised two species or subspecies (e.g. Swann 1922) on the basis of body size. The large pale form known as the 'Quail Hawk' was separated from the smaller, darker 'Bush Hawk' using a succession of Latin synonyms.

In addition, the identity of the surviving type specimen is uncertain and so both the nomenclature and the description of the New Zealand Falcon require clarification.

CLASSIFICATION

Order: Falconiformes

Suborder: Falcones

Family: Falconidae

Genus and species: *Falco novaeseelandiae*

SYNONYMS

New Zealand Falcon Latham, 1781, Gen. Syn. i. p. 57.

Falco novae Seelandiae Gmelin, 1788 (ex Latham), Syst. Nat. i. p. 268.

Falco brunnea, Gould, 1838 (not Bechstein 1805), Synops. Birds Austr. pt iii. p.42.

Falco australis, Hombron and Jaquinot, 1841 (not Gmelin 1788), Annal. Sci. Nat. Paris, 2nd Series, vol. xvi p.32.

Hypotriorchis novaezealandiae, Gray, 1844, Gen. of Birds i. p.20.

Falco harpe, Forster, 1844, Descr. Anim. p.68.

Hieracidea novae zealandiae, Kaup, 1847, Isis p.80.

Falco ferox, Peale, 1848 (not Gmelin 1788), U.S Expl. Exped. p.67.

Harpe novae-zealandiae, Bonaparte, 1855, Comptes Rendus, xli. p.652.

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Harpa novae zealandiae, Sharpe, 1874, Cat. Brit. Mus. Birds vol. 1 p.372.

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Falco novaezeelandiae, Brown and Amadon, 1968, Eagles, Hawks and Falcons of the World, vol. ii p.808.

DESCRIPTION

The species description is based on the specimens documented by Fox (1977).

Adult male: Crown, nape and back blue-black, barred rufous or grey on scapulars and upper wing and tail coverts. Tail black, 7-11 narrow white separate bars, buff tip. Primaries black, 8-10 broad white bars on inner webs. Secondaries black, barred grey. Wing tips rounded, primary 8 (third from leading edge) longest. Black malar stripe, buff cheeks and superciliary stripe. Throat fulvous white with narrow white shaft line. Crop and breast white or cream, streaked vertically black or dark brown. Flanks loosely barred horizontally black with cream ocellations. Abdomen cream, streaked rufous. Undertail coverts rufous cream. Thighs rufous, streaked brown. Bill black with tomial tooth, base blue-grey. Cere, circumorbital ring and legs deep lemon yellow, richer during breeding season. Claws black. Irides dark brown.

Adult female: Larger than, but similar to, adult male. Crown and nape often less blue. Soft parts a paler yellow.

Immature: Variable. Both sexes similar apart from size. Back plain black, initially blue-black, fading in winter to dark brown. Some barred dorsally like adult. Black crown and malar stripe, buff cheeks and superciliary stripe. Throat fulvous white, finely streaked black. Crop and breast obscurely marked dark brown and fulvous, some paler. Abdomen cream, finely streaked brown. Undertail coverts dull brown and rufous. Thighs dull rufous brown, streaked dark brown. Tail black, 0-10 narrow white interrupted bars, often only faint. Soft parts olive green, sky blue or dull grey, changing to yellow at about 9 months. Claws black. Irides dark brown. Body moult to adult begins at 6-10 months. Full adult plumage reached by 16 months.

Nestling: Hatched with eyes and ears open, irides dark brown, legs pink, fine white natal down. At 11-12 days a thick, woolly, grey second down conceals natal down. Feathers appear from 14 days.

Eggs: Variable, pale to very dark pink when fresh, speckled rusty brown. Ovoid. Length 44.9 - 54.3 mm, breadth 34.4 - 39.6 mm, fresh weight 41 - 45 g, n = 5 Eastern Falcon eggs.

POLYMORPHS

The New Zealand Falcon apparently has three forms, differing in size, colour, habitat and range. For data on these forms (Eastern, Southern and Bush Falcons) see Fox (1977).

DIFFERENTIAL DIAGNOSIS

Found only in New Zealand and Auckland Islands. The tail: standard wing length ratio is larger than in all other *Falco* species.

TYPE SPECIMEN

Medway (1976), on historical grounds, considered No. 49692, now in the Naturhistorisches Museum, Vienna, as being a surviving type of the female of Latham's New Zealand Falcon and Gmelin's *Falco novae Seelandiae*, from the Leverian Museum. But the Leverian specimen described by Latham (1781:57) had 'no apparent bands on the tail', whereas No. 49692 has four cream-coloured bands and a fifth faint band on the tail (H. Schifter, pers. comm.). The identification of No. 49692 as a Latham type is therefore questionable. Latham gave his type locality as Queen Charlotte Sound.

REMARKS

Pending further data on the Southern Falcon, the New Zealand Falcon has been treated as a single variable species. Because polymorphs differ so much ecologically it is important for field workers to state the form and locality when studying this species. Adult females No. 19797 (Eastern Falcon, North Canterbury), No. 13067 (Southern Falcon, Adams Island, Auckland Islands) and No. 17674 (Bush Falcon, Whiteman's Valley, Wellington), all in the National Museum, Wellington, are representative samples of each form, although not formally designated as type specimens.

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THE LITTLE BARRIER ISLAND SNIPE

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ABSTRACT

A single snipe was captured on Little Barrier Island in 1870. The history of this specimen is traced up to its designation as the holotype of *Coenocorypha aucklandica barrierensis* 85 years later. Other records of snipe in the Auckland area seem to refer to the one Little Barrier specimen or to other species of wader.

Snipe apparently disappeared from Little Barrier Island in the 1870s, when cats became established, but apparently were rare before then. References by R.H. Shakespear to "snipe" on Little Barrier Island are given, but are regarded as probably referring to other species.

THE SPECIMEN FROM LITTLE BARRIER ISLAND

On 10 October 1870, Captain F.W. Hutton exhibited a specimen of snipe to a meeting of the Auckland Institute (Hutton 1871a). The bird had been "captured at the Little Barrier Island by Captain Bennett, of the schooner *Mary Ann*, and presented to the institute by Mr. T.B. Hill". Hutton stated that:

Two specimens only were seen, of which the one now exhibited was caught alive but died in confinement; the other escaped. It answered tolerably well to the description of *Gallinago pusilla*. Buller, although it appeared rather larger than that bird and somewhat different in colour. But as Buller's description was from the single specimen captured at the Chatham Islands, much importance could not be attached to the discrepancies, which were of a trivial nature.

Mr. Baber stated that he had seen this bird in Hobson's Bay, Auckland some years ago.

Buller (1869) had described his "Little Snipe" from the Chatham Islands only the year before, and no skins of Chatham Island Snipe were available to compare with the new specimen. The snipe was added to the collection of the Auckland Institute and Museum, then curated by T. Kirk (Curator, 1868-1874 - Powell 1967).

The next mention of the snipe in the records of the museum was in a large catalogue entitled *New Zealand and Foreign Vertebrates*. This register (the "Blue Book" of Gill 1984) was evidently made in 1898. The entry is in T.F. Cheeseman's handwriting, and reads:

Number	When Received	Name	From whom received	Locality
869	In Mus 1874	<i>Gallinago pusilla</i>	no history	Little Barrier Island
872	1870	<i>Gallinago pusilla</i>	Presented by Mr T.B. Hill	Raglan District

Cheeseman was Curator, Auckland Institute and Museum, from 1874 to 1923. The crossings-out were by Cheeseman (G. Archey, unpublished letter to E.G. Turbott, 9 March 1959). Archey interpreted the crossings-out as showing that Cheeseman "evidently thought *subsequently* that [869] was the Little Barrier specimen" (Archey's emphasis).

All subsequent records of snipe from the Auckland region were apparently based on the 1870 specimen, although there was some confusion in the literature. Cheeseman (letter to Buller, 2 June 1884) wrote "I have a specimen of *Gallinago pusilla* in the Auckland Museum, obtained by Mr. T. B. Hill in the Raglan district many years ago; but I have never met with the bird myself" (Buller 1888: 34). This was almost certainly the bird mentioned by Hutton (1871a) because the donor and the date (in the catalogue) are the same. The locality "Raglan District" was apparently attributed to the specimen in error (see below).

Buller (1888: 33) recorded *Gallinago pusilla* from the Chatham Islands, and "...the next record of its occurrence was from the Gulf of Hauraki, near Auckland" – then he went on to quote Cheeseman on the Raglan specimen. Buller's reference to a bird from the Hauraki Gulf must, therefore, have been based on either Hutton's (1871a) original report or Hutton (1871b), where the range of *Gallinago pusilla* was given as "Little Barrier Island and Chatham Islands".

Canon H. B. Tristram (1893), writing from England, further confused the issue with his apparent lack of local geographical knowledge. Tristram, referring to *Gallinago pusilla*, wrote: "Very few specimens have been received, but the species has twice been obtained in New Zealand (to which it is evidently an occasional wanderer): once by Sir James Hector in the Gulf of Hauraki, and once by Mr. F. [sic] B. Hill on Little Barrier Island." In 1893, the only published reference linking Mr Hill with a snipe from Little Barrier Island was Hutton (1871a), which Tristram must have seen. The reference to Sir James Hector is confusing, but I suspect that the answer can be found in the first paragraph on Chatham Islands Snipe in Buller (1888): "In 1868 I received from Dr. (now Sir James) Hector a small Snipe obtained by Mr. Charles Traill during a visit to the Chatham Islands". The mention of "the Gulf of Hauraki" comes later in the same paragraph. It is apparent that Tristram was unaware that "Little Barrier Island" and "the Gulf of Hauraki" could be referring to the same place; I further suggest that Tristram confused the bird obtained from the Chatham Islands via Hector with the locality "the Gulf of Hauraki".

The comment by Mr Baber (Hutton 1871a) that he had seen "*Gallinago pusilla*" in Hobson's Bay was repeated by Oliver (1955: 275) when describing the Little Barrier Snipe *Coenocorypha aucklandica barrierensis*:

Snipe, possibly belonging to this subspecies, were reported as having been seen by Mr. J. Baker [sic] earlier in the century on the shore of Hobson Bay, Waitemata Harbour.

I agree with Turbott (1961) that Baber was probably referring to Arctic migrant waders.

The Little Barrier snipe specimen received little attention for 60 years after Tristram's (1893) comments. During this time the bird specimens in the Auckland Institute and Museum were renumbered, and a new catalogue, *New Zealand Mammals and Birds*, was filled in by L. T. Griffin, apparently between 1919 and 1922 (Gill 1984). Griffin was museum assistant and preparator of specimens from 1908 to 1922 and assistant curator from 1923 to 1935 (Powell 1967). The entries in this catalogue read:

Number	When Received	Name	From whom received	Locality	Remarks
185		Gallinago pusilla no sex		Little Barrier Island	AV 78.1
186	1870	Gallinago pusilla	Presented by: -T.B. Hill	Raglan District	AV 78.2. 1389.1 See Proc. NZ Inst. vol.3, p. 86.

The crossing-out, arrow, and comments in the remarks column were made by E.G. Turbott in 1953 (unpublished letter to Archey, 15 April 1959). Turbott was Ornithologist at Auckland Institute and Museum from 1946 to 1957 (Powell 1967).

Griffin started to transcribe all the details from *New Zealand Mammals and Birds* to cards in 1924, and gave each specimen an "AV" number (B.J. Gill *in litt.*).

In 1953, W.R.B. Oliver (unpublished letter to Turbott, 24 April) asked about the snipe from "the Raglan District" mentioned by Buller (1888) and asked to borrow the specimen from the Auckland Institute and Museum. On receiving the specimen, Oliver realised that it was distinct from the other forms of New Zealand snipe, and that it may have been the one mentioned by Hutton (1871a) from Little Barrier Island. Oliver's comments prompted Turbott (unpublished letter to Oliver, 3 August 1953) to search through the old consecutive catalogue and discover the mix-up in labelling of "185" and "186". Turbott and Oliver agreed that 186 was the bird mentioned by Hutton (1871a), and Turbott suggested that the locality "Raglan" had been given in error by either Cheesman or, more likely, Kirk, who was Curator in 1870.

If 186 was the Little Barrier Island specimen, why was 185 labelled "Little Barrier Island"? Turbott (unpublished letter to Oliver, 3 August 1953) suggested that "185 was a stray bird in the collections and that the locality 'Little Barrier Island' had been attached to it by mistake", and posted both specimens to Oliver.

Oliver (unpublished letter to Turbott, 9 August 1953) recognised 185 as an Auckland Island Snipe *C. a. aucklandica*:

The large one is aucklandica so doesn't alter the position as regards the small one. It does in a way confirm the locality of the small specimen as Little Barrier Island, as obviously this locality is wrong for the large bird but presumably was intended for the small bird, Cheesman evidently forgetting which one came from Little Barrier Island. Raglan is I suppose Hill's address. Taking all things together I think it is safe to say that the small specimen which does not definitely agree with any described subspecies, comes from Little Barrier Island, was collected by Captain Bennet [*sic*], and given to the Museum by T.B. Hill.

It was at this stage that Turbott made the changes to Griffin's entry in the catalogue (Turbott, unpublished letter to Archey, 15 April 1959).

Oliver (1955: 275) described the Little Barrier Snipe as a new subspecies, *C. a. barrierensis*, based on the unique specimen in the Auckland Institute and Museum. The specimen (now AV 1389. 1, Fig. 1) is most like the Stewart Island Snipe *C. a. iredalei* in size (Table 1). The bird, which had

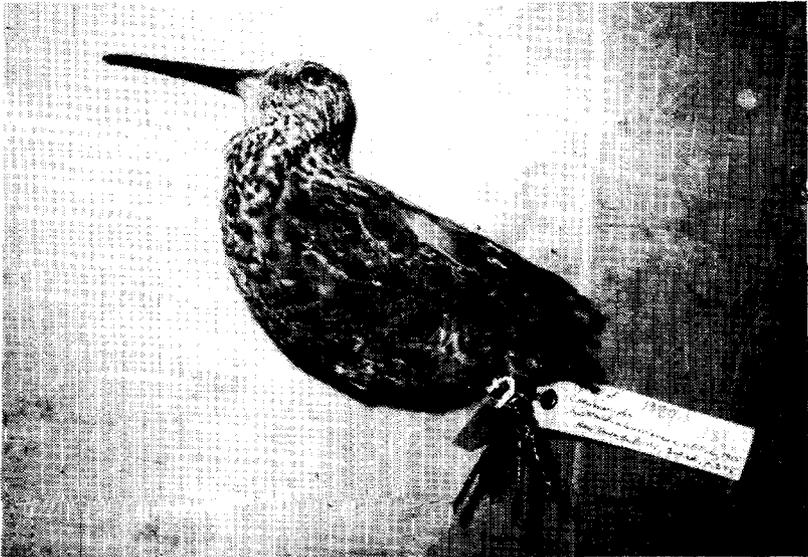


FIGURE 1 — The Little Barrier Island snipe, Auckland Museum AV 1389.1

been mounted as a display specimen, is very faded on its right side; the left side may also be somewhat faded. Compared with *C. a. iredalei*, the Little Barrier snipe has a greater amount of buffy white on the chin and throat, has light, mid-brown crescentic subterminal bars from upper throat to mid-belly, and has the lower belly unbarred. Stewart Island Snipe have a heavy gorget of blackish blotches extending from upper throat to lower breast, and their belly is buffy white with some blackish bars. Overall, *C. a. barrierensis* has finer, lighter markings on the undersurface, compared with the bold gorget of *C. a. iredalei*.

TABLE 1 — Comparison of measurements of the holotype of *Coenocorypha aucklandica barrierensis* (LBI) with measurements from skins of *C. a. iredalei* in Canterbury Museum, National Museum, and British Museum (Natural History). All measurements in millimetres.

	L B I	<i>C. a. iredalei</i>			
		\bar{x}	n	SD	Range
Culmen	51.9	53.1	11	3.40	46.1 - 58.3
Tarsus	21.3	24.0	7	0.64	23.2 - 25.0
Mid-toe and claw	29.0	33.0	5	1.11	32.2 - 34.9
Tail	32.0	39.8	6	1.83	36.7 - 41.6
Wing	103	108	7	2.8	105 - 113

There was further correspondence on the Little Barrier snipe between Turbott (then Assistant Director and Keeper of Zoology, Canterbury Museum) and Sir Gilbert Archey (Director, Auckland Institute and Museum, 1924-1964) from February to April 1959. Turbott was working on a manuscript on the birds of Little Barrier Island (published in Hamilton 1961) in which he included an account of the snipe. This correspondence culminated in Turbott writing a new label for the Little Barrier specimen and Archey assigning it a new catalogue number as the holotype for *C. a. barrierensis* (Gill 1983). After 89 years in the collections of Auckland Institute and Museum, the Little Barrier snipe had been recognised as distinct and the true collection details were entered on its label.

Oliver was quite correct when he guessed that Raglan was Hill's address. Turbott succeeded in tracing T. B. Hill through the Waikato Branch of the Royal Society and the Raglan Old Settlers' Association; the following information is from unpublished letters to Turbott from C. G. Hunt in February and March 1962.

Thomas Boucher Hill owned a chemist's shop in Mt Eden (Auckland) and bought a farm in the Te Mata district near Raglan in the late 1860s. He eventually sold his Mt Eden business and set up as a chemist in Raglan township, where, in the absence of a local medical practitioner, he was in effect the local doctor. Mr Hill had many interests, not least of which was a keen interest in natural history. He died in Raglan about 1920, aged 88, and is buried in the Raglan graveyard.

One mystery remains: what was the provenance of 869 (now AV 77.4), an Auckland Island Snipe with no collection data, that once bore the locality "Little Barrier Island"?

SNIPE ON LITTLE BARRIER ISLAND

Although the unique specimen of *C. a. barrierensis* has received sporadic attention over the years, little is known about the fate of snipe on Little Barrier Island. Turbott (1961) suggested that snipe became extinct owing to the introduction of cats.

When cats were introduced to Little Barrier I. is uncertain. They were certainly present by 1885, along with wild pigs and dogs (Reischek 1886b, 1886c, 1886d, although Hamilton 1961: 134 suggested that pigs on Little Barrier Island were confined to a small area of coastal forest behind Ngamanaururu Bay). Reischek visited Little Barrier Island five times between October 1880 and May 1885 (Reischek 1887a). Referring to the Stitchbird (*Notiomystis cincta*), Reischek (1886a) wrote:

These very rare birds will soon disappear, even from these lonely wilds, owing to the domestic wild cats, which are very numerous, and commit great havoc among them. . . .

There is circumstantial evidence that cats became established on Little Barrier I. in the 1870s: Hutton (1869) reported Saddlebacks (*Philesturnus carunculatus*) as very common on a 4-day visit in December 1867, whereas Reischek (1887b) found them to be rare in October 1880, still scarcer in October 1882, and not at all subsequently. Turbott (1947 and 1961) argued

that cats were responsible for the extinction of Saddleback on Little Barrier I.; this is supported by the successful reintroduction of Saddleback to the island in 1984, after the eradication of cats by the NZ Wildlife Service in 1980 (Veitch 1985).

Veitch (1985) gave the date of cat introduction as "about 1870", on the strength of Hutton's (1869) and Reischek's (1887b) observations (C.R. Veitch, pers. comm.).

If cats did become feral on Little Barrier I. in the 1870s, this agrees well with the presumed date of disappearance of snipe, the only record of snipe on Little Barrier Island being the two seen in 1870 (Hutton 1871a). However, snipe were probably rare on Little Barrier Island even before cats were present, as Layard (1863) and Hutton (1869) did not record snipe. Reischek (an avid collector of rare birds) made no mention of seeing snipe during his "ten months" on the island between 1880 and 1885.

I suggest that snipe were scarce on Little Barrier I. in 1870 because of predation by kiore (*Rattus exulans*), and perhaps wild pigs and dogs. No other form of New Zealand snipe is known to have survived in the presence of any species of rat (Miskelly 1987). Perhaps kiore had not, in 1870, been on Little Barrier I. long enough to eliminate snipe. The introduction of cats would have sealed the fate of snipe.

However, there are records of "snipe" from Little Barrier I. long after cats were introduced.

Little Barrier I. was purchased as a reserve for the preservation of rare birds in 1894 (Hamilton 1961). The last of the previous Maori owners were removed in 1896. R.H. Shakespear, appointed curator of Little Barrier Island Reserve by the Auckland Institute, was on the island from 19 January 1897 until 28 February 1910 (Hamilton 1961). During his 13 years on Little Barrier I., Shakespear kept a meticulous diary, which included many natural history observations, and he also corresponded frequently with T.F. Cheeseman (then Curator of Auckland Institute and Museum and Shakespear's superior). These unpublished diaries and letters are in the Auckland Institute and Museum Library; I thank Ian Thwaites for permission to quote from them.

Shakespear made several references to "snipe" or snipe-like birds; these are quoted as written:

Wednesday 29 September 1897 (diary)

Gloriously fine day...went around in the boat to the west side in order to collect the remains of the whale...we also saw a beautiful little snipe. he was very tame & allowed us to approach within a few feet. he was feeding on the whale. the top of his head was a rich brown. I saw no white stripe.

Monday 4 October 1897 (letter)

...They had very rough weather down here & never expected to see me. there had been an unusually severe Easterly gale with high tides & there was a heavy sea running here on Monday [27 September]...I am sorry to say the whale was washed away, but so far we have managed to collect most of the bones...I noticed a most beautiful little snipe feeding on the remains. he was a real snipe, & very tame. his markings were rather more like a woodcock than a snipe. yesterday when we put him up he flew up Turner's Gully, so perhaps he may remain here.

There used to be a snipe many years ago indigenous to the island but this one seems to me more like the Auckland Id. species, however he is a very welcome visitor & his flight made me think of other days, he had a reddish brown patch on his head - & his markings were much darker than the ordinary snipe more mottled on the wing feathers.

Wednesday 27 October 1897 (diary)

Fine day. S.S.W. breeze...Saw a large snipe today, a different variety to the one we saw by the whale, this bird seemed rather larger than the English snipe.

Friday 29 October 1897 (letter)

I told you that we saw a beautiful little snipe by the whale's remains, it stayed about for some time, the patch on the top of its head was a rich dark brown, yesterday I saw another snipe he was down by the boathouse, he was a far larger bird, & breast & wing feathers lighter, he got up just like an ordinary snipe & gave the same cry, the boy saw him feeding up Turner's this morning close to the creek, I think he is altogether another variety."

Monday 1 November 1897 (diary)

It commenced to rain this morning about 5 a.m. & continued until 9 a.m...I saw the bird that I thought was a snipe, It is far larger than the real snipe which we saw at the carcass of the whale.

This is a very handsome bird & very tame, I am going to try & get a photo, about 8 inches long, strong pointed beak, about 1 1/2 inches long, palish brown with greyish white tint which ran through all the feathers, so that looking at him you would say he was greyish white deepening into a rich brown on the back, Sides of the throat whitish grey, brown patch on the top of the head, but not nearly of such rich a hue as the little snipe.

Thursday 6 October 1898 (diary)

Squally morning, Wind S.W. fresh breeze.

The children saw a bird which they describe as something like a snipe with a very long beak, it was on the spit, probably I shall come across it tomorrow.

Friday 7 October 1898 (diary)

Cloudy morning, Westerly wind, fresh breeze.

In the evening we caught a bird something like a large curlew, it was nearly dead with exhaustion & want of food, it tried to swallow the worms we gave it, but could not & died during the evening so I shall put it in spirits for Mr. Cheeseman.

Monday 20 November 1899 (diary)

Weather, raining hard, Wind Northerly.

I was along at the spit in the morning & again at sunset, I flushed the Little Barrier Snipe, & he went up Turner's Crk. (he has been about now for about 10 days).

Sunday 14 September 1902 (diary)

Weather - stormy, sky windy, scud coming over fast from W.S.W. Wind W. strong breeze, glass inclined to rise, some sea on the west landing. A specimen of the "Little Barrier Snipe" was on the lawn this morning he was very tame, & I had a good look at it through the glasses, it was very tame & in the evening was still on the lawn at the back of the house.

Sunday 19 October 1902 (diary)

Weather, squally, sky cloudy, thick over the mainland, Wind, Sou West: strong breeze, fair sea on, glass low & steady...Blowing & raining all day, heavy sea running...A whip of snipe about 15 were on the flat yesterday, & today, I have not seen any like them before, They are very handsome little birds, I watched them for some time through my field glasses.

Wednesday 2 November 1904 (diary)

Weather, improving, sky, cloudy with sunshine. Wind, Sou West moderate breeze...The "snipe" still remain round the house.

It is apparent than Shakespear used "snipe" as a general term for shorebirds. I suggest that most, if not all, of the sightings refer to stray Arctic or local waders. First, all the records are from September to November, when Arctic waders are arriving in New Zealand from their breeding grounds. Secondly, all but one of the records followed bad weather and strong winds – likely conditions for migrants to get blown off course. Thirdly, all of the sightings were from the coast or around Shakespear's house at Te Maraeroa – likely habitats for vagrant waders.

From my own experience with New Zealand snipe and Little Barrier Island, I suspect that snipe would have survived longest in areas of sedge at the mouths of streams and wherever damp, forested gullies had dense ground cover. New Zealand snipe are not known to feed in the open during the day and so would be unlikely on a lawn. Shakespear also mentioned flushing snipe and having them fly considerable distances. It is unusual for extant forms of New Zealand snipe to fly more than 30 m if flushed during the day (pers. obs.), although *C. a. barrierensis* was apparently the form of *Coenocorypha* that flew best (Miskelly in prep.).

If Shakespear was not seeing Little Barrier Snipe, what was he looking at? Six species of waders have been recorded as stragglers to Little Barrier I. Hutton (1869) and Reischek (1887a) recorded Variable Oystercatcher (*Haematopus unicolor*), Turbott (1961) recorded Banded Dotterel (*Charadrius bicinctus*), Far-eastern Curlew (*Numenius madagascariensis*), Bar-tailed Godwit (*Limosa lapponica*) and Pied Stilt (*Himantopus himantopus*), and Veitch (pers. comm.) reported Least Golden Plover (*Pluvialis fulva*); other species are likely also.

The bird seen on 29 Sep 1897 may have been a Sharp-tailed Sandpiper (*Calidris acuminata*), judging by its small size, the reddish-brown top of its head and "no white stripe". The larger, greyish "snipe" with a 1½ inch bill of 27 Oct - 1 Nov 1897 may have been a Knot (*Calidris canutus*) or New Zealand Dotterel (*Charadrius obscurus*). The "large curlew" caught on 7 Oct 1898 cannot be traced in the collections of Auckland Institute and Museum (B.J. Gill, pers. comm.).

Shakespear's other records are too vague to allow speculation as to identity, but the 15 birds seen on 19 Oct 1902 were obviously not snipe, which do not flock. The balance of evidence suggests that snipe disappeared from Little Barrier I. soon after they were discovered in 1870.

ACKNOWLEDGEMENTS

I am indebted to Dr Brian Gill (Curator of Birds, Auckland Institute and Museum) for allowing access to the Little Barrier snipe specimen, providing copies of the Oliver/Turbott, Turbott/Archey and Turbott/Hunt correspondence, and answering many queries about the early days of the Institute. I am very grateful to Ian Thwaites and Peggy Sayes (Auckland Institute and Museum Library) for locating the snipe references in Shakespear's diaries and letters and giving permission to quote from them.

The manuscript was improved by comments from Brian Gill, Barrie Heather, Ian McLean, Graham Turbott and Richard Veitch. Funding was provided by the Department of Conservation (formerly Department of Lands & Survey) and the Royal Forest & Bird Protection Society.

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SHORT NOTE

Status of the weka *Gallirallus australis* on Cape Brett, Bay of Islands

On 21-24 February 1987 I visited the Cape Brett area to ascertain the status and distribution of the weka population resulting from the birds liberated at Rawhiti between 1967 and 1972 (Edgar 1972, Robertson 1976). Figure 1 summarises the locations where most wekas were found by Robertson in 1976, the locations where wekas were seen or heard in this survey, the probable routes of spread since 1976, and the area I traversed during this survey.

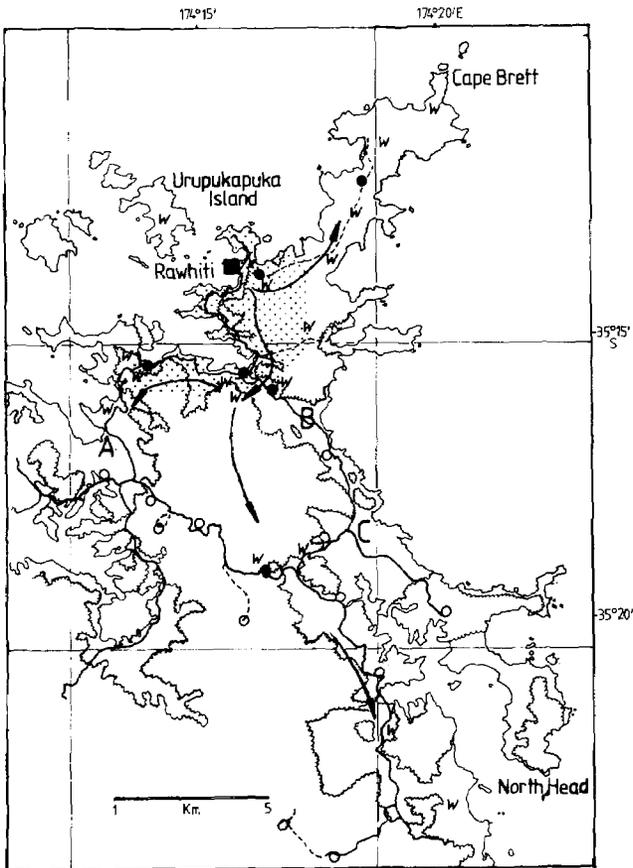


FIGURE 1. Cape Brett weka distribution and probable routes of dispersal.

-- = Survey route traversed on foot, — — = Survey route traversed by car.
 A = Clendon Cove, B = Elliot Bay, C = Ngaiotonga, → = Proposed dispersal route, W = Weka located, ● = Location from which wekas were located, ○ = Location where no wekas were located, ■ = Weka liberation point. Shaded area represents the range of the majority of the population in 1976 (after Robertson 1976).

Results show a considerable spread of wekas and indicate changes in density in the last decade. Robertson found that the highest concentration of wekas was around Rawhiti in 1976, but I found the highest density at Waipiro Bay, 10 km by land to the south-west of Rawhiti. In 1976 Robertson estimated the number of wekas to be more than 95, because he considered that many wekas were not taking part in 'spacing call' (Beauchamp 1987) choruses, and he had not surveyed the total range of the birds (North Head to Cape Brett). I consider the present population to be no more than 400 birds. Weka density is probably being influenced by cyanide poisoning for possums because poison laid in the same way is known to have been partly responsible for major reductions (> 40%) in the number of resident territorial wekas at Double Cove in the Marlborough Sounds over the last 6 months.

My survey also indicated that wekas were spreading south, but had been stationary in the north-west, at Clendon Cove, since 1977 (Calvert 1977). Over the past 18 months occasional birds have been seen at Oakura and Punaruku (J. Gardiner, pers. comm.). The spread of wekas appears to have been hindered by the relatively pure grassland areas at Clendon Cove, Elliot Bay, and Ngaiotonga. Consequently, wekas have not spread on to the Russell peninsula and few have been recorded on the Whangaruku peninsula (Robertson 1976). The Bay of Islands Maritime Park Board also released wekas on Urupukapuka Island, and subsequently birds apparently spread from Urupukapuka Island to Motukiekie Island (Crockett 1972, Goodwin 1972). They are still present on Urupukapuka Island, and birds liberated nearby at Opua before 1978 (Calvert 1978) are still found in an area between the township and the tip (K. Baird, pers. comm.).

In the past, concern has been expressed about the spread of this population and the likely effects on the recruitment of Brown Teal (*Anas aucklandica chlorotis*) (Ogle 1982). This needs to be monitored, but there remain relatively numerous and well-distributed populations of Pheasant (*Phasianus colchicus*) and Brown and California Quail (*Synoicus ypsilophorus* and *Lophortyx californica*) in the areas where wekas are found, which indicates that wekas are not having a major impact on birds they were reported to have reduced in other parts of New Zealand (Liffiton 1889).

There is also some general concern about the status of the weka throughout the North Island, especially after a recent drought reduced and split the population in the north-eastern North Island, and recovery over much of the area during the past 3 years has been poor (Beauchamp, unpubl. data). This major reduction took place rapidly, and was not recognised until it was well advanced. Surveys are required on the current status of other Northland weka populations, to enable assessment of the impact of similar natural catastrophies, especially as the reasons for the rapid disappearance of weka from the Waipu district about 1941 and around Whangarei in 1952 (McKenzie 1952, 1971, Gee 1956) are unknown. Careful monitoring may establish the factors responsible for weka fluctuations and rapid disappearances.

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REVIEW

Drawing Birds - An RSPB Guide, by John Busby (Christopher Helm).
Distributed in New Zealand by Benton Ross Publishers Ltd.

Many readers of "Birds", the RSPB magazine, will already be familiar with the illustrations of John Busby. A friend and pupil of the late Eric Ennion, Busby is very much his natural successor. Born in 1928, Busby's work continues the tradition of studying by direct observation from nature with resulting vitality and spontaneity. Busby is highly critical of the pseudo-scientific approach of some illustrators, though his own approach to painting is intellectual. He has very clear views about the painting of wildlife, thinking that the subject of "truth" is often confused. He discerns two kinds of truth — one that is to do with facts that can be measured and recorded, the other revealed only through the personal interpretation of the artist's experience of reality. To submerge this latter personal truth in a saturation of objective detail is not the business of art and in fact the much sought-after authenticity is lost because the effect is so contrary to the way in which we perceive wild birds in their environment. This philosophy governs the contents of the book. He discusses such matters as simplifying the difficulties of drawing live birds — basic anatomy, flight, colour and composition. Perhaps the greatest value of the book to a New Zealand reader is that it brings together examples of the work of many leading contemporary European wildlife illustrators, together with a brief curriculum vitae; these include Lars Jonsson, Keith Brockie, Peter Partington and Mick Manning. At \$62.95, it is however too expensive for all but the most serious students of both art and ornithology.

Geoff Arnold

CLASSIFIED SUMMARISED NOTES, NORTH ISLAND

1 July 1986 to 30 June 1987

Compiled by BRUCE R. KEELEY

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Abbreviations: asl above sea level; BoP Bay of Plenty; B Beach; E Estuary; FoT Firth of Thames; F Forest; FP Forest Park; H Harbour; HB Hawkes Bay; HQ Headquarters; imm/s immature/s; I Island; juv/s juvenile/s; Lag Lagoon; L Lake; NP National Park; Pen Peninsula; Pt Point; Res Reserve; R River; SF State Forest; SP Sewage Ponds; sp species.

NOTE: FoT winter census date was 19/7/87.

BROWN KIWI *Apteryx australis*

Poutu Pen, 1 in manuka 10/7/85 (PA). Tapora, juv reared at Auckland Zoo released on 12/7 (MJT).

BLUE PENGUIN *Eudyptula minor*

Whale I, heard at night 8-15/7 (BS). Rurima Islets, 4 offshore on 16/8; Mt Maunganui, heard at night on 2/8 (PCML).

DABCHICK *Podiceps rufopectus*

Aupouhi Pen survey, 13 in Jan (AVH); L Kereta. 22 incl. 2 young on 7/7 (JED, MJT), 29 on 31/5 (GAP). Straka's L, Waiwera, 1 on 13/7 (VJL)

and 26/1(RF). L Whatihua, Karioitahi, 2 chasing on 5/7 (JP). L Ngaroto, 6 on 11/6 (RD). Matata, 2 on 6/7, 3 on 21/6; uncommon in coastal BoP (LB, PCML). Putere (L Rotoroa), 1 pr with 2 young on 31/2; Ruapapa Rd, 3 on farm pond on 8/6; Whakaki Lag, 1 on 8/11, 5 on 1/6 (GAF). Long Ridge lake, HB, 2 on 25/1; Blackhead, 2 on roadside pond on 25/1 (BDH). L Wairongomai, 10, including pr carrying chicks, on 8/9 (BDH). L Horowhenua, 137 on 23/6 (WRJ). Foxton No. 1 Lake, 1 pr with 1 juv on 21/12, 5 on 19/4 (JLM, MM). Waikanae E, 1 on 8/3 (ATn)

HOARY-HEADED GREBE *P. poliocephalus*

Aupouri Pen survey, 1 in Jan (AVH)

AUSTRALIAN LITTLE GREBE *Tachybaptus novaehollandiae*

Aupouri Pen survey, 13 in Jan (AVH); L Kereta, pair with 1 chick on 7/2 (SD).

WANDERING ALBATROSS *Diomedea exulans*

Wanganui, 3 on 4/3 (GR, PFB, OT). Foxton B, 1 offshore on 30/12 (JLM, MM). Cook Strait, 1 on 8/3 (ATn).

ALBATROSS/MOLLYMAWK sp.

Foxton B. 2 passing north on 29/11, several on 14/3 (JLM, MM). Owhiro Bay, 1, probably *D. cauta*, 1 km offshore on 28/9/85 (JRC).

YELLOW-NOSED MOLLYMAWK *Diomedea chlororhynchos*

Lion Rock I, early May, 1 m from boat (SA). Astrolabe Reef, north of Motiti I, 2 subadults on 3/8 (LB).

GIANT PETREL *Macronectes* sp.

Waikato west coast, sightings 8 km SW of Raglan on 6/12, and Albatross Pt on 3/8 (ARP, ASR, JMR). Foxton B, 1 on 4/1, 2 on 14/3 (JLM, MM). Clifton, 1 offshore on 31/12 (CFMcR, KVT). Lyall Bay, 3 offshore on 13/7/85 (JRC).

ANTARCTIC FULMAR *Fulmarus glacialisoides*

Whangamata, 1 dead, being the only confirmed record of this sp. in BoP (PCML). Ocean B, HB, 1 flying overhead on 9/4 (ARG, KMW, LW).

CAPE PIGEON *Daption capense*

Rurima Islets, 2 offshore on 16/8 (PCML). Wellington H, 1 near Petone on 26/11 (JLM, MM).

GREY-FACED PETREL *Pterodroma macroptera*

Keri Hill, Papakura, undated, 1 found and later released at Karioitahi (AJG *et al.*). Whale I, c. 35 000 breeding pairs laying and incubating on 8-15/7 (BS). Mt Maunganui, birds at colony on 2/8; 1 found alive in street in NE gale on 25/1 (PCML)

KERGUELEN PETREL *P. brevirostris*

Puketitiri, HB, 1 dead on farm 35 km inland on 13/9 (NB McK, KVT).

COOK'S PETREL *P. cookii*

L. Barrier I, 300+ offshore on 23/1 and heard each evening 23-27/1 (PFB).

BLACK-WINGED PETREL *P. nigripennis*

Cape Maria Van Diemen, c. 100 offshore on 26/1 (GW). Ohope B, 2 found dead on 6/1/86, the first confirmed record for this sp. in BoP (JD).

LESSER BROAD-BILLED PRION *Pachyptila salvini*

Ohope B, 1 dead on 10/8 (WMH). Whangamata, 1 dead on 13/9 (HS). These are the first confirmed records for this sp. in BoP.

PRION sp.

Foxton B, 50 passing on 29/11, 1 on 31/12 (JLM, MM). Lyall Bay, c.100 offshore on 13/7/85 (JRC).

BLACK PETREL *Procellaria parkinsoni*

L. Barrier I to Sandspit wharf, c.4 seen; 1 passing Te Titoki Pt on 23/1 (PFB).

BLACK PETREL sp.

Foxton B, 2 passing on 29/11, 1 on 22/12 (JLM, MM).

FLESH-FOOTED SHEARWATER *Puffinus carneipes*

Ahipara Bay, many round boat on 1/2 (AVH). L. Barrier I to Sandspit wharf, c.50 on 23/1 (PFB). Raglan, up to 4 present, Sep-Jan ARP). Tolaga Bay, 11 round boat 8 km offshore on 11/1 (GAF).

BULLER'S SHEARWATER *P. bulleri*

Ahipara Bay, many round boat on 1/2; Whareana Bay, North Cape, 150 per minute heading north during 2½ hours, on 7/2 (AVH). L. Barrier I, 200+ offshore on 23/1 (PFB). Tolaga Bay, continuous movement of single birds 8 km offshore on 11/1 (GAF). Cook Strait, c.6 on 5/3 (ATn).

SOOTY SHEARWATER *P. griseus*

L. Barrier I, 1, 7.5 km SW on 27/1 (PFB). Foxton B, 20 passing on 22/12, 50 on 24/5 (JLM, MM). Owhiro Bay, 1 offshore on 28/9/85 (JRC).

FLUTTERING SHEARWATER *P. gavia*

L. Barrier I, 1 possible heard with Cooks Petrels at night on 24/1 (PFB). Rurima Islets, c.300 offshore on 16/8 (PCML). Tolaga Bay, many groups of up to 20 birds, 5-8 km offshore on 11/1 (GAF). Foxton B, 10 on 29/11, 20 on 30/12, 50 on 24/5 (JLM, MM). Lyall Bay, c.1000 offshore on 13/7/85; Owhiro Bay, c.3500 offshore on 20/4/86 (JRC). Wellington H, c.50 off Taranaki St Wharf, and 10 in Boathouse inlet on 30/7 (JLM, MM).

LITTLE SHEARWATER *P. assimilis*

Tolaga Bay, 1 at 8 km offshore on 11/1 (GAF).

WILSON'S STORM PETREL *Oceanites oceanicus*

Rurima Islets, 1 offshore on 6/4 (WMH).

WHITE-FACED STORM PETREL *Pelagodroma marina*

L. Barrier I to Sandspit Wharf, 12 on 27/1 (PFB).

AUSTRALASIAN GANNET *Sula bassana serrator*

Whareana B near North Cape, small flocks offshore flying north on 6/2 and 7/2; Ahipara B, 250 surface feeding among many gulls on 1/2 (AVH). L. Barrier I, 80 + feeding with shearwaters on 25/1 (PFB). Muriwai, colony active late Aug to Mar, including 40 nests on cliff top on 18/10 (GCE), and 88 nests at height of season (VJL); 7 nests on newly fenced lower cliff site (MJT). Coromandel Pen, 200+ heading north in formation between Stony B and Fletcher B on 29/12 (JVD). Opoutere, 3 entering harbour to fish on 30/5 (BB *et al.*). E Clive, c.200 flocking with juv Black-backed Gulls near large shoal of fish on 10/10; Napier, small groups along foreshore throughout year, sometimes seen fishing in Ahuriri E (KVT). Wellington H, seen all months except Aug, max, 3 on 31/3 (JLM, MM).

BLACK SHAG *Phalacrocorax carbo*

Manukau H winter census, 23; FoT census, summer 15, winter 56 (BB). Access Bay, 59 on 16/6 (BB *et al.*). Waikato, common on lakes and coast (MB *et al.*). Omokoroa, 8 on golf course on 14/6 (RC). Kaituna R mouth, 4 or 5 pr nesting in pine trees with Pied Shags; Kaituna Cut/Maketu area, 30 on 17/5; Matata, 16 on 19/7 (PCML). Waioeka E, 8 on 22/6 (WS). Wairoa R, 160 flying downstream at dawn on 26/5 (GAF). Porangahau E, 30 on 27/6 (JGH, RMH, BDH, HAR). HB river census: Ngaruroro R, 5; Tutaekuri R, 49; Tukituki R 36 on 25/10; Ahuriri E census, winter 35 on 5/7, summer 8 on 1/11; Tukituki E, c. 60 on 1/11 (PWT *et al.*). Manawatu E, 52 on 17/4; Whirokino, 20 nesting Nov/Dec (JLM, MM). L Horowhenua, 27 on 23/6; Ohau E, 16 on 25/2; Pukepuke Lag, 11 on 11/1 (LJD, MO, MO, WRJ). Pauatahanui Inlet, 31 on 11/8/85 (JRC). Wellington H, Petone to Ngauranga, maximum 8 on 7/4; Hutt R, maximum 6 at rail bridge on 7/4 (JLM, MM).

PIED SHAG *P. varius*

Auckland region, nesting colonies at L Barrier I, L Kuwakatai, McLean's Dam Taporā, Tawharānui, Whangaparāoa, Passage Rock, Western Springs, Hobson Bay (2), Panmure, Ponui I (MJT). Manukau H census, summer 133, winter 218; FoT census, summer 13, winter 44 (BB). Wairoa R. Clevedon, 22 on 1/1 (TRH). Waimai, 2 on 1/8 (SR). Kiritehere, reported on 12/10 (FN *et al.*). Kawhia H, 6; Aotea H, 4; Raglan H, 8 on 27/6 (ASR *et al.*). Kaituna R mouth, nesting colony in pines occupied all year; highest count 43 birds on 22/11; Matata, 21 at roost on beach on 6/7 (PCML). Otamarakau, 20 at roost on beach on 1/1 (PB). Rurima Islets, colony on largest islet on 16/8; Whale I., colony in MacEwan's Bay, large chicks in nests on 16/8; Whakatane R mouth, 15 on beach on 23/11 (PCML). Waioeka E, 14 on beach on 22/6; Opape, 56 on rocks offshore on 22/6 (WS).

LITTLE BLACK SHAG *P. sulcirostris*

Ngunguru R, 2 on 9/5/86 (BW). Wenderholm, fishing flocks of 168 on 15/7 (VJL). Waitemata H 141 in Little Shoal Bay on 15/8 (JED); Hobson Bay, 60 flying to roost on 20/5 (MJT). Manukau H census, summer 4, winter 191; FoT census, summer 16, winter 1, but 11 at Pukorokoro Creek on 22/3 and 5 at Access Bay on 6 and 17/5 (BB, AJG). Port Waikato, 61 in late winter (PF, AVS). L Rotoroa, Hamilton, 2 on 20/9 (MB); L Ngaroto, 12 on 13/10 (GB); L Karapiro, present on 12/6 (ARP, BS). Maungatapu, Tauranga, c.150 on power pylon on 14/6 (JD); Welcome Bay, 254 roosting on bank on 14/6 (LB). Wairoa R, 21 on 15/7; 2 groups of 27 and 42 on 14/6 (GAF). Porangahau E, 20 on 27/6 (JGH, RMH, BDH, HAR). Ahuriri E census, winter 11 on 5/7, summer 81 on 1/11; Tukituki E, c.130 roosting at low tide on shingle on 4/12 (KVT). Manawatu E, 72 on 17/4; Whirokino, 25 on 20/9; Foxton Loop, 1 on 2/11 (JLM, MM). L Horowhenua, 82 on 23/6 (WRJ). Wellington H, Petone to Ngauranga, present most months with maxima of c.20 on 5/8 and c.30 on 10/4 (JLM, MM).

LITTLE SHAG *P. melanoleucos brevirostris*

Aupouri Pen survey, 61 in Jan (AVH). Auckland, Hobson Bay colony had 11 nests in Nov (MJT). Manukau H census, summer 2, winter 25; FoT census, summer 5, winter 2 (BB, AJG); Access Bay, 10 on 17/5 (RBS). Taharoa, 15 nests on Harihari Stacks on 9/1 (SC). HB river census:

Ngaruroro R, 12, Tutaekuri R, 7, Tukituki R, 9 on 26/10; Ahuriri E census, winter 32 on 5/7, summer 24 on 1/11 (KVT). L Roto-o-kiwa, 16 including 2 nesting pairs on 27/9 (JLL, KVT). Porangahau E, 14 on 27/6 (BDH, JGH, RMH, HAR). Pauatahanui Inlet, 64 on 11/8/85 (JRC). Wellington H, Petone to Ngauranga, maximum 24 on 26/5 (JLM, MM).

SPOTTED SHAG *Stictocarbo punctatus*

Hauraki Gulf, 380 roosting on Skully's Reef on 2/1 (TRH). Thames coast, north of Te Mata, flocks of 355, 14, 543, 91, 51, totalling 1054, on 4/8 (VL). Kokonga West, south of Waikato R mouth, 47, 10 nests, 3 chicks nearly fledged on 16/11 (DMW *et al.*). FoT, Tarata Pt, c.220 on 29/6/86 (RBS, SMT); 200+ on 1/6, many with partial, and a few in full nuptial plumage (BB). Clive outfall, 20 on 13/7 (PWT, MT), showing breeding plumage by 3/9 (KVT). Manawatu E, 1 imm. on 15/3; Wellington H, Petone to Ngauranga, single birds on 31/10, 11 and 28/11, 8/1, 18/5 (JLM, MM).

LESSER FRIGATE BIRD *Fregata ariel*

Motuora I., one found dead on ridge on 8/2 (TRH).

WHITE-FACED HERON *Ardea novaehollandiae*

Whangaumu Bay, maximum 8 on 23/3/86; Whangaroa, 40+ on 21/4/86 (BW). Manukau H, census, summer 228, winter 259. Partial albino, as seen on 19/11/86 still present winter 87 at Gordons Rd, Waiuku (BB). FoT census, summer 245, winter 146 (BB, AJG). Coromandel Pen, Preece's Pt, 23 on 3/5; Matarangi Spit, 45 on 27/5 (AP). Clevedon, North Rd, 15 nesting in pines on 12/7 (AJG). Matahui Pt, 102 at roost on mangroves at high tide, on 8/11 (PCML). Omokoroa, Golf Course, 51 on 8/11 (NS). Maketu, maximum 70 on 22/11 (WMH, PCML); Little Waihi, 53 on 22/11 (RG); 18 on 23/5 (PCML). Ohiwa H, 111 on 27/11 (WMH); c.200 on 21/6 (JD). Waiotahi E, 35 on 21/6 (WS). Whale I, 1 on boulder bank on 9/7 (BS). Muriwai, Wherowhero Lag, 34 on 15/11 (BGJ, SCJ). HB river census: Ngaruroro R, 10, Tutaekuri R, 13, Tikituki R, 33 on 25-26/10; Ahuriri E, winter 18 on 5/7, summer 33 with some nesting in nearby trees on 1/11 (KVT). Levin, Sand Rd, 61 on 15/8 (WRJ). Foxton, 22 on 5/7; Foxton B, 55 on 2/5; Whirokino, 30 on 21/6 (JLM, MM). Pauatahanui Inlet, 21 on 19/10/85 (JRC).

WHITE HERON *Egretta alba*

Awanui, Unahi Rd, 1 with Cattle Egrets on 22/6/86 (MH). Kaipara H, Jordan's Farm, 4 on 13/7 (GJA); South Kaipara Pen, 2 on 10/5 (CE). Manurewa, Wattle Downs, 1 on 27/11 (B. Hooper *per* BB). Papakura, Bottletop Bay, 1 on 29/1 (AJG); Pahurehure Inlet, 1 on 2/2 (JVD). Wairoa R, Clevedon, 1 on 21-22/1 (O. and G. Goodin *per* TRH). Access Bay, FoT, 1 from 30/4 to 16/6; also visited nearby tidal creeks (RL); still present on 13/7 (BRK). Kopuku Swamp, Maramarua, 1 wearing plumes on 29/8 (BB). Port Waikato, 2 from May until at least 27/7 (BB, TH *et al.*). Matamata, 1 on 9/5 (RJJ). Matata, 1 on 6/7, 2 on 19/7, 26/4 and 21/6 (PCML). Waiaua E, 1 on 27/4 and 22/6 (WS). Whakaki Lag, 1 on 10/4; 2 on 10/5; still present on 14/6 (GAF). Napier, Anderson Park, 1 in breeding plumage on 19/8 (KVT); E. Clive, Muddy Creek, 1 on 15/4 (ARG, KVT); Ahuriri E, 1 on 9/6 (KMW, LW). Waikawa, 1 on 2/7 (MO, MO); Foxton Loop, 1 on 18/10; Whirokino, 1 on 21/6 (JLM, MM); Ohau, 1 on 22/6 (WRT, MO, MO) Manawatu E, 1 on 28/6 (GG, LJD).

Correction: Foxton Loop, 3 on 21/7/85, not 10 birds as stated in *Notornis* 34:123 (WRJ).

LITTLE EGRET *E. garzetta*

Paua, 1 on 4/3 and 12/4 (AMN, JS, MS). Kaituna Cut, 1 between 4/11 and 22/11 (NS, PCML). Manawatu E, 1 on 1/3 (LJD).

REEF HERON *E. sacra*

Northland, numerous sightings of single birds and some pairs along eastern coastline from Whangauumu Bay to Ruakaka E (PA, AJG, PCML, BW). Auckland Region, 20 reports of 1 or 2 birds (MG). Manukau census, nil. FoT census, nil. Coromandel Pen, reports from 16 localities on east and west coasts south to Otahu Est and Thames respectively; breeding a Flaxmill Bay (2 well-grown chicks) and Opoutere (JP, HMS) and pairs at Stony Bay, Jack's Point and Whangamata; Great Mercury I, 2 separates (VL, TH). Kawakawa Bay 1 on 15/6/86 and 29/6/86 (RBS, TGL, SMT). FoT, Waharau, 1 on 13/7 (BB, DGB). Tarata Point, 1 on 1/6 (BB). Waiaro Bay, Clevedon, 2 on 26/4 and 1/5 (TRH). Awhitu Pen, Te Toro 1 on 7/6 (BB). Port Waikato, 2 separates on 3/8 (RL). Kokonga West, 1 on 16/11 (JVD, DMW). Waikato Region, reported from Waikorea, Raglan H, Kawhia H, Taharoa, Kiriteheri (SC, KJ, RJL, FN *et al*, ARP, ASR). Waihi B, 1 on 2/11 (BS). Sulphur Point, 2 on 24/5 (BC), 1 on 14/6 (LB); Hairini, Tauranga, 1 on 27/5 (NS) and 14/6 (DI); Matahui Point, 1 on 14/6; Kaituna Cut/Maketu, several singles reported and 2 on 30/5; L Waihi E, 1 on 23/5 (PCML). Whakatane Heads, 1 on 12/3 (RMW); Ohiwa H, 2 on 27/11 (WMH) and 1 on 4/4 (RMW); Waiotahi E, 1 on 21/6; Waihua E, 1 on 22/6; Opape, 1 on 22/6 (WS). Ahuriri E, 1 seemingly resident bird recorded in winter and summer counts for past 10 years (KVT). Wellington H, Petone to Ngauranga, frequent sightings of singles Oct-Jan and April-May; Queen's Wharf, 2 on 5/6 and 6/6 (JLM, MM).

CATTLE EGRET *Bubulcus ibis*

Awanui, Unahi Road, 110 May to mid-June (MD), 75-80 on 22/6 (MH). Ruawai, flocks of 78 and 150 on 18/5/86; Oakleigh, 90 on 14/7 (BW). Orewa E, 32 on 25/8 (JED). Parakai, 120 on 10/8, 10 on 13/4 (CE). Mangere, 22 on 8/8 (NR, JED), 1 with some colour on 1/2 (NR, JED, RBS). Great Barrier I, Whangaparapara, 1 on 1/5 (GS). Clevedon, Quarrie's Farm, 1 on 26/5 (PF). Kingseat, 6 or more reported to have "returned recently" on 14/4 (BB). Karaka, 1 on 28/4 (RL). AkaAka, 125 on 6/7, 211 on 20/7, 291 on 17/9 (BB, DGB, JVD, AJG, NCP, RP); 15 on 10/4, 57 on 5/7/87 (BB, BJB, ME, AJG). Piako, c.200 on 28/9 seen by Canadian visitors (RBS). Ngatea, Horohia Rd, 57 on 5-12/6 (earlier records: 1 in 1984, 13 in 1985) (H. Wright *per* HMS). Onewhero, near golf course, 1 carrying sticks into tree (AS). Ohinewai, maximum 480 on 23/8 (FN *et al.*); 160 on 7/6 (ARP). Rototuna, 15 remained until Nov; 3 on 30/4 (BRK); 11 on 18/5 (BL). L Ngaroto, 21 on 9/5 (ARP). Mokau R, 6 on 30/3 (RS). Katikati, 15 on 9/8 (BC). Kaituna Cut/Maketu 32 from 28/8 to 1/11, 9 on 9/11, 4 well coloured on 22/11 (PB, JD, RG, PCML, NS); Maketu, 26 on 17/5, 27 on 23/5 (PCML); Awaiti Wetlands, 86 on 19/7 (PCML), 14 on 30/6 (RMW). Opotiki, Kukumoa, 15 on 2/5, 31 on 21/6 (WS). Nuhaka, 3 on 23/10, not seen again (GAF). HB, Te Tua Station, 16 on 23/8 (PWT, MT), 10 in breeding plumage on 16/11 (PWT, MT, NL). Waipukurau, 24 on 24/8, colouring up by 28/9;

16 still in area on 2/11 (CMcR). L Horowhenua, 107 in May 86 (DS); 60 on 21/8; 28 throughout summer, 38 on 8/4, 73 on 21/5 (WRJ, MO); Whirokino, 250 on 15/6 (WRJ, RS, PS), 200 on 5/10 (JLM, MM). Woodville, Troupe Rd, 60 on 23/8 (PM). Otaihangā, 12 on 1/4/86 (PMcK). Levin, 3 on 4/4/86 (WRJ). Waimeha Lagoon, 9 on 6/4/86 (RB, DB). Tuhitanga, 25 in May 1986 (DS).

AUSTRALASIAN BITTERN *Botaurus stellaris poiciloptilus*

Maungaraho Reserve, 1 on 22/6/86 (BW). Waiotira, Manganui R, 2 on 2/5/86 (PA). Omamari, 1 on 19/7 (BW). Auckland region, reports of 1-4 birds from 6 sites (MG). Waikato R, Maioro, 1 on 20/7 (BB). Port Waikato, 1 seen eating worms on 3/8 (MG,SG). Kopuku, Finlayson Rd, 4 seen on 5/4 (BB, JVD, RL). Piako, 1 on 19/7 (DAL). Taupiri, Komakorau Stream, 1 on 28/5 (BRK). Waikato Lakes, reports from L Serpentine on 12/3 (ARP), L Ngaroto on 3/5 (RD), L Taharoa on 16/11 (ARP, BS), L Harihari on 20/12 (SC). Kirithehere, 3/10 (BS). Matata, 1 or 2 seen on 6/7, 19/7, 26/4 (WMH, PCML). Tukituki E, 1 flushed from grass on 4/7 (KVT). Muddy Creek, East Clive, 3 flushed from rushes on 18/4 (PWT). Foxton Loop, 1 on 19/4 (JLM, MM). L Horowhenua, 2 on 11/6.

ROYAL SPOONBILL *Platalea regia*

Mangere oxidation ponds, 2 on 30/8/85 (GT); 9 on 5/10 (DGB, MJT), 1 on 30/11 (DGB), 10 including 7 juvs on 15/5 (PFB); Puketutu tidal flats, 6 on 29/5/86 (RBS,SMT). FoT, Access Bay, 1 on 16/6 (RL). Coromandel wharf, 1 on 27/5 (AP). Kaituna Cut, 3 using as roost pines occupied by Pied Shag colony between 28/8 and 14/10; still present on 23/5, copulation and 'half-hearted' nest-building among Pied Shags during Nov/Dec (PB, PCML, NS). Muriwai Lag, 1 on 15/11 (BGJ, SCJ). Nuhaka E, 1 on 3/5 (GAF). Ahuriri E, 9 on 5/7, 7 on 31/8; first sighting in 1987, 5 on 9/5 (PWT, MT); 13 on 9/6 comprising 5 adults and 8 imms (PWT, KMW, LW). Porangahau E, 2 on 27/6 (BDH, JGH, RMH, HAR). Ohau E, 1 on 7/7 (WRJ), 3 on 29/6/86 (RGP). Wanganui, 3 on 23/2 (PFB, GR, OT). Manawatu E, 38 on 5/6, 35 on 28/6 (LJD).

MUTE SWAN *Cygnus olor*

L Poukawa, 11 on 27/6 (MT, PWT).

BLACK SWAN *Cygnus atratus*

Coromandel Pen, Matarangi Spit, 136 on 27/5 (AP). Tuakau oxidation ponds, 150 on 12/7 (AJG, JVD *et al.*). Port Waikato, up-river c. 3 km, hundreds on 3/8 (BB *et al.*). Hamilton, L Rotorua, 106 adults and 15 cygnets on 20/9 (MB). L Taharoa, c. 300 adults and 6 cygnets on 16/11; 600 on 30/5 (ARP, BS). Tauranga H: Matahui Point, 239 on 8/11, c. 1000 on 14/6 (PCML) Sulphur Point, 200 on 14/6 (LB); Aerodrome Bay, 183 on 14/6 (PCML). Matata, 39 on 19/7, 100 on 26/4 (PCML). Whakaki Lag, maximum 1040 on 24/1 (GAF). Ahuriri E, 64 on 5/7; 77 on 1/11; L Poukawa, 400 + in July 86; Porangahau E, 81 on 16/11 (KVT). L Horowhenua 2050 in June 86; 891 on 23/6 (WRJ). Puke Puke Lag, 110 on 11/1 (LJD *et al.*). Kaitoke Lake 136 on 8/3 (PFB, GR, OT). Foxton No. 1 Lake, 170 on 3/5; Foxton Loop, 24 on 19/4; Manawatu E, 25 on 2/5; Whirokino, 50 on 21/6 (JLM, MM). Wellington H, Petone, 5 on 22/1; 1 on 22/5; Hutt R, 2 at rail bridge on 20/8 (JLM, MM).

CANADA GOOSE *Branta canadensis*

Manukau H, Bottletop Bay, 3 flew in on 8/3 (BB *et al.*). Tuakau oxidation ponds, 7 on 12/7 (AJG, JVD *et al.*). Awhitu Pen, L Pokorua, 6 on 1/6 (MG, SG). Kopuku, Finlayson Rd, 1 apparently male on guard, chasing other birds away on 28/9 (BB). Limestone Downs Station, South of Port Waikato, 10 on 16/11 (DMW, who suspects interbreeding with feral geese). Hamilton, L Rotoroa, 2 on 20/9 (MB). Kaituna Cut/Maketu, 11 on 12/10; 19 on 1/2; 26 on 23/5 (PCML); L Waihi R, 23 on 22/11; c. 60 on 23/5 (RG, PCML); Matata, 5 on 19/7, 6 on 26/4 (PCML). Whakaki Lag, 1197, including 262 juvs, on 6/1; Ohuia Lag, 269, including 160 juvs, on 6/1 (GAF). Tukituki R, 1 on 19/10 (PWT, MT, JGH, RMH). Long Ridge Lake, HB, 32 on 25/1 (BDH). Puke Puke Lag, 33 on 11/1 (LJD, WRJ); L Horowhenua, 2 on 2/8 (WRJ, JLM, MM); Foxton No. 1 L, 7 on 31/1 (JLM, MM). Wellington H, Hutt R to rail bridge, 6 present Feb to April, 5, May-June (JLM, MM).

PARADISE SHELDUCK *Tadorna variegata*

Aupouri Pen survey, 1520 in Jan (AVH). Mimiwhangata, 32 on 11/11 (AJG). Whananaki South, 40 on 8/6/86 (BW). Orewa SP, moult flocks of 200-300 birds in Jan-Feb; Kaipara, L Poakawau, moult flocks of 200-300 birds in Jan-Feb (GAP). Red Hill, Papakura, pair apparently prospecting territory on 17/7 (BB); Papakura, Dominion Rd, nest with 5 eggs on 16/11 (one reared previous year) (JP). Moumoukai, Hunua Ranges, 1 pair near water supply dam (BB). Coromandel Pen, Matarangi, 32 on airport on 27/5 (AP); Opoutere, 2 pairs and single bird disputing territory on 25/10, and 67 present on 30/5 (BB *et al.*). Kaawa, south of Waikato R mouth, 73 on 16/11 (DMW). L Whangape, 450+ on marginal flats on 5/4 (BB *et al.*). Wharekawa, FoT, female with 6 well-grown young on 7/11/85; Mataitai, 13 on 15/12/85; Mangere, 12+ during May 85 (RBS, GE). Waikato region, particularly common on hill country farms in west of region (RC, KJ, FN *et al.*, L Harihari, maximum 172 on 20/12; L Nukumiti 75 on 30/12 (SC). Waikawau, 47 on 11/10 (FN *et al.*); Maketu, 2 on 22/11; Matata, 18 on 19/7, 25 on 21/6 (PCML). Ohiwa H, 37 on 23/11 (JD). Whakaki Lag, c.1260 on 24/11, c.1800 on 21/14 (GAF). HB river census on 25-26/10: Ngaruroro R, 150; Tutaekuri R, 47; Tukituki R, 431. Ahuriri E, 5 on 5/7, 152 on 1/11; Waimarama Rd Lag, c.106 including 50% imm on 22/1 (KVT). L Horowhenua, 20 on 23/6 (WRJ). Puke Puke Lag, 8 on 11/1 (LJD). Foxton, Round Bush, 2 on 2/8; Foxton No 1 L, 4 on 21/12; Foxton B, 2 on 2/5; Otaki, 8 north of town on 4/1 (JLM, MM). Pauatahanui Lag, max 14 on 24/5; 10 on 21/6, including a male with white eye ring (JLM, MM).

CHESTNUT-BREADED SHELDUCK *Tadorna tadornoides*

Pauatahanui Lag, a pair on 2/11 (JLM, MM).

MALLARD *Anas platyrhynchos*

Mimiwhangata, 3 on 11/11 (AJG). Whakaki Lag, c.2900 on 24/1, max c.6200 on 21/4 (GAF). Ahuriri E, 668 on 5/7, 196 on 1/11; Waitangi, HB, c.260 on 5/7, 107 on 1/11; HB river census on 25-26/10: Ngaruroro R, 31; Tutaekuri R, 59; Tukituki R, 273 (KVT). Porangahau E, 100 on 27/6 (BDH, HAR, JGH, RMH). L Horowhenua, 1742 on 23/6 (WRJ). Puke Puke Lag, 80 on 11/6 (LJD). Manawatu E, 1000+ on 2/5, 250 on 5/6 (JLM, MM).

GREY DUCK *Anas superciliosa*

Matata, max 60 on 19/7 (PCML). Elsthorpe Domain, HB, 1 with 10 young giving 'broken-wing' display on 5/10; Tukituki R, 2 on 25/10 (KVT). Manawatu E, 1 on 2/5 (JLM, MM).

GREY TEAL *A. gibberifrons*

Aupouri Pen survey, 7 in Jan. (AVH). Mangere, 36+ among tidal pools on 29/5/86 (RBS, SMT), 150 on 28/5 (GJA). Karaka, 22 on 14/6 (BB). Tuakau SP, 158 on 12/7 (JVD). Waikato R, Maioro, 16 on 20/7 (BB). FōT Access Bay, 5 on 6/2 (BB). Kaituna Cut, 2 on 1/2, 93 on 17/5 (PCML). L Rotorua, Sulphur Pt, 4 on 12/3 (JLM). Whakaki Lag, 10 on 21/4 (GAF). Ahuriri E, 238 on 5/7, none on summer census 1/11; c.400 on Southern Marsh in shooting season, 9/5; HB river census on 25-26/10: Ngaruroro R, 4; Tutaekuri R, 5; Tukituki R, 17 (KVT). L Roto-o-kiwa, c.13 on 27/9 (JLL, KVT). Long Ridge Lake, 24 on 25/11 (BDH). Porangahau E, 7 on 27/6 (BDH, HAR, JGH, RMH). Kaitoke L, 3 on 23/2 (PFB, GR, OT). L Horowhenua, 10 on 23/6 (WRJ). Manawatu E, 3 on 2/5, 167 on 21/6 (JLM, MM). Pauatahanui Lag, 6 on 24/5 (JLM, MM).

BROWN TEAL *A. aucklandica chlorotis*

Whananaki North, 12 on 18/6 (BW). L Rotorua, Sulphur Point, 1 with Grey Teal on 12/3 (JLM).

NEW ZEALAND SHOVELER *A. rhynchotis*

Aupouri Pen survey, 22 in Jan (AVH). Mangere SP, 1 pair on 12/5/86 (GNA, RBS). Tuakau SP, 67 on 12/7 (AJG, JVD). Waikato R: Maioro, 61 on 17/5; Te Kohanga, 50+ on 3/8 (BB). Hamilton, L Rotorua, 5 on 21/6 (MB). Matata, max 300 on 9/7 (PCML). Whakaki Lag, max c.250 on 24/1 and 21/4 (GAF). Ahuriri E, 245 on 5/7, 38 on 1/11 (KVT); Westshore Lag, 300+ on 1/6 (MT, PWT); Waitangi, c.50 on 5/7, 4 on 1/11; HB river census on 25/10: Tukituki R, 15 but more on Ngaruroro or Tutaekuri Rs; L Poukawa, 200+ in July (KVT). Porangahau E, 4 on 27/6 (BDH, HAR, JGH, RMH). L Horowhenua, 480 on 23/6 (WRJ). Manawatu E, 50 on 2/5 (JLM, MM). Puke Puke Lag, 107 on 11/6 (LJD). Pauatahanui Lag, 4 males and 1 female, on 24/5 (JLM, MM).

BLUE DUCK *Hymenolaimus malacorhynchos*

Mangleton, HB, 1 on farm dam after recent strong winds (JRB). Tongariro NP, 1 near Whakapapa camping ground on 18/1 (BRK).

NEW ZEALAND SCAUP *Aythya novaeseelandiae*

Pouto Pen, Round Hill, 1 on 11/10 (BW). Waiwera, Staka's Refuge, 12 on 13/7 (VJL), 14 on 27/11 (JED). L Taharoa, 71 on 16/11 (ARP, BS). L Harihari, 8 on 20/12; L Rotorua, Taharoa, 7 on 30/12; Taharoa steel works, 12 including 2 ducklings on 30/12 (SC). Sulphur Pt, L Rotorua, 50 males and 6 females on 1/12; c.200 on 12/3 (JLM). Matata, maximum 147 on 27/8 (PCML). L Titira, 60+ on 26/4 (CFMcR, KVT). Kaitoke L, 7 on 23/2 (PFB, GR, RT).

AUSTRALASIAN HARRIER *Circus approximans*

Papakura, Red Hill, one calling strongly on 1/7; Awhitu Pen, pair calling and courting on 20/7 (AJG). Whale I, 3 between 8 and 15/7 (BS). Ahuriri E census, 6 on 5/7; 5 on 1/11. Breeding and roosting occurs in rushes, especially

in northern pond area (KVT). HB river census, 25-26/10: Ngaruroro R, 12; Tutaekuri R, 3; Tukituki R, 48 (KVT). L Horowhenua, 10 on 23/6 (WRJ).

NEW ZEALAND FALCON *Falco novaeseelandiae*

Awhitu Pen, Irwin's Gap, one chasing magpies on 6/3; first seen in this area (VMR). Waikato Region: records from Paterangi in Nov, Rangitoto Range on 17/4 (RD), Waitomo on 10/3 (SCh), Tawarau Forest on 2/5 (BW). Matata, 1 very dark bird gliding low over dunes in NW direction, on 21/6 (PCML). Matahina, 1 chasing myna across road on 24/5 (RMW). Waiaua E, 1 on 22/6 (WS). Clifton, HB, 1 chasing flock of small birds on 18/6 (ARG, BMT, KVT). Tongariro NP, 1 near Taranaki Falls on 21/1 (BRK). Manawatu E, 1 on 28/6 (LJD, RGG). Aokautere, 1 on 5/5 chasing small bird (LJD). Ruahine Range, 1 on 17/8 (RAC). Te Marua, 7 records of single birds and pairs seen between Aug and Dec 1985; 1 juv chased by tuis and magpie on 26/6/86 (SBL). Lower Hutt, 1 in Guthrie St on 5/10 (JLM, MM).

NANKEEN KESTREL *Falco cenchroides*

Gisborne, 1 seen catching and eating House Sparrow in botanical gardens on 1/11 (JCH, MW).

RED-LEGGED PARTRIDGE *Alectoris rufa*

Helensville area, 600 released by Auckland Acclimatisation Society during 1986 (MJT). Awhitu Pen, Pollok Spit, pair seen on 2/11; 500 released in April; local farmer reported 7 pairs (JP).

BROWN QUAIL *Synoicus ypsilophorus*

Whitford Forest, 1 on eastern fringe on 20/10 (AJG). Pukekohe West, small coveys in horticultural areas, April 86 (DAL). Coromandel Pen, pair seen from Route 309 on 9/11; also present in occasional flocks at Whangapoua (E. Pratt). Kaituna Cut, 1 on 12/10, 5 on 17/5; Ohope Spit, 4 on 21/6 (PCML).

CALIFORNIA QUAIL *Lophortyx californica*

Kaikohe, reported as common (TT). Papakura, still present at Red Hill (BB). Clevedon, heard in orchard on 23/9 (AJG). Kopuku, Finlayson Rd, 25+ on 5/4 (BB). HB river census, 52+ on Tukituki R on 25/10; Haumoana B, 1 feeding along shingle on 15/4 (KVT).

PHEASANT *Phasianus colchicus*

HB river census, 1 on each of the Ngaruroro, Tutaekuri and Tukituki Rs, 25-26/10 (KVT).

PEAFOWL *Pavo cristatus*

S. Kaipara Pen, well-established feral population (MG,SG).

BANDED RAIL *Rallus philippensis*

Matapouri, reported sightings by locals, mid 1987 (PCML). Onerahi, Beach Rd, heard calling throughout year (PA). Clevedon Cruising Club, Wairoa R, 1 with quarter-grown chick on 1/11 (R. Andrews per TRH); max 4 seen on 19/1, including 1 bathing (TRH). Coromandel Pen, Whangapoua, single birds on 23/7 and 8/1 (E. Pratt, DMW); Opoutere, 1 by beach carpark on 30/5 (BB *et al.*). Te Maunga, BoP, single birds seen 6 times Feb-June (NS). Maketu, pair with 5 small chicks foraging on mudflat on 9/11 (RG); 4 adults with 2 chicks on mudflat on 22/11; 1 adult with fully fledged

juv on 14/2, 2 adults on 17/5, 1 on 23/5 (PCML). Matata, 1 foraging at edge of lagoon on 21/6 (KS). Waiohahi E, 1 on 20/6 (WMH).

MARSH CRAKE *Porzana pusilla*

Matapouri, reported sightings by locals, mid 1987 (PCML).

SPOTLESS CRAKE *P. tabuensis*

Moumoukai, Hunua Ranges, birds answered taped calls (DGB). Whangamarino, Lake Rd, 2 pairs responded to tapes on 5/4 (BB). Waikato R, Frost Rd, 1 "purring" on 11/5/86 (RBS, TGL). Waikato Region: reports from L Serpentine, on 12/3 (ARP); L Ngaroto, on 6/5 (RD). Ruapuke, on 24/5 (JR, SR). Kiritehere, on 12/10 (FN *et al.*). Foxton, Round Bush, 1 heard on 21/12; Foxton, No. 3 Lake, 3 heard on 1/1 (JLM, MM).

PUKEKO *Porphyrio p. melanotus*

Mangere, Drainage Board ponds, 1 swam to tiny rock islet to settle on nest, mate waited nearby (BB). Ahuriri E, 32 on 5/7, 7 on 1/11; L Poukawa, c. 130 in July (KVT). L Horowhenua, 51 on 23/6 (WRJ).

AUSTRALIAN COOT *Fulica atra*

Auckland, Western Springs, 7 pairs nested in late 86, hatching 19 young (VJL). Mangere Ponds, 1 on 6/8 (MJT). L Kereta, S. Kaipara, 1 on 7/4 (GJHM). Hamilton, L Rotoroa, 178 on 20/9 (MB). L Tutira, c. 200 on 26/4 (KVT).

SOUTH ISLAND PIED OYSTERCATCHER

Haematopus ostralegus finschi

Waikaraka, 4 on 29/7; Parua Bay, 2 on 29/7; Tikonui, 30 on 12/4 (BW). Whangaparaoa Pen, Army Bay, c. 60 after gale resting and feeding on pasture on 4/9/85 (RBS). Manukau H census, summer 3035, winter 26 700; the winter population continues to increase (BB). FoT census, summer 1712, winter 6274; but "3 roost" total 9060 (Limeworks, Access Bay, Taramaire) on 17/5 (AJG, BB). Coromandel H, 25 on 26/10 (LB). Opoutere, 1 accompanying local VOCs, Jan 87 (BB). Matarangi Spit, 42 on 27/5 (AP). Aotea H, 10 on 22/11 (FN *et al.*), winter max 611 (ASR *et al.*); Kawhia H, 726 on 22/11 (FN *et al.*), winter max 1665 (ASR *et al.*). Raglan H, 408 on 27/6 (ASR *et al.*). Bowentown shellbanks, 76 on 8/11, 443 on 14/6 (BC). Sulphur Point, 95 on 14/6 (LB, DI); Aerodrome Bay, 167 on 14/6 (PCML); L Waihi, max 10 on 3/1 (PB, RG, PCML); Maketu, 1 on 1/2 and 30/5 (PCML). Ohiwa H, c. 200 between 23/5 and 21/6 (JD, WMH, WS). Mahia, Oraka E, 2 between 23/10 and 24/1, 1 on 28/6 (GAF). Ahuriri E, 16 on 5/7, 3 on 1/11; HB river census on 26/10 recorded 4 pairs on Ngaruroro R with at least 3 pairs showing breeding behaviour, two nests each with 2 eggs apparently were unsuccessful (PWT, MT). Ohau E, 10 on 25/2 (MO, MO, WRJ). Wanganui, 1 on 28/7 (PFB, GR, RT). Manawatu E, 5 on 1/3 (RAC, SEC, *et al.*), 85 on 17/4 (JLM, MM), 17 on 26/8 (MO, MO).

VARIABLE OYSTERCATCHER *H. unicolor*

Northland, numerous records from east coast north of Whangarei, mostly pairs; Whananaki S, 8 on 8/6 and 24/8; Pataua S, 100 on 2/3 and 25/3; Ngunguru, 8 on 29/3 (BW, AJG). Manukau census, summer 3, winter 4 (AJG, BB). Waikato R mouth, north side 4 pairs; up-river beach 9 (BB). FoT census, summer 1, winter 15. Coromandel Pen, Stony Bay, 2 on 29/12; Waikowhau, 9, 1 nesting pair on 1/1; Kennedy Bay, 20 on 4/1 (JVD);

Matarangi Spit, 51 on 27/5 (AP); Cook's B, 5 pair on 3/2 (JP); Preece's Point, 108 on 24/3, 27 on 3/5 (AP); Tairua, 6 pair, 1 with 2 small chicks on 28/2 (JP); Opoutere, 59 on 13/7, 52 on 30/5 (BB *et al.*); Whangamata, '86, pair nested on rope on deck of 30ft fishing boat, but abandoned when boat went on slip (HMS); 11 on 30/5 (BB); Otahu E, 18 on 30/5 (BB *et al.*). Waikato Region: breeding recorded at Waikorea (2 pairs), Ruapuke (2 pairs), Kawhia, Taharoa (4 pairs) (SC, FN, ARP, ASR, JMR). Winter census on 27/6: Raglan H 6, Aotea H 18, Kawhia H 5 (ASR *et al.*). Waihi B, 2 on 2/11 (BS). Bowentown shellbanks, 22 on 8/11, 25 on 14/6 (BC). Omokoroa golf course, 2 on 8/11 (NS). Sulphur Point, max 21 on 14/6 (BS, AMcC, LB); Matakana I, south end, 29 on 16/11, 4 nests with 2-4 eggs (NS); Aerodrome Bay, 4 on 14/6 (PCML). Maketu, 36 on 28/8 (PB) 7 pairs with numerous scrapes, a nest with 1 egg on 12/10, 10 pair with 2 downies and 1 nest with 3 eggs on 22/11 (PCML). Kaituna Cut, 4 on 22/11, 3 on 17/5, Pair seen mobbing harrier at 300 m above nest, ¼ km from river mouth on 1/2; same pair collecting shellfish and flying 100 m to feed 3 downy chicks hidden in reeds on 14/2 (PCML). L Waihi, max 52 on 17/5 (PB, RG, PCML); Otamarakau, 2 pair on 6/7 and 21/6; Herepuru Stream mouth, 1 pair on 6/7 and 27/8; Pikowai, 1 pair on 27/8; Tarawera R mouth, max 3 on 19/7, including bird with entire head and neck speckled white, resident here for many years; Rangitaiki R mouth, maximum 9 on 19/7 (PCML). Whale I, 2 pair in Boulder Bay on 8/7 (BS). Whakatane R mouth, 7 on 23/11, 6 on 21/6; Ohope Spit, 28 adults, 6 nests with eggs, 1 downy on 23/11, 14 on 23/5 (PCML). Ohiwa, 12 on 21/6 (JD, WS). Maraetotara Stream mouth, 40 on 14/6 (WMH); Waiotahi E, 4 on 21/6 (WS); Waioeka E, 2 on 22/6 (WS); Waiawa E, 4 on 4/7, 10 on 22/6 (WS). Tolaga Bay, white bird still present on 21/6 (GAF). Murwai Lag, 23 in Nov (BGJ, SCJ). Mahia, Oraka E, maximum 13 on 29/6 (GAF). Ahuriri E, 3 on 31/5 (ACS, ARG); Te Awanga, 4 on 18/6 (BMT, KVT). Poranghau E, 6 on 16/11, 7 on 27/6 (BDH, HAR, JGH, RMH). Turakina E, 3 on 14/3 (PFB, GR, OT). Manawatu E, 26 on 26/8 (MO, MO), 10 on 6/10 (JLM, MM); Ohau E, 41 on 25/2 (MO, MO). Petone/Ngauranga, max 14 on 17/3 (JLM, MM).

SPUR-WINGED PLOVER *Vanellus miles novaehollandiae*

Kerikeri Pen, 2 on 4/6 (PA). Trounson Park, 2 on 18/5 (BW). Maunganui Bluff, 4 on 19/7 (BW). Manukau census, winter 7 (AJG). Ardmore, pair with half-grown chick on 14/10, first sighting in area (R. Munro *per* AJG). Wairoa R, 5 on freshly mown field on 28/12 (TRH). Mataitai, 1 incubating on 19/7 (TGL). FoT, Limeworks 7, Taramaire 6 on 17/5 (RBS, AVS). Maioro, 12 on 7/6 (BJB, ME). Lower Waikato, Frost Road, 25 in potato field on 11/5/85 (RBS, TGL). Waikato Region, widespread (ARP *et al.*). Sulphur Point, 6 on 14/6 (LB); Papamoa, flock of 30 on 10/5; Kaituna Cut/Maketu, 3 on 22/11, 70 on 17/5 (PCML); Otamarakau, 2 on 1/1 (PB); Pikowai, 3 on beach on 27/8 (PCML). Matata/Tarawera R mouth, 2 on 19/7, 23 on 1/1 (PB, PCML); Rangitaiki R mouth, 2 on 21/6 (PCML); Waiotahi E, 3 on 20/6 (WMH); Kukumoa, Opotiki, c. 40 on 21/6 (WS). A great increase in numbers in coastal BoP is noted for the winter of 1987 (PCML). Gisborne, largest flock 42 on 1/11 (JCH, MW). Whakaki Lag, 39 on 24/1, 172 feeding on wet field on 14/6; Wairoa, flock of 37 over town on 5/6 (GAF). Ahuriri E, 5 on 5/7, 16 on 1/11 (KVT); flock of 70-80 on 26/5 (ALH, ACS); Meeanee, c. 75 in dry

grass on 4/7 (TAS, KVT); L Poukawa, 100+ in July 86 (KVT). HB river census on 25-26/10; Ngaruroro R 56 Tutaekuri R 38, Tukituki R 183; Lower Mohaka, 18 on 9/11; Porangahau E, 9 on 16/11 (KVT), 28 on 27/6 (BDH, HAR, JGH, RMH). Tongariro NP, Manganuiateao R, 9 on 21/1 (BRK). Puke Puke Lag, 13 on 8/1 (LJD *et al.*). Manawatu E, 26 on 3/5, 35 on 23/5; Waikawa Bch, pair with 2 small chicks on 17/7 (BDH). Pauatahanui, 25 on 24/5, 30 on 6/6 (JLM, MM).

GREY PLOVER *Pluvialis squatarola*

FoT, Access Bay, 1 present from 18/11 (BRK) to 22/2 (BB, BHS *et al.*).

LEAST GOLDEN PLOVER *P. fulva*

Manukau census, summer 58, Karaka, 21 on 15/3 (BB *et al.*). FoT census, summer 150; Mataitai, 20 on 21/3 (AJG), 26 on 15/12/85 (GE, RBS). Ardmore airfield, 5 on 5/12 (JP). Sulphur Point, 3 on 16/11 (LB); Kaituna Cut/Maketu, 10 on 22/11 (PCML); Little Waihi, 68 roosting at high tide, 1 or 2 in partial breeding plumage, on 14/2. Largest flock on record for BoP (PCML). Ohope Spit, 18 on 23/11 (WMH). Mahia, Oraka E, 9 on 2/11, 4 on 29/12 (GAF); Ngamotu Lag, Wairoa, 65 on 8/11 (YMcK, GAF), 45 on 22/11 (GAF). Ahuriri E, c. 65 on 28/12, c. 30, many blackening, at Southern Marsh on 23/2 (KVT). Manawatu E, 49 on 20/12 and 14/2 (JLM, MM).

NEW ZEALAND DOTTEREL *Charadrius obscurus*

Sandy Bay, 2 on 21/6; Tauranga Bay, 9 on 20/4 (BW). Mimiwhangata, 7 on 11/11 (AJG). Whananaki South, 8 on 24/8; Pataua North, 2 on 23/8 (BW). Whananaki H, 4 on 6/9; Matapouri Bay, 2 on 6/9; Ocean B, 2 on 5/9; Ngunguru, 2 eating crab on 4/9 (PCML). Onerahi, 24 on 28/6; nest with 3 chicks hatched on 8/10 (PA). Round Hill to Karaka Creek, 8 on 16/8, 4 on 11/10 (BW). Manukau H census, summer 28, winter 20 (AJG, BB). Waikato R mouth, 7 on 3/8 (BB); Kaawa, south of mouth, 2 on 16/11 (DMW). FoT census, summer 8, winter 15 (BB, AJG); Access Bay, 12 on 18/3 (BHS) and 6/4 (BRK). Coromandel Pen: Preece's Pt, 8 on 24/3 (AP); Matarangi Spit, 9 on 27/5 (AP); Waikawau, 6, including 2 juvs, on 2/1 (JVD); Opoutere, 2 pair with two 3-egg nests and 1 single bird, 12 on 26/12 (BB); Whangamata, 7 on 30/5 (BB *et al.*). Waikato region: breeding confirmed at Waikorea, Ruapuke, Taharoa (ARP, ASR, JMR, BHS); breeding season records from Raglan H, Aotea H, Kawhia H, Marokopa (KJ, AL, ARP, ASR, FN); max at Kawhia 13 on 12/5 (BHS). Bowentown B, 6 on 25/5, 8 on 14/6 (BC); Matakana I, south end, 25 adults and 3 nests with eggs on 22/11 (NS). Sulphur Pt, 12-14 disputing territories and making scrapes on 28/9 (BS); 25 on 8/11 (NS), 50 on 29/3, 16 on 24/5 (BC); 37 on 14/6 (LB, DI). Kaituna Cut, pair nesting in field on 12/10, still present on 22/11 with no apparent breeding success (PCML); Maketu, 9 pairs holding territories on spit, 1 nest with 3 eggs on 12/10, 6 pairs and 3 nests with eggs on 22/11. Max 35 on 14/2, presumed to have included Little Waihi flock (PCML). Little Waihi, 6 on 22/11 (RG), 21 on 14/2, 19 on 23/5 (PCML). Otamarakau, 8 adults and 1 small chick on 1/1 (PB). Pikowai/Henepuru, 5 on 27/8; Tarawera R mouth, maximum 3 on 19/7; Rangitaiki R mouth, maximum 2 on 21/6 (PCML). White I, 4 in Boulder Bay on 8/7 (BS). Ohope Spit, 8 pairs nesting on 23/11, 15 adults with no sign of breeding success on 8/1; 67 in high tide roost on 23/5; same birds on subsequent visit showed much territorial chasing and fighting as winter flock prepared to disperse to breeding grounds, presumably

as far away as Cape Runaway. (No birds winter between Ohiwa and Runaway.) None present on 21/6 (PCML). Waiotahi, 6 on 21/6 (none previous week); Waiāua E, 2 on 4/7 (WS). Ohau E, Manawatu, 2 on 25/2 (WRJ, MO, MO).

BANDED DOTTEREL *C. bicinctus*

Onerahi airport, max 300+ on 25/6 (BW). Manukau H census, summer 5, winter 778 (AJG, BB); Karaka, c. 40 on 29/1, max 203 on 7/4 (RJP). FōT census, summer 3, winter 115; Miranda 5 on 18/11 (BRK), 180 on 20/4 (BDH, RH). Mataitai, 65 on 7/6 (AJG). Kaawa, 3 and nest on 16/11 (JVD). Coromandel Pen: Buffalo B, 13 on 3/2 (JP); Coromandel H, 61 on 24/3 (AP); Opoutere, 4 on 26/12, one female on nest (BB). Waikato region: breeding at Waikorea, Ruapuke, Aotea H, Kawhia H, Taharoa, Marokopa (KJ, ASR, FN, BHS, ARP, SC). Kawhia H, max 515 on 12/5, including 2 birds banded in HB (RP, BHS); Aotea H, 126 on 27/6 (ASR *et al.*). Bowentown B, 230 on 13/6 (BC). Sulphur Pt, max 490 on 14/6, a Rotorua-banded bird present on 24/5 (BC, LB, DI, AMcC, RP, BS); Maketu, 56, including bird banded at Otamarakau, on 23/5 (JI, RP); Little Waihi, c.50 on 14/2, 86 on 23/5 (JI, PCML, RP); Otamarakau, 4 nesting pairs and 3+ non-breeders on 21/10 (PB); Pīkōwai/Henepuru, 5 on 27/8 (PCML). Ohope Spit, 6 or more pairs nesting on 23/11, max 484 on 23/5 (PCML). Muriwai Lag, 12 on 15/11 (BGJ, SCJ). Mahia, Oraka Est, max 24 on 29/12; Wairoa R Est, max 50 on 14/6 (GAF). HB river census on 25-26/10: Ngaruroro R 480, Tutaekuri R 509, Tukituki R 1149; Lower Mohaka R, 57 on 9/11 (KVT). Mangatahi, Ngaruroro R, flock of c.30 mixed juvs and adults feeding on 21/12 (PWT, MT). Porangahau E, 108 on 27/6 (BDH, HAR, JGH, RMH). Wanganui E, max 29 on 2/5 (PFB, OT). Rangitikei E, 95 on 14/4 (WRJ, MO, MO). Ohau Est, max 55 on 22/6 (WRJ, MO, MO). Turakina Est, 30-40 on 14/3 (PFB, GR, OT). Hokio B, 1 on 25/2 (MO, MO) Manawatu E, max 89 on 20/4 (RAC, SEC, LJD, RS, PS, JLM, MM).

MONGOLIAN DOTTEREL *C. mongolus*

FōT, Access Bay, 1 on 8/10 and 1 at limeworks on 19/12 (BHS). Porangahau E, 1 on 27/6 (BDH, HAR, JGH, RMH).

LARGE SAND DOTTEREL *C. leschenaultii*

FōT, Access Bay, 1 on 7/11/85 and 5/6/86 (GE, TGL, RBS). Manakau H, Karaka, 1 on 21/9 (DGB) and 29/1 (PB, RF, AVS), 3 on 27/3 (RL).

BLACK-FRONTED DOTTEREL *C. melanops*

Kaituna Cut, 1 in May (FN). Ahuriri E, 12 on 5/7, 11 on 1/11, 8 feeding in flooded field on 29/3 (PWT, MT). Clive, 8 on 5/7 (KVT). Waitangi, 9 on 5/7 (KVT). HB river census on 25-26/10: Ngaruroro R 145, Tutaekuri 200, Tukituki 341; Lower Mohaka R, 29 on 9/11 (KVT). Porangahau E, 7 on 27/6 (BDH, HAR, JGH, RMH). L Hatuma, pair with chicks on 25/1 (BDH). Turakina E, 6 on 14/3 (PFB, GR, OT). Ohau E, 4 on 22/6 (WRJ, MO, MO). Manawatu R, east of Woodville, pairs widespread on 11/1 (PM). Otaki E, 5 in March 86 (DB).

WRYBILL *Anarhynchus frontalis*

Manukau census summer 38, winter 1366 (AJG, BB); Mangere, 500 still on 2/8/85 (RBS, SMT); Karaka, 46 on 21/9 (DGB), 56 on 15/3 (BB *et al.*). FōT census, summer 118, winter 650, but other counts show 3000 on 17/5 and 2095 on 16/6 (AJG, BB *et al.*). Half this number were back from breeding on 6/2 (BB *et al.*); Access Bay, 1200+ on 6/8/85 (RBS, SMT). Ruapuke,

1 on 21/2 (ARP). Sulphur Pt, 21 on 28/9 (BS), 67 on 14/6 (LB); Aerodrome Bay, 22 on 14/6; Maketu, 3 on 14/2; L Waihi E, 1 on 23/5 (PCML). Tukituki E, 5 on 20/9 (CFMcR, KVT); Ngaururo R, 1 male in breeding plumage on 27/10 (RJP, MT, PWT); Ahuriri E, 1 on 6/6 (MTC, ACS). Porangahau E, 1 on 16/11 (KVT), 44 on 27/6 (BDH, HAR, JGH, RMH). Wanganui E, 30 on 1/10, 34 on 5/10 (GR, OT). Manawatu E, 7 on 2/10 (WRJ, MO, MO), 80+ on 5/10 (MT, MW), 117 on 9/10 (WRJ, MO, MO), 800+ on 12/10 (GR) 60 on 22/10, 11 on 7/11 (WRJ, MO, MO), 26 on 25/1 (RAC, SEC), 48 on 20/4 (JLM, MM). Pauatahanui, 3 in Mar 86 (DB).

FAR-EASTERN CURLEW *Numenius madagascariensis*

Manukau H census, summer 8, winter 7 (AJG, BB). FoT census, summer 8, winter nil, but 9 on 19/12 (BHS) and 10 on 22/2 (BB *et al.*); Kaiua Spit, 4 on 7/11/85, 3 on 29/6/86 (RBS, GE, SMT). Kawhia H, 1 on 22/11 (FN *et al.*). Ohiwa H, 1 on 27/11 (WMH). Manawatu E, 1 from Oct to March (WRJ *et al.*).

ASIATIC WHIMBREL *N. phaeopus variegatus*

Manukau H census, summer nil, winter 2, but 12 on 29/1 (AJG). FoT census, winter 2 (AJG, BB), 1 on 17/5 (AVS, RBS). Mahia, Oraka E, 6 on 24/1, 4 still present on 28/6 (GAF). Porangahau E, 1 on 27/6 (BDH, HAR, JGH, RMH). Wanganui, 1 on 1/11 and 9/11 (GR, OT). Manawatu E, 1 on 18/10 and 25/10 (WRJ *et al.*).

WHIMBREL sp.

Manukau H, Karaka, 2 on 29/1 (AJG), 14 on 1/4 (RL). Bowentown shellbanks, 1 on 14/6; Matahui Pt, 1 on 25/3 (BC). Kaituna Cut/Maketu, 6 records Oct-May, max 4 on 1/2; Little Waihi, 2 on 23/5 (PCML). Ohope Spit, 4 on 23/11 (WMH) and 5 on 18/1 (PCML). Ngamotu Lag, Wairoa, 2 on 8/11 (YMcK, GAF). Ahuriri E, 6 on 1/11 (KVT).

ASIATIC BLACK-TAILED GODWIT *Limosa limosa*

FoT, Access Bay, 1 on 3/4, 22/4, 30/4 (RL).

AMERICAN BLACK-TAILED GODWIT *L. haemastica*

Kawhia, 1 on 27/6 (RL, ASR *et al.*). Matahui Pt, 1 on 25/3 (BC).

BAR-TAILED GODWIT *L. lapponica*

Ngunguru, 4 on 3/2, 17/2 (BW). Manukau H census, summer 11 361, winter 1314; of the summer count, 6000 were at Karaka (AJG, BB). FoT census, summer 4226, winter 472 (BB). Coromandel H, 100 on 1/9 (LB), 267 on 24/3 (AP). Aotea H, 1000 on 22/11, 100 on 27/6; Kawhia H, 2400 on 22/11, 380 on 27/6 (FN, ASR *et al.*). Bowentown shellbanks, 1400 on 8/11, 170 on 14/6 (BC); Matahui Pt, 2500 on 8/11, 1800 on 25/3, 100 on 14/6 (BC, PCML); Sulphur Pt, 300 on 28/9 (BS), 3000 on 8/11 (AMcC, NS), 110 on 14/6 (LB); Aerodrome Bay, 51 on 14/6 (PCML); Kaituna Cut/Maketu, maximum 460 on 9/11, 29 on 17/5; Little Waihi, max 586 on 15/2, 26 on 23/5 (PB, RG, PCML). Ohope Spit, c.4000 on 23/11 and 18/1, 378 on 23/5 and 21/6 (JD, PCML, WS). Muriwai Lag, 148 in Nov (BGJ, SCJ). Mahia, Oraka E, max 99 on 2/11; Whakaki Lag, 257 on 24/1; Wairoa R Est, maximum 132 on 23/3, 12 on 14/6 (GAF); Ngamotu Lag, 283 on 8/11 (YMcK, GAF). Ahuriri E, 96 on 5/7, 336 on 1/11; Awatoto, 18 feeding inland on wet grass; Waitangi, 10 on 1/11; 21 on 30/3; Tukituki E, 22 on 1/11 (KVT). Porangahau E, 80 on 16/11 (KVT), 8 on 27/6 (BDH, HAR, JGH, RMH). Turakina E, 31 on 14/3 (OT, PFB, GR). Wanganui E, 200 on 2/10 (GR, OT). Manawatu E,

max 430 on 7/11 (WRJ *et al.*). Ohau E, 11 on 25/2 (WRJ, MO).

ASIATIC DOWITCHER *Limnodromus semipalmatus*

FoT, Access Bay, one found on 6/2 (BB) and seen occasionally until 6/5 (BB, AJG, RG, SG, *et al.*).

GREENSHANK *Tringa nebularia*

Mimiwhangata, 1 with NZ Dotterels on 11/11 (AJG). Matahui Pt, 1 moulting out of breeding plumage on 6/2 (BC); still present on 14/6. This bird has been here since Nov '77 (PCML). Manawatu E, 1 on 30/1 (JL, MO, MO, MW). Ohaua Lag, 1 on 23/3/86 (GW).

MARSH SANDPIPER *T. stagnatilis*

FoT, Access Bay, 1 feeding among small mangroves (DA, PA), remained through winter (BB); frequently chased by stilts, fed in water above 'knee' almost running, with rapid shallow pecking, on 13/7 (BRK).

SIBERIAN TATTLER *T. brevipes*

FoT, 1 present from 19/11 (BB, DGB) to 30/6 (RL *et al.*); 2 on 28/3, 1/5 (RL), 3 on 29/3 (TH), 2 on 17/5 (ATn, PFB, GA). Ahuriri E, 1 on 24/10 (RP). Waikanae E, 1 on 17-22/11/85 (ATn).

TEREK SANDPIPER *Xenus cinereus*

Manukau H census winter 1, still at Karaka on 29/1 (DS). FoT, Access Bay, 1 on 8/10 (BHS), 2 on 7/12 (BB, BAE, SJD); Taramaire, 3 on a piece of driftwood on 1/2 (BHS), still 3 on 28/3 and 3/4 (RL).

TURNSTONE *Arenaria interpres*

Manakau H census, summer 130, winter 124 (AJG, BB), 225 on 21/9 (DGB). FoT census, summer 139, winter 9 (AJG, BB), limeworks, 25 on 6/4 (BRK), Access Bay, 29 on 20/4, 11 on 1/6 (BB *et al.*). Raglan H, 5 on 2/11; Kawhia H, 1 on 27/6 (ASR *et al.*). Bowentown shellbanks, 200 on 8/11; Bowentown B, 31 on 14/6 (BC); Maketu, 2 on 28/8 (PB), 3 on 12/10, 42 on 22/11, 30 on 14/2, 3 on 30/5; Ohope Spit, 1 on 23/11 (PCML). Ngamotu Lag, Wairoa, 8 on 8/11, stayed to end of month (YMcK, GAF). Clive outfall, 2 on 24/10 (RP); Tukituki R, 1 on 25/10 (RJP). Porangahau E, 13 on 16/11 (KVT). Manawatu E, 1 on 2/11 and 1/3 (WRJ, MW), 2 on 25/1 (JLM, MM, RAC, SEC).

KNOT *Calidris canutus*

Mangere Ponds, 2000 on 18/11/85, thousands more on 27/11 (GE, RBS); Manakau H census, summer 10 500, winter 2414 (AJG, BB); Karaka, 4000 + on 15/3 (BB *et al.*). FoT census, summer 3918, winter 3 but 664 between limeworks and Taramaire on 17/5, and 1150 on 16/6 (BB). Maraetai, 1200 + on 21/3 (AJG). Kawhia H, 6 on 22/11 (FN *et al.*), 1 on 27/6 (ASR *et al.*). Bowentown shellbanks, 30 on 8/11 (BC); Matahui Pt, 33 on 8/11, c.350 on 25/3 (BC, PCML); Sulphur Pt, 1 on 8/11 (NS); Kaituna Cut/Maketu, 10 on 12/10, 202 on 9/11; Little Waihi, 68 on 22/11 (RG). Ohope Spit, 8 on 23/11 (WMH). Muriwai Lag, 45 in Nov (BGJ, SCJ); Whakaki Lag, 5 on 24/1 (GAF); Ngamotu Lag, 74 on 8/11, 13 on 22/11 (YMcK, GAF). Tukituki E, 15 on 1/11, 2 on 1/4; Porangahau E, 33 on 16/11 (KVT). Wanganui E, 18 on 28/9, 30 on 2/10 (GR, OT). Manuwatu E, 17 on 10/9, 110 on 9/10, 260 on 7/11 (MO, MO, WRJ, MT, MW).

SHARP-TAILED SANDPIPER *C. acuminata*

Manukau H census, summer 18, winter 4, still 12 on 1/4 (AJG). FoT census, summer 32, still 16 on 18/4 (BHS), 4 on 20/4 (BB). Kaituna Cut, 1 on 12/10, 7 on 1/11, 9 on 9/11 (JD, PCML). Ahuriri E, 2 on 1/11; Porangahau E, 1 on 16/11 (KVT). Manawatu E, 5 on 26/1 and 15/3 (JLM, MM).

PECTORAL SANDPIPER *C. melanotos*

Manukau H, Karaka, 1 on 29/1 (AJG) and 28/4 (RL). FoT, Limeworks, 1 on 18/3 (BHS). Ahuriri E, 4 on 16/12 (MT, PWT), 3 on 23/2 (KVT).

CURLEW SANDPIPER *C. ferruginea*

Manukau H, Karaka census, summer 2 (BB). FoT census, summer 15 (AJG), but Access Bay had 21 on 6/4 (BRK) and 18 on 22/4 (RL). Whakaki Lag, 8 on 24/1 (GAF); Ngamotu Lag, 6 on 8/11 (YMcK, GAF). Manawatu E, 1 on 2/11 (JLM, MM).

RED-NECKED STINT *C. ruficollis*

Manukau H census, summer 15, winter 13 (BB, AJG); Karaka, 17 on 27/3, 24 on 1/4 (RL). FoT census, summer 2, winter 1 (AJG), but 4 on 18/3 (BHS) and still 3 on 17/5 at Access Bay (AVS, RBS). Kaituna Cut, 4 on 1/11, 7 on 15/2 (JD, PCML); Little Waihi, 4 on 23/5 (PCML). Muriwai Lag, 10 in Nov (BGJ, SCJ). Manawatu E, 1 on 22/10 (WRJ, MO, MO, MT, MW), 1 from 31/12 to 30/6 (JLM, MM). Ahuriri E, southern marsh, 4 on 28/2 (KVT).

SANDERLING *C. alba*

Kaituna Cut/Maketu, single bird seen on 9/11, 22/11 and 15/2, on last 2 occasions roosting at high tide on sandbank with other waders (PCML).

PIED STILT *Himantopus h. leucocephalus*

Manukau H census, summer 730, winter 4826 (AJG, BB). FoT census, summer 902, winter 2909; Ardmore, 1 still watching chicks on 31/10, 3 pairs nested; Clevedon, pair with nest or young on 5/11 (AJG). Kawhia H, 226 on 27/6; Aotea H, 194 on 27/6 (ASR *et al.*). Bowentown B and Shellbanks, 80 on 14/6 (BC); Matahui Pt, 450 on 14/6 (PCML); Omokoroa Golf Course, 120 on 14/6; Pahoia, 80 on 14/6 (RC); Kaituna Cut/Maketu, 53 on 22/11, 100 on 14/2, 370 on 17/5; Little Waihi, 16 on 22/11 (RG), 30 on 3/1, c.500 on 15/2; Matata, 88 on 19/7; Rangitaiki R mouth, 23 on 19/7 (PCML). Ohiwa H, 25 on 27/11 (WMH), 135 on 21/6 (JD). Waiaua E, 12 on 4/7 (WMH), 22 on 22/6 (WS). Whakaki Lag, 1060 on 24/1, 625 on 21/4 (GAF). Ahuriri E, 674 on 5/7, 354 on 1/11; L Poukawa, 200+ in July (KVT), 300+ on 27/6 (MT, PWT). L Hatuma, 500+ on 25/1 (BDH). HB river census on 25-26/10: Ngaruroro R 220, Tutaetkuri R 310, Tukituki 482; Lower Mohaka R, 35 on 9/11 (KVT). Porangahau E, 8 on 16/11 (KVT), 123 on 27/6 (BDH, HAR, JGH, RMH). Ohau E, 79 on 25/2 (MO, MO, WRJ). Manawatu E, 260 on 23/5 (JLM, MM). L Horowhenua, 37 on 23/6 (WRJ). Pauatahanui Lag, pair with 4 chicks on 2/11, Wellington H, 3 on 8/1 (JLM, MM).

BLACK STILT *Himantopus novaezelandiae*

Whangaroa, 20 + "smudgies" on 21/4/86; Waikaraka, 2 juvs in flock of 18 Pied Stilts, and 2 juvenile hybrids on 18/2/86 (BW). Ngamotu, Kaipara H, 2 hybrids ("F" plumage) on 22/11 (PA); Mairerahi, S Kaipara, 4 with

Pied Stilts on wet meadows on 7/7 (JED, MJT). Mangere Ponds, 1 with 200 Pied Stilts on 23/10 (GJA, SG). Miranda, 1 hybrid on 11/8 (BRK). Kawhia H, 4 with 9 hybrids on 11/5 and 27/6. One hybrid was banded (ASR *et al.*). Manawatu E, 1 hybrid on 13/2 and 2/5 (JLM, MM).

SOUTHERN GREAT SKUA *Stercorarius skua*

Arataki, Mt Maunganui, 1 found alive on beach after storm by N. Smith on 23/8, readily took water and food but soon died (PCML). L Onoke, 3 on 4/8/85 (RGP).

POMARINE SKUA *S. pomarinus*

Mangere, 1 harassing imm. Black-backed Gulls on 5/8 (RJHC). 1, halfway between AMDB Ponds and Kiwi Esplanade, showing typical broad wings and slow flight, on 5/2 (RC). Ohope Spit, 1 or 2 in flock with 4 (or 5) Arctic Skuas flying from Ohiwa H to sea on 18/1 (PCML).

ARCTIC SKUA *S. parasiticus*

Auckland, Milford B, 3 chasing White-fronted Terns, among feeding gannets and gulls, on 7/4/86 (BRK); Whatipu, 5 chasing White-fronted Terns on 21/11 (JED). Whakatiwai, 3 + offshore on 15/12/85 (RBS, GE). Papamoa B, 3 (2 dark phase) on 22/1; Ohope Spit, 2 (1 dark, 1 pale) on 23/11, 4 or 5 in flock 1 (or 2) Pomarine Skuas on 18/1 (PCML). Waihua, 2 flying among cliffs then out to sea on 1/2 (GAF). E Clive, HB, 4 pale phase harrying White-fronted Terns on 31/12 (CFMcR, KVT). Foxton B, 5 seen between 31/1 and 20/4 (JLM, MM).

SKUA sp.

Paraparaumu B, 1 large pale bird chasing Caspian Tern on 8/3 (ATn). Wellington H, 2 on 6/4, 1 on 19/4 and 24/4 (JLM, MM).

BLACK-BACKED GULL *Larus dominicanus*

Manukau H census, summer 297, winter 722 (AJG). FoT census, summer 604, winter 744 (AJG, BB). Kawhia H, 421 on 22/11 (FN *et al.*), 105 on 27/6 (ASR *et al.*). Bowentown Shellbanks, c.30, mostly imm, and 1 nest on 8/11 (BC). Matakana I, south end, 89 nests averaging 2.5 eggs on 16/11 (NS). Ngamotu Bar, Wairoa, c.600 adults and many chicks on 20/12 (GAF). Ahuriri E, 205 on 5/7, 151 on 1/11; Waitangi, c.205 on 5/7, 166 on 1/11; E Clive, 300 + 5/7, 17 on 1/11; Tukituki E, 75 on 5/7, c.150 on 1/11. HB river census on 25-26/10: Ngaruroro R 2134, Tutaekuri R 465, Tukituki R 1202 (KVT). Manawatu E, 400 on 15/3 (JLM, MM). Wellington H, near Petone, 2 birds on nests very close to rail tracks on 15/12; 1 incubated until 14/1; 3 part-grown chicks being fed on 10/2 (JLM, MM).

RED-BILLED GULL *Larus novaehollandiae scopulinus*

Tamaki E, gathering of 3000 birds on 3/8 (GJA). Manukau H census, summer nil, winter 518; Papakura, Old Wairoa Rd, dead bird with Kaikoura band (JP). FoT census, summer 14, winter 5798; Access Bay, 1 with palest apricot flush on belly on 20/4 (BB). Bowentown Shellbanks, 122 nests on 8/11 (BC). Ohope Spit, c.20 pairs nesting on 23/11 (PCML). Wairoa Est, 1 on 7/6, first seen for some years (GAF). Tukituki E, 100 + on 5/7, c.150 on 1/11; Napier, Marine Parade, 500 + in mixed flock with Black-bills on 10/8; c.1000 on 20/4 (MT, PWT). Wellington, Island Bay, albino with black on primaries, bill and legs red, on 19/11/85 (ATn).

BLACK-BILLED GULL *L. bulleri*

Manukau H, 1 at Yates dam on 14/6 (RL). FoT census summer 200, winter 121; Access Bay, colony starting to noisy on 11/8; nesting in association with White-fronted Terns; Mataitai, 21 on 17/7 (AJG). Kawakawa Bay, 14 on 15/6/86 (RBS, TGL). Raglan H, 1 on 27/6; Kawhia H, 1 on 27/6 (ASR *et al.*). Bowentown Shellbanks, 2 on 8/11 (BC). Little Waihi, 2 on 17/5; Otamarakau, 1 on 6/7 and 21/6; Tarawera R mouth, 14 on 6/7, 5 on 21/6 (PCML). Ohope Spit, 30-35 pairs nesting on 23/11, at least 20 imms. from fully fledged to 1 week downies on 18/1 (WMH, PCML). Muriwai Lag, 9 in Nov (BGJ, SCJ). Wairoa R bar, c.400 on 8/11, 164 nests with eggs on 15/11, about 40 well-grown young with adults on 20/12 (GAF). Waitangi, c.200 on 5/7, c.193 on 1/11 (KVT), c.100 with 25 nests on 31/12 (CFMcR, KVT); E Clive, c.340 on 5/7, c.100 on 1/11 (KVT); 30 nests beside White-fronted Tern colony on 2/1 (KVT, MT, PWT *et al.*). HB river census on 25-26/10: Ngaruroro R, 8, Tutackuri R, 62, Tukituki R, 174 (KVT). Mangatahi, Ngaruroro R, 2 nests (1 chick, 1 egg) with no other gulls in vicinity, on 21/12 (MT, PWT). Wanganui E, 3 banded birds on 31/5 (OT). Manawatu R, Oringi, 160 in flight (PM); Manawatu E, 60 on 2/1, 110 on 5/6 (JLM, MM). L Horowhenua, 35 on 23/6 (WRJ). Wellington H, near Ngauranga, 1 on 1/7, 4 on 21/5 (JLM, MM).

WHITE-WINGED BLACK TERN *Chlidonias leucopterus*

E Clive, Muddy Creek, 1 on 18/3 (ARG, KVT), 1 hawking over channel on 18/4, 'winter' plumage, frequently mobbed by Welcome Swallows; Napier, Marine Parade, 1 roosting with Black-fronted Terns on 23/5 (MT, PWT).

GULL-BILLED TERN *Gelochelidon nilotica*

Meeanee, HB, 1 hawking over field on 4/7 (KVT). Ahuriri E, 1 on 20/7, 1 in breeding plumage on 9/5. When roosting, tended to stay apart from nearby gulls and Caspian Terns (MT, PWT).

CASPIAN TERN *Hydroprogne caspia*

Ngunguru Sandspit, 8 on 29/3/86 (BW). Mangawhai, colony of c.120 pairs active Aug-Dec (MJT). Kaipara H, Shelley B Island, colony of 275 adults and 125 young on 3/12 (PT). Manukau H census, summer 20, winter 108; FoT census, summer 48, winter 132 (AJG). Wairoa R, Clevedon, 1 dived at Harrier while 2 others circled overhead, on 7/12 (TRH). Mataitai, 25-30 on 21/3 (AJG). Hamilton, L Rotorua, 1 on 28/6 (MB). Rotorua, Sulphur Pt, 14 on 5/4/86 (BRK). Bowentown Shellbanks, c.100 birds, 40 nests with eggs hatching on 8/11; 42 birds on 14/6 (BC). Matahui Pt, 12 on 8/11 (PCML); Omokoroa golf course, 7 on 8/11 (NS); Pahoia, 2 on 14/6 (RC); Matakana I, south end, 4 on 16/11 (NS); Sulphur Pt, 5 birds, 1 pair courting on 28/9 (BS), 41 on 14/6 (LB, DI); Aerodrome Bay, 61 on 14/6, 3 chasing 2 Harriers for at least 5 minutes; Maketu/Kaituna Cut, 2-3 present all year; Little Waihi, 2 on 14/2 (PCML). Whale I, 1 on 8/7 (BS). Ohope Spit, 45, few pairs nesting on 23/11; Ohiwa H, 45 on 30/6 (WMH). Waiau E, 2 on 4/7 (WS). Ahuriri E, 8 on 5/7, 7 on 1/11 (KVT), 20 on favoured mudflat roost on 29/3 (MT, PWT); Tukituki E, 8 on 5/7, 1 on 1/11; Porangahau E, 3 pair and 2 nests on 16/11 (KVT), 4 birds on 27/6 (BDH, HAR, JGH, RMH). Turakina E, 12 on 14/3 (OT, GR, PFB). Manawatu E, 46 on 28/3 (JLM,

MM). Ohau E, 3 on 25/2 (MO, MO, WRJ). Pauatahanui, 14 on 2/2/86 (JRC). Wellington H, near Petone, 1 on 10/11 and 14/1 (JLM, MM).

BLACK-FRONTED TERN *Sterna albobriata*

S Kaipara Head, Waller's Farm, 1 on 4/7 (MW). Bowentown Shellbanks, 1 first-year bird on 10/2; Matahui Pt, 3 adults on 25/3 (BC). Tarawera R mouth, 6 (3 adult, 3 first year) feeding on elvers on 16/7, 14 (8 1st years) on 19/7, 4 (1 1st year) on 21/6; Rangitaiki R mouth, 5 (2 adult, 3 1st years) on 6/7, 13 on 26/4, 21 (4 1st-years) on 21/6 (PCML). Waitangi, HB, 26 on 5/7; Tukituki E, 26 on 5/7 (this total of 52 was max for season) (KVT); Napier, Marine Parade, now seems the favoured area for HB birds, marked preference for company with Black and Red-billed Gulls and White-fronted Terns (MT, PWT). L Onoke, 12 roosting on spit on 1/6/86 (RGP). Waikanāe, 1 on 29/3/86 (CF).

CRESTED TERN *S. bergii*

Waikanāe, 1 among White-fronted Terns on 10/11/85 (JRC). Pukerua Bay, 1 on 19/11/85 (ATn).

COMMON TERN *S. hirundo*

Bowentown Shellbanks, 1 in non-breeding dress on 26/1 (BC).

ARCTIC TERN *S. paradisaea*

Rangitaiki R mouth, 1 probable on 26/4 (BC). Tarawera R mouth, 1 in non-breeding dress on 21/6 (PCML).

LITTLE TERN *S. albifrons*

Manukau H census, summer 10, winter 2 (BB, AJG). FoT census, summer 23; Taramarie, 8 on 9/11, 13+ on 18/11 (BRK), 1 on 16/6 (BB); Access Bay, 16 roosting among godwits on 7/3, 10 (5 in breeding plumage) on 6/4 (BRK). Ohope Spit, 1 on 23/11 (WMH). Manawatu E, 1 on 2 and 25/10 (MO, MO, WRJ *et al.*); 2 on 30/12, 3 on 25/1, 4 on 1/3, 1 still present on 24/5 (JLM, MM). Pukerua Bay, 1 on 19/11/85 (ATn).

WHITE-FRONTED TERN *S. striata*

Whangaumu Bay, max 100 on 15/3/86; Ngunguru Sandspit, 200 on 29/3/86; Tinopai, 190 on 13/10 (BW). Auckland region: colonies at Mangawhai Sand I, Muriwai Cliffs, Whatipu Rocks, Orakei wave-screen, and Frenchman's Cap I, ranging 50-300 pairs (GJA, JED, TRH, MJT). Manukau H, census summer 22, winter 55; FoT, census summer 977, winter 60 (AJG); Access Bay colony, 200-300 displaying and mating on 28/10 (BHS); nesting well in progress on 21/11 (BB). Opoutere, 55 on spit and 30+ on Hikanui I on 5/1 (BB). Coromandel Pen: Lonely Bay 28 chicks almost fledged on 6/2 (JP), Little Bay, Waikawau, 200+ on 3/1 (JVD). Bowentown Shellbanks, c.200 nesting on 8/11 (BC). Papamoa B, 118 flying eastwards during 30 minute period on 25/1; Kaituna Cut, c.300 fishing and roosting on 23/5 (PCML); Otamarakau, c.60 roosting on 1/1 (PB); Tarawera R mouth, c. 300 on 21/6; Rangitaiki R mouth, c.300 on 26/4; Ohope Spit, c.900 nesting on 23/11, c.20 pairs still incubating, 150 fully fledged young, 150 nearly fledged to day-old 'downies' on 18/1 (PCML). Waioeka E, c.20 pairs nesting, late Dec, 64 on 22/6; Opape, c.250 on 22/6 (WS). Wairoa R bar, c.2500 on 8/11, c.700 nests by 15/11; 40 well-grown young with adults on 20/12 (GAF). Tukituki E, c.100 on 1/11 (KVT); Black Reef, Cape Kidnappers, c.40 nests on rock ledges on 5/11 (PWT); E Clive, c.200 nests with some very young

chicks on 2/1 (KVT, MT, PWT *et al.*); Napier, Marine Parade, 132 on 4/4 (MT, PWT). Turakina E, 100+ on 14/3 (PFB, GR, OT). Manawatu E, 350 on 2/5 (JLM, MM). Waikanae, 45 on 10/11/85, c. 1600 on 8/2/86; Pukerua Bay, c.200 on 8/2/86 (JRC).

NEW ZEALAND PIGEON *Hemiphaga novaeseelandiae*

Onerahi airport, 2 on 30/9 (BW). Paranui bush reserve, 2 on 8/3 (MH). Manurewa, Hill Rd, 2 persisted in eating all guavas and dunking in bird bath, June '87 (JVD). Papakura, Red Hill, 12+ on 3/7, pair mating in tree on 22/8; male "bobbing" beside female on branch, both dozing towards dusk then moving into dense kohekohe nearby on 12/10 (BB). Hamilton, unusual occurrence of 1 bird in suburban garden in May (SN). Napier, 2 feeding on puriri fruit within city on 24/9 (PWT). Hastings, Frimley Park, 1 on 15/9; Te Awanga, 1 on 15/4 (KVT). Maraetotara, 24+ feeding in tree lucerne on 16/5 (BAJ, MJ).

ROCK PIGEON *Columba livia*

Auckland, 2 main flocks in urban area: near Roller Mills/Railway Station and Penrose container terminal, both with c.300 birds; along West Coast, Mercer Bay and between Bethels and Muriwai, flocks of up to 12 feral birds (MG, SG). Whale I, 50-100 roosting in July (BS). Herepuru, BoP, 20 on beach gathering grit on 6/7 (PCML). Tukituki R, 136 on 25/10 (KVT); Napier, Bluff Hill, 577+ roosting in crevices on 24/5 (MT, PWT); Meeanee, 600-700 in field near ripe maize crop on 24/6 (KVT).

MALAY SPOTTED DOVE *Streptopelia chinensis*

Auckland, concentrations of over 100 birds at Auckland Zoo and Mangere ponds; elsewhere widespread in gardens from Albany, Howick, Clevedon to Karaka; none west of line between Western Springs and Blockhouse Bay; only single record from Auckland Domain, where 20 years ago were large numbers (MG, SG). Papkura, Dominion Rd, "common as Song Thrushes" on 2/8 (JP); Red Hill, feeding on fallen tamarillos and passionfruit on 19/7 (BB). Miranda, 1 near orchard on 21/9 (AJG, JP). Ardmore, Mullins Rd, 20 on 18/11 (JP).

BARBARY DOVE *S. risoria*

Pakiri Forest HQ, 2 on 28/1 (MJT). Auckland, Pupuke golf course, 1 on 1/12 (JED). Mangere, 1 resident with Spotted Doves on 8/8 (JED, NR).

WHITE COCKATOO *Cacatua galerita*

Parua Bay, 1 on 4/11 (EJT). Waitakere Ranges, Cascades Park, 2 on 20/9 (JS, KS). Kumeu, Goldies Bush, flock of 10 often seen, on 10/5 (MG, SG). Manurewa, Hill Rd, 1 on 1/10 (JVD). Karaka North Rd, 30+ in pines on 4/5; Papakura, Dominion Rd, 1 in macrocarpa tree on 25/3 (JP); Glenbrook, 5 on 1/6 (MG, SG); Kawakawa Bay, 1 on 1/8 (JP). Waiamarama, Nolan Rd, 111 on 12/5 (DMW). Pukekohe E, 40 in macrocarpas on 28/5 (DA). Te Kohanga, lower Waikato R, 1 on 3/8; Waiuku SF, 27 in pines seen from Port Waikato on 16/11 (BB). Limestone Downs, south of Port Waikato, 100+ in flight in April (WW Bouskill *per* DAL). Glen Massey, near Ngaruawahia, up to 10 resident (PB). Pirongia, Waite Rd, 1 in Aug (*per* ARP). Tukituki R, HB, 3 flying across river on 6/12 (MT, PWT). Hunterville, 3 on 24/5 (RG). Pahiatua, 4 on 16/6 (WRJ). Judgeford, 1 seen on 3/10, reports of up to 11 (JLM, MM).

KAKA *Nestor meridionalis*

Puketi, 2 on 3-4/5 (BW). Goat I, resident, heard most evenings (FJT). Mangawhai Forest HQ, 1 regular garden visitor on 29/11 (JED). Devonport, 1 in garden on 7/6 (GCE). Middlemore Hospital grounds, 3 had been in vicinity for sometime, interested in a puriri tree, on 27/9 (C. Bozich *per*JVD). Papakura, Keri Hill, 1 overhead on 25/5 (JM). Raglan, 1+ on 24/5 (*per* ARP). Tauwhare, 1 during May/June feeding on fruit trees away from bush (*per* FN). Tauranga, Cambridge Rd, 2 in vicinity mid-July until 25/8 (PCML); Greerton, 2 on 10/6 (LB).

EASTERN ROSELLA *Platycercus eximius*

Awhitu Pen, Pollok Spit, 1 on 14/6 (DA, PA). Papakura, Red Hill, resident and increasing, noisy during Aug (BB). Coromandel Pen, top of Kauaeranga Valley, 2 on 29/10 (BHS). Waikato region: common in bush country from Glen Massey to Kiritehere (PB, ARP, ASP, JMR, BHS). Gordonton, 1+ miles from nearest bush, on 10/3 (DR, AT). Wellington region: Te Marua, 3 on 6/2/86 (JRC), Wilton, 1 on 5/5/86 (CF).

RED-CROWNED PARAKEET *Cyanoramphus novaezelandiae*

Leigh, Goat Island Rd, 1 on 1/7, Goat I, 1 in Garden on 15/9 (FJT). Pureora, 1+ on 1/2 (FN). Whale I, 2 seen, others heard 8-15/7 (24 were released here in Jan 86) (BS).

YELLOW-CROWNED PARAKEET *C. auriceps*

Little Barrier I, Valley Track, 1 on 26/1 (PFB).

SHINING CUCKOO *Chrysococcyx lucidus*

Papakura, Red Hill, first calls on 24/9 (BB). Clevedon, first song on 28/9, last heard on 15/1 (AJG). Awhitu, first song on 2/10 (VMR). Coromandel Pen, Kennedy Bay, a chick accompanied by pair of Grey Warblers (E. Pratt). Honikiwi, first song on 22/9 (SCh). Waihi B, 1 on Orakau Track on 2/11 (BS). HB river census 25-26/10, Ngaruroro R 6, Tutaekuri R 6, Tukituki R 13+ (KVT). Palmerston North, 1 in Hokowhitu Garden on 30/10 (LJD). Foxton B, 1 on 1/1 (JLM, MM). Khandallah, 1 calling on 25/5/86 (RNT, KP).

LONG-TAILED CUCKOO *Eudynamis taitensis*

L Ngatu, 1 freshly dead on verandah on 1/3, 1 in flight on 7/3 (IM). Little Barrier I, Waipawa Track, 18 on 25/1 (PFB). Hamilton, single birds calling in flight over suburban area, before midnight, on 8/10 and 9/10 (BRK). Taurewa Caves, near Tongariro NP, 3 seen on 23/1 (BRK).

CHANNEL-BILLED CUCKOO *Scythrops novaehollandiae*

Ngataki and then Kauri Flat, Northland, 1 in October to mid Jan (AT, AVH, RW).

MOREPORK *Ninox novaeseelandiae*

Whale I, 1 seen, others heard, 8-15/7 (BS). Foxton, Round Bush, 1 on 2/8 (JLM, MM).

NEW ZEALAND KINGFISHER *Halcyon sancta vagans*

Papakura, Dominion Road 7 birds on 25/4 (JP). Rurima Islands, 1 on large island on 16/8; Matahui Point, 2 on 8/11, 12 on 14/6; Kaituna Cut, 10 on 17/5, rarely seen in breeding season; Aerodrome Bay, 9 on 14/6 (PCML). Ahuriri E, 31 on 5/7, 4 on 1/11. HB river census on 25-26/10:

Ngaruroro R 16, Tutaekuri R 13, Tukituki R 47 (KVT). Foxton No. 3 Lake, 1 carrying food to young on 1/1, Manawatu E, 10 on 5/6 (JLM, MM).
KOOKABURRA *Dacelo novaeguineae*

Mahurangi Pen, 1 on 19/10 (SC). Leigh Cove, 4 roosting on same branch on 29/8 (FJT). Helensville, 1 on 17/4 (MB, SC).

NORTH ISLAND RIFLEMAN *Acanthisitta chloris grantii*

Little Barrier I, Waipawa Track, 20 on 25/1 (PFB). Mount Pirongia, seen on 25/9 and 15/2; uncommon species (FN, ARP). Mohi Bush, HB, 19 on 16/5 (KVT). Tongariro NP, Whakapapa area, common in beech forest, including camping ground, on 19-25/1 (BRK).

SKYLARK *Alauda arvensis*

Ardmore airfield, 16 on mown centre strip on 17/7 (JVD). Matata Lag, 20 on 19/7 (PCML). HB, common in open country (KVT).

WELCOME SWALLOW *Hirundo tahitica neoxena*

Clevedon, first return to previous year's nest site in shed on 4/4 (AJG). Matata, c.50 over lagoons on 6/7, c.300 on 19/7; Whale I, 1 on 16/8 (PCML). Ahuriri E, 16 on 5/7, 67 on 1/11; Waitangi, 50 on 5/7, 4 on 1/11; E Clive, 76 on 5/7, 1 on 1/11 (KVT).

NEW ZEALAND PIPIT *Anthus novaeseelandiae*

Spirits Bay, common on 24/4 (ATn). Awhitu Pen, 1 on 20/7 (AJG *et al.*). Waikato North Head, 1 on 20/7 (BB). Papamoa B, winter visitor in small numbers, rarely nesting in the dunes, 1 in garden on 27/6 (PCML). Waihau B, 1 on 1/2 (GAF). HB river census on 25-26/10: Ngaruroro R 4, Tutaekuri R 12, Tukituki R 17 + (KVT). Te Mara Peak, thinly scattered in June (PWT, MT). Manawatu E, 1 on 29/1, 1/3, 28/3 (JLM, MM). Karori, Wellington, 1 in garden on 13/5 (ATn).

HEDGESPARROW *Prunella modularis*

Clevedon, singing stopped on 26/11 (AJG). Manurewa, singing on 4/4 (JP). Pokeno, in swamp willows on 12/4 (DAL). Awhitu, seen near boxthorn hedge on 7/6 (VMR). Hamilton, sparse in wooded gullies on city edge (BRK). Waihi B, 2 on Orakau Track on 2/11 (BS). Papamoa, males using lupins, pampas stems, power lines as singing posts, in Aug; Kaituna Cut, still singing on 9/11 (PCML). Hastings, 1 aggressive towards House Sparrows on city lawn on 30/8 (KVT). Napier, often heard in suburbs, spring/summer, 2 feeding and calling in garden on 4/5 (PWT, MT).

FERNBIRD *Bowdleria punctata*

Awanui R, heard in raupo in March (MH). Matapouri, sightings by locals reported, mid '87 (PCML). Omaha causeway, several heard and seen on 24/8 (SC). Pollen I, several heard on 26/11 (JED). Coromandel Pen: Whangapoua, long-established colony, 1/6 (DMW); Opoutere, 30/5 established colony (BB). Clevedon, orchard by riverbank, 1 came to taped call on 27/10 (AJG, JP). Awhitu ARA Park, seen on 10/4 (VMR). Pollok Spit, 1 on 27/4 (MG, SG), 3 seen on 15/2 (AJG *et al.*). Waikato region: reports from Moanatuatua swamp, Kawhia, L Taharoa (FN, ARP, BHS). Te Maunga, at least 6 on 14/6 (JD). Matata, seen or heard on 19/7 and 26/4 (PCML). Kaweka Ranges, McIntosh Hut, 2 on 30/1 (TS). Mangatepopo Valley, Tongariro NP, 6 quickly responded to mimicked call, 1 observed closely alternated call with audible bill-cattering and trembling of wings, on 24/1 (BRK).

WHITEHEAD *Mohoua albicilla*

Little Barrier I, Waipawa Track, 71 in groups of 2- 7 on 25/1 (PFB). Waikato/King Country region: widespread south of Kawhia-Otorohanga road; recorded from Hauturu Road North, Mahoe SF, Awaroa Valley, Waitomo, Kiritehere, Herangi Range (RC, Sch, ARP, ASR, JMR); Cowans Bush, Rangitoto Range, Pureora, Pukerimu (RD, FN, BHS).

GREY WARBLER *Gerygone igata*

Whale I, quite common on 8-15/7 (BS).

FANTAIL *Rhipidura fuliginosa*

Papakura, bird with normal tail and superciliary stripe but rest of body dark grey, on 21/11 (JP). Whale I, abundant on 8-15/7 (BS). Khandallah, 1 all dark-brown on 2/4/86 (JRC).

PIED TIT *Petroica macrocephala*

Whakaangi Trig, Hihi Bush, 2 in March, thought to be northernmost sighting on record (PA). Puketi, 2 on 3/5 (BW). Waikato/King Country region: widespread reports from Karioi, Pirongia FP, Hauturu Road North, Awaroa Valley, Waitomo, Cowans Bush, Pukerimu, Pureora SF, Mahoe SF, Tawarau SF, Kiritehere, Herangi Range (RC, Sch, FN, ARP, ASR, JMR, BHS, BW). Mount Climie walkway, 2 on 17/5/86 (RNT, KP).

NORTH ISLAND ROBIN *P. australis longipes*

Skinner's Bush, Waingaro, introduced bird's singing on 29/4 (MS, RS).

SONG THRUSH *Turdus philomelos*

Onerahi, first song of season on 6/5 (PA). Papakura, Red Hill, Spur-winged Plover calls regularly incorporated into bird's song on 13/5 (BB). Hamilton, nest with 2 eggs on 6/6 (FB). Hastings, full song heard on 14/3 (KVT).

BLACKBIRD *T. merula*

Onerahi, first song of season on 13/7 (PA). Clevedon, 1 singing after rain on 23/1 (AJG). Ohaupo-Te Rore, nests in hedges spaced on average 90 metres apart (ARP). Mount Maunganui, male in full song on 6/6 (AMcC).

SILVEREYE *Zosterops lateralis*

Auckland, feeding on insects gathered from cow-pats on 22/6 (MG, SG). Papakura, Red Hill, 20+ feeding like sparrows on lawn for several hours after harsh weather on 23/8 (BB). Whale I, numerous on 8-15/7 (BS). HB, common in city gardens, easily attracted to fat and honey water during winter (KVT).

BELLBIRD *Anthornis melanura*

Little Barrier I, Waipawa Track, 28 on 25/1 (PFB). Hunua Ranges, 1 feeding on rata and rewarewa on 17/4, 2 others heard on Repeater Track and from Ranger's house, Moumoukai, on 18/4 (BB, DGB). Matata, numerous among flowering wattles on sand dunes between railway line and beach on 27/8 (PCML). Levin, 1 feeding in *Banksia* on 26/3 (WRJ). Te Marua, Plateau Reserve, 5 on 6/2/86 (JRC). Mt Climie walkway, 5 on 17/5/86 (RNT, KP).

TUI *Prothemadera novaeseelandiae*

Paranui Bush Reserve, 2 on 8/3 (MH). Waitakere, albino bird near Matuku Reserve on 20/9 (JS, KS). Manurewa, Hill Road, 3 bathing together in bird bath on 29/4 (JVD). Papakura, Red Hill, 1 singing tentatively after

a gap on 13/4. Waihi B, 2 on the Orakau Track on 2/11 (BS). Bowentown B, 2 found dead on beach on 27/2/86 (BC). Mount Maunganui, 1 dead on beach on 27/2/86 (KF). Whale I, 5 seen, 3 in aerial display on 8-15/7 (BS). Mohi Bush, HB, several feeding on supplejack berries on 12/4 (KVT). Te Marua, Plateau Reserve, 5 on 6/2/86 (JRC). Mt Climie walkway, 3 on 17/5/86 (RNT, KP).

YELLOWHAMMER *Emberiza citrinella*

Mangatangi, Bell Road, many hundreds on maize stubble on 3/5 (BB *et al.*). Hamilton, 150 on 8/10 (PC). Bridge Pa, HB, c.80 among strewn hay, on 23/8 (KVT). Moutoa, Foxton, 500 feeding in paddock with c.1000 sparrows (JLM, MM). Owhiro Bay, 257 on newly-seeded playing field on 28/9/85 (JRC).

CIRL BUNTING *E. cirrus*

Mt Victoria, several in mid-April/86 (SB).

CHAFFINCH *Fringilla coelebs*

Onerahi, first full song of season on 20/9 (PA). Clevedon, first song on 14/7 (AJG). Matata, 2 in dune vegetation on 19/7 (PCML). Whale I, numerous on 8-15/7 (BS).

GREENFINCH *Carduelis chloris*

Spirits Bay, a few on 24/4 (ATn). Papakura, Red Hill, 1 singing a whispered *sweet* call on 16/9 (BB). Awhitu Pen, 1 singing on 20/7 (AJG *et al.*). Rangiriri, 280 on 7/6 (ARP). Matata, 10-20 feeding on boxthorn berries on 19/7 (PCML). Whale I, numerous on 8-15/7 (BS). Napier, most noticeable late summer when feeding on garden sunflower seeds; Meeanee, 100+ in ploughed field littered with apples on 23/5 (MT, PWT); Ocean B, HB, small flocks eating ripe seeds of sea rocket along base of banks, on 18/6 (BMT, KVT). Moa Point, c.50 feeding at tide edge on 17/8/85; Turakirae Head, c.100 on 24/8/85 (JRC).

GOLDFINCH *C. carduelis*

Mimiwhangata, abundant on 11/11 (AJG). Papakura, Red Hill, c.50 on rosemary and seeding shrubs in cold conditions on 21/6, an unusually high count for this area (BB). Waikato region, winter flocks usually of 15-20, with a Hamilton report of up to 250 (SCh, ARP). Meeanee, HB, 300+ feeding on nettle in paddock on 23/5 (MT, PWT). Manawatu Est, 30 on 17/4 (JLM, MM).

REDPOLL *C. flammea*.

West Auckland, Redwood Park, 3 on 6/10 (SJD). Whitford Forest, 4 seen, others heard on 19/10 (AJG). Moutoukai, 5 on 4/11 (AJG, KH, JM), 2 on 16/4 (RL). Awhitu Pen, Pollok Spit, present (JP). Papakura, Red Hill, first record for area, 1 heard in first cold snap on 19/6 (BB). Churchill, Opuatia Swamp, present in some numbers on 30/12; Mangatawhiri Swamp, small numbers in Oct/86 (DAL). Meremere, present (AJG, NCP). Hamilton, ones and twos favouring suburban silver birches in autumn and early winter (BRK). Whale I, numerous on 8-15/7 (BS). Tongariro NP, common in open and scrub on 19-25/1 (BRK). Foxton B, 2 on lawn, reported as first for 15 years (M.T. Robinson *per* WRJ). Lower Hutt, 2 on 30/4 (JLM, MM).

STARLING *Sturnus vulgaris*

Mount Maunganui, Motuotau I, used year-round roost with very large numbers in winter (PCML). Whale I, roosting observed on 8-15/7 (BS).

INDIAN MYNA *Acridotheres tristis*

Fernhill, 100+ at rubbish dump on 18/10; Hastings, c.150 roosting in a single Phoenix palm in June (KVT).

NORTH ISLAND KOKAKO *Callaeas cinerea wilsoni*

Puketi, 1 on 3/5/86 (BW). Hunua Ranges, Kohukohunui Track, 9 in usual locations in Cashmore's and Mangatangi catchments on 11/11 (B. McClure, B. McMillan *per* BB). Golden Cross, near Karangahake, 3 answered taped local calls and sang for 25 minutes (BB). Oparau, Hauturu Road North, max 4 (PB, RC, ARP, ASR, FN). Rotoehu Forest, 5 seen and heard on 1/11 (PCML).

BLACK-BACKED MAGPIE *Gymnorhina tibicen tibicen*

Foxton, 1 on 30/1 (JLM, MM).

MAGPIE sp.

Whirokino, 98 feeding on floodway on 23/5 (JLM, MM).

ROOK *Corvus frugilegus*

Miranda, c.36 on 18/4/86 (RBS, SMT), 50-60 on 30/5, feeding and fighting in paddock most of day, drank from troughs even in rain (JP); Mangatangi, near school, 12 on 17/5 (RBS). Wairoa, maximum 49 on 20/1 (GAF). Te Mata Peak, 2 on 20/7 (KVT); Moore Road, Tukituki River, 50 feeding in field (MT, PWT).

**CLASSIFIED SUMMARISED NOTES,
SOUTH ISLAND**

1 July 1986 to 30 June 1987

Compiled by P.D. Gaze

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LITTLE SPOTTED KIWI *Apteryx owenii*

D'Urville I, 1 at Wells Peak on 24/9 (RP).

GREAT SPOTTED KIWI *A. haastii*

West Coast, locally common with the usual high numbers near Charleston (DJO). Glasgow Ra to Seddonville, present on 17/4 (PG, RS).

BLUE PENGUIN *Eudyptula minor*

West Coast, common and breeding. Charleston, several new burrows occupied on 17/5 (DJO).

ROCKHOPPER PENGUIN *Eudyptes chrysocome*

Papanui Beach, 1 in April (WA).

SNARES CRESTED PENGUIN *E. robustus*

Moeraki, 2 on 21/2 (JJ).

FIORDLAND CRESTED PENGUIN *E. pachyrhynchus*

West Coast, locally common with breeding colonies at Munro and Murphy Beach and at Martins Bay. Greymouth, 1 injured on 28/9, cared for and released (CSL). St Kilda, 1 on 17/1 (PS).

ERECT-CRESTED PENGUIN *E. sclateri*

Murdering Beach, 1 moulting on 16/4 (K & JVM).

SOUTHERN CRESTED GREBE *Podiceps cristatus*

L Rotoroa, Kaikoura, 3 ad and 3 chicks on 8/1 (PL), 3 on 22/9, 1 ad and 2 imm on 6/2, 4 on 8/6 (BEE). West Coast, uncommon and breeding. L Mapourika, 1 pr with 2 small young on 23/1; L Ianthe, 3 pr and 4 imm on 24/1 (BB). These appear to be the major sites, though recent records also from Lakes Moeraki and Paringa. No records from L Brunner for the last 3 years (DJO).

NEW ZEALAND DABCHICK *P. rufopectus*

L Elterwater, 1 on 17/6 (BDH).

HOARY-HEADED GREBE *P. poliocephalus*

L Elterwater, 1 on 17/6 (BDH).

AUSTRALIAN LITTLE GREBE *Tachybaptus novaehollandiae*

L Brunner, 1 juv on 23/8 (CSL).

NORTHERN ROYAL ALBATROSS *Diomedea epomophora sanfordi*

Taiaroa Hd, 10 young hatched (PS).

MOTTLED PETREL *Pterodroma inexpectata*

Front I, Dusky Sd, breeding in Nov/Dec (KM).

BROAD-BILLED PRION *Pachyptila vittata*

Fiordland, breeding in Breaksea Sd, Dusky Sd, and Chalky Inlet in 1986 (KM).

FLESH-FOOTED SHEARWATER *Puffinus carneipes*

Trio Is, 50 feeding on fish offal on 21/2 (PL).

WHITE-BELLIED STORM PETREL *Pelecanoides urinatrix urinatrix*

Hampden Beach, 1 found dead on 12/6, identity confirmed (TM).

AUSTRALASIAN GANNET *Sula bassana serrator*

Frequently seen feeding in Tasman and Golden Bays. Farewell Spit, breeding began in Nov 1983 with 70-80 nests, increasing each year until 350+ for 86-87 season; 360 young in Jan (JMH). Nelson, up to 30 seen on several occasions during July, once feeding with dolphins (GDQ, AB). Moeraki, 25+ feeding on 10/5 (PL).

BLACK SHAG *Phalacrocorax carbo*

Nelson region, frequently seen in coastal areas and in numbers less than 10 from many inland sites. Motueka Est, max of 138 on 4/1 (AC), 200+ on 10/5 (GDQ). West Coast, small numbers regularly at coastal estuaries and rivers. Grey R, max of 15 on 15/9 (PL).

PIED SHAG *P. varius*

Nelson region, seen around coastline in numbers up to 6; Rocks Rd, Nelson, 139 birds in Norfolk pines in Feb but no apparent nesting, 120 with 25+ nests in Sep (DB). L Rotoroa, Kaikoura, 20 with 4 nests with young on 8/11 (PL). Kohaihai Est, 4 on 21/11 and have been resident for last 3 years; Oparara Lagoon, 1 on 24/6; Little Wanganui Est, 1 on 21/11 and 24/6 (CSL). Buller Est, 1 on 22/6 (DJO).

LITTLE BLACK SHAG *P. sulcirostris*

Nelson Haven, none recorded this year; Waimea Est, up to 3 in Jan (AC).

LITTLE SHAG *P. melanoleucos*

Nelson region, frequently seen, particularly in Waimea and Motueka Est. Rocks Rd, Nelson, max of 40 roosting with Pied Shags in Norfolk pines in Feb (DB). West Coast, many records of small numbers at coastal lake and river sites. Maximum recorded from many sites in June, Karamea Est, 7 on 25/6; L Ryan, 8 on 6/6 (CSL). Orowaiti Est, 8 on 22/6 (DJO). Otago Hbr, 400+ during harbour count on 11/5 (PL). Shag Pt, 1 in a Stewart I Shag colony on 1/2 (ATH).

STEWART ISLAND SHAG *Leucocarbo carunculatus chalconotus*

Shag Pt, colony of c.12 on 1/2 (ATH).

SPOTTED SHAG *Stictocarbo punctatus*

Tasman Bay, present in 2-3 thousands during winter, roosting on Pepin I and feeding in the Bay and Nelson Hbr. Roost also on Motueka Breakwater, Fifeshire Rock and Abel Tasman NP coastline. Smaller numbers in Golden Bay (GDQ). Perpendicular Pt, Punakaiki, c.300 nests with young at all ages on 20/11, large numbers at the colony on 24/6; Ten Mile Rocks, 7 occupied nests on 31/8 (CSL). Waitaki R Mouth, c.200 juv on 12/5 (ATH). Oamaru Hbr, 700 on sea wall on 10/5 (PL).

WHITE-FACED HERON *Ardea novaehollandiae*

West Coast, present in most coastal and agricultural areas. Max of 18 at Rotomanu on 18/4. Mokihinui Est, 2 feeding on blowflies on a dead cow on 24/6 (CSL). Turnbull R, 1 chased and probably caught a small bird on 20/1 (BB). Southland coast, 127 during winter census on 19/7; 259 on 10/1. Oreti R, 41 on 25/10 (MLB).

WHITE HERON *Egretta alba*

Nelson region, visits most estuaries. Golden Bay 1 and Tasman Bay 1 during Nov census; Golden Bay 1 and Tasman Bay 6 during June census (GDQ). West Coast, few spring records away from Okarito breeding area. Greymouth, first 'autumn' arrivals of 2 on 10/12 and 1 during Jan (CSL). Orowaiti, first birds returned in Feb with 1 or 2 present in following months. Other records widespread from March with max numbers recorded in June. Most localities had only single birds (DJO). Oamaru, 1-3 frequently seen at lagoons south of town from Feb to May (ARB, ATH). Dunedin, regular winter visitor in small numbers to lagoons and estuaries (PL, ALN). Southland, 4 records of single birds during winter months (MLB).

LITTLE EGRET *E. garzetta*

Mapua, 1 in Nov, Aug and June (AB, PDG, RP). Heaphy Est, 1 on 6/10 (PR). Orowaiti Est, 1 on 25/6 (CSL); 2 on 31/12, 1 on 8/5, 1 on 22/6 (DJO).

REEF HERON *E. sacra*

Nelson region, not often seen, and usually in Golden Bay rather than in Tasman Bay (GDQ). Marlborough Sounds, resident pairs on the more exposed coastlines (PDG).

CATTLE EGRET *Bubulcus ibis*

Rangihæta, first sighting for the year, 7 flew in from Farewell Spit in April (EN). Takaka, max 41 on 24/8 (PL). Tasman Bay, max and latest record 47 on 3/11 (PDG, RP). Grovetown, 29 on 10/4, 62 on 12/5, 88 on 20/5, 44 on 11/6 (WFC). Greymouth, last spring record of 6 on 24/11 with 2 in breeding plumage (CSL); first autumn record of 2 on 7/4 (PG, RS). West Coast, widespread records by mid April in flocks of up to 12 (AB, CSL, DJO). Karamea, 2 large flocks until mid June (CSL). Westport, c.29 on 8/5, c.20 on 22/6, 51 on 30/6 (DJO). Taieri, 1 or 2 flocks present throughout the year; numbers varied from max of 128 on 5/7 to min of 17 on 11/12 (HB, GAG, ATH, PS). Southland, first sighting for the year 2 at Milford Sd on 29/4. Southland census, 352 on 23/8 (WJC).

AUSTRALASIAN BITTERN *Botaurus stellaris*

Nelson region, rarely seen. Wakapuaka, 1 on 15/4 (JMH). Havelock, 1 on 11/9 (AB). Waituna Lagoon, 1 on 10/1 (WJC).

GLOSSY IBIS *Plegadis falcinellus*

L. Tuakitoto, 2 in Sep. Berwick, 1 April to June (PS). Te Anau, 1 feeding in a paddock with Pukeko 2-16/5 (KM, AW).

ROYAL SPOONBILL *Platalea regia*

Nelson region, a regular visitor in winter months. Golden Bay, max 36 in June census, 1 or 2 during summer months; Tasman Bay, birds arrive in Waimea Est at end of Feb moving to Motueka Est during shooting season and return again shortly before leaving the region. Max 19 in June census (GDQ). Waimea Est, 17 on 23/4 (GW). Otago region, bred on Mauhiki I again this summer, a maximum of 27 birds and 10 nests on 14/2 (JJ). After breeding, records from All Day Bay to Karitane with max 29 at Shag R Est on 28/3 (FJT).

BLACK SWAN *Cygnus atratus*

West Coast region, recorded from many locations south to L Ianthe. Okarito, max of c.50 with some young on 23/1 (BB). L Ianthe, c.60 on 2/5 (AC). L Elterwater, 1 with 4 young on 1/12 (TJT). Otago region, recorded from coastal wetlands, many with colour-coded collars. Max numbers L Waiholo, c.1250 on 12/5; Inchclutha, 59 on 13/9 (ATH).

CANADA GOOSE *Branta canadensis*

Kongahu, 19 in mid Aug (RL). Karamea Est, 14 on 21/11 (CSL). Mokihinui Est, 3 all year (DJO). Otago region, small numbers recorded from coastal wetlands; Waitaki R Mouth, 78 on 12/5 (ATH). Southland, Acclimatisation Society census, L George 127, Waimatuku Mouth 27, L Echo 172, L Thomas 85, Waituna Lagoon 106 during mid Jan.

CHESTNUT-BREADED SHELDUCK *Tadorna tadornoides*

Buller R, 1 near St Arraud with flock of Paradise Shelduck in Dec (MC).

PARADISE SHELDUCK *T. variegata*

Bests I, Nelson, 154 feeding on pomace on pig farm in April (GW). West Coast region, many records from agricultural areas and coastal lagoons, occasionally recorded from native forest (PG, RS). Millerton, 21 flying south on 8/5 (DJO). Ward, a flock of 460 and another of 220 on separate lucerne paddocks in April (TJT). Southland, Acclimatisation Society census of moulting birds, L Thomas 6000, Redcliff Reserve 3000, Wairaki Lagoon 2400, L George 2500 in mid Jan.

MALLARD *Anas platyrhynchos*

West Coast region, recorded from many wetlands; monthly counts indicate a tendency to move between locations (DJO, CSL). Blaketown Lagoon, monthly max, 25 in Jan, 66 in Feb, c.100 in Mar, c.30 in April, 15 in June (CSL). Orowaiti Est, c.15 from Dec to 23 April, 60 on 28/4, 86 on 29/4, 15 in May and 56 in June (DJO). Westport Airport Reserve, max of c.300 on 22/6 (DJO). Cobden Lagoon, c.170 on 7/2 (CSL).

GREY DUCK *Anas superciliosa*

West Coast region, recorded in numbers less than 10 from a range of lakes, lagoons, estuaries and rivers. The following two records are higher

than most. Blaketown Lagoon, 30-40 on 25/4 (CSL). Evans Ck, N of Mt Hercules, 40 on 24/1 (BB). Oreti R, 10 during survey on 25/10 (MLB).

GREY TEAL *A. gibberifrons*

Nelson SP, up to 6 present at various times; Bells I SP, up to 100 present (GDQ). Kaikoura Lakes, a few present on 8/1 (PL). L Te Anau, 66 at south end on 19/5 (JVM).

BROWN TEAL *A. aucklandica*

Loch Maree, Fiordland, 3 on 23/5 (IF).

NEW ZEALAND SHOVELER *A. rhynchotis*

Nelson SP, fewer than 6 on occasions; Bell I SP, no accurate counts this year but would be the stronghold for this species in the region (GDQ). Motueka R Mouth, 11 ad, including 1 pr with 12 young, on 9/1 (AC). Westport Airport Reserve, 15 on 22/6 (DJO). Cobden Lagoon, 4 on 7/2, 17 on 2/5 (CSL). Blaketown Lagoon, 1 on 11/4, 2 on 25/4; L Ianthe, 1 on 24/1 (BB). L Rotorua, Kaikoura, 70 moulting on 8/1 (PL). L Waihola, c.450 on 12/5; Tomahawk Lagoon, 120 on 12/5 (PL). L Te Anau, 44 at south end on 19/5 (JVM). Oreti R, 40 during survey on 25/10 (MLB).

NEW ZEALAND SCAUP *Aythya novaeseelandiae*

L Brunner, 3 at Iveagh Bay and 53 at Cashmere Bay on 23/8 (CSL). L Te Anau, 203 at south end on 8/5; Te Anau Downs, 156 on 14/6 (JVM).

AUSTRALASIAN HARRIER *Circus approximans*

Greymouth, 1 was chased by a NZ Falcon on 10/6 (CSL).

NEW ZEALAND FALCON *Falco novaeseelandiae*

Nelson region, not common but isolated records from many locations. Grampions Hill, Nelson, 1 mobbed by 3 tuis on 5/10 (GDQ). Wither Hills Walkway, 1 on 20/8 (NJJ). Flaxbourne R, 1 pr with 2 young in Jan (TJT). West Coast region, more records than in recent years. Apart from 1 at Fairdown on 25/11 (LL), all records outside native forest were in late autumn and winter (DJO).

NANKEEN KESTREL *F. cenchroides*

Okarito, 1 female on 11/4 (GW). Awarua Bay, 1 seen twice during late July by Mark Sutton (WJC).

WESTERN WEKA *Gallinallus australis australis*

Nelson region, widespread and common in Golden Bay and Abel Tasman NP but very localised distribution elsewhere (GDQ). West Coast, usual widespread records from north of Taramakau R. Lame Duck Hut, Karangarua R, 1 on 4/11 (KJT).

MARSH CRAKE *Porzana pusilla*

Dog 1 Lighthouse, 1 found dead beneath light in Feb, positively identified. Dog 1 is 18 km across sea from the nearest crake habitat at Waituna Wetland Reserve (RRS).

PUKEKO *Porphyrio porphyrio*

Southland winter flocks, Colyers Rd 74 on 19/7; Otaitai Bush 328 on 16/7, 423 on 10/8; Bay Rd 164 on 10/5, 179 on 9/6 (MLB).

AUSTRALIAN COOT *Fulica atra*

L Rotoiti, Kaikoura, 4 on 8/1 (PL). L Wakatipu, pair with 2 juv on 11/2; L Hayes, up to 80 ad plus juvs through Feb (ATH).

SOUTH ISLAND PIED OYSTERCATCHER *Haematopus ostralegus finschi*

Nelson region, present in all estuaries for most of the year. Highest numbers in Golden Bay with greatest concentrations on Farewell Spit. Some breeding on braided section of local rivers. Howard R, 10 + 3 young on 18/10; Upper Buller R, 20 on 18/10; Matakītaki R, also recorded (GDQ), West Coast, recorded in small numbers at most estuaries. Main concentrations as follows: Karamea, 74 on 25/6, Oparara, 150-200 on 24/6, Orowaiti, 390 on 22/6 (DJO). Okari Est, 98 on 20/11, 142 on 22/6 (CSL, DJO). Inland records: Rotomanu, 1 possibly breeding on 23/8; Waikiti Down, 2 on 23/8, Waitaha Valley, 7 on 30/8 (CSL). Maruia, common and breeding, 1 chick on 19/10 (PL). Camerons Beach, Greymouth, breeding (CSL). Charleston, a southerly movement of birds at night on 10/8 (DJO). Mararoa Dam, pair with large chick on 20/9 (K & JVM). Southland coast, winter census, 1639 on 9/7; summer census, 1007 on 15/11; OSNZ camp census, 7855 on 10/1; some pairs appeared on paddocks in June, earlier than usual (MLB).

VARIABLE OYSTERCATCHER *H. unicolor*

Nelson region, widespread around coast and estuaries. Very few birds with any white, greatest numbers in Golden Bay (GDQ). West Coast, small numbers in many coastal sites. Highest numbers from: Jacksons Bay, 12 on 12/1 (BB). Okuru, 42 on 21/4 (AB). Otago region, 67 during coastal census on 27/6 (PS); Moeraki, 1 pied bird on 2/1, unusual for Otago (ATH). Southland coast, winter census, 24 on 19/7; OSNZ camp census, 34 on 10/1 (MLB). Gorge Rd, 14 on 1/5 (SLL).

SPUR-WINGED PLOVER *Vanellus miles*

Nelson region, has become more widespread and numerous in the last 10 years; some flocking in summer months. Main concentrations: Riwaka R Mouth, 100+ on 30/12; Motueka Est, 300+ in Jan (AC). West Coast, recorded from many coastal and agricultural areas. Main concentrations: Springs Jct, c.200 on 30/12 (AC); Orowaiti, 150+ on 22/6 (DJO). Mosgiel, an unseasonal nest with hatching date 12/5 (PS). Oreti R survey, 909 on 25/10 (MLB).

LEAST GOLDEN PLOVER *Pluvialis fulva*

Farewell Spit, only site recorded for Nelson region this year (GDQ). Greymouth Airfield, 2 ad and 2 juv on 27/10 and 9/11, 2 on 2/1, 10/1 and 7/3 (CSL). Southland coast, OSNZ camp census, 174 on 10/1 (MLB). Gorge Rd, 2 overwintered on fallow paddock of short grass and wet patches from 1/5 to 30/6 (SLL).

NEW ZEALAND DOTTEREL *Charadrius obscurus*

Farewell Spit, never more than 3 recorded this year; Motueka Sandspit, not seen for last 2 years (GDQ). Southland coast, present in singles and small groups from Jan to Aug, max 28 at Awarua Bay on 19/7 (K & JVM, MLB).

BANDED DOTTEREL *C. bicinctus*

Nelson region, seen throughout the year with highest concentrations at Farewell Spit. Breeds at a number of coastal sites and on some sections

of braided rivers. Howard R, 132 and 4 young on 22/11: Upper Buller R, 46 on 18/10; Matakītaki R, 132 and 4 young on 22/11 (GDQ). West Coast, widespread coastal records of small numbers in summer. Bred at Mokihinui Est, Greymouth Beach, Blaketown Lagoon, Cobden Lagoon, L Ryan and on the Maruia R. Movement of birds through the area in mid April, when highest numbers were recorded from most areas. The seasonal change in numbers is illustrated by counts at Blaketown Lagoon, 5 on 27/10, 30 on 10/4, 19 on 2/5, and 6 on 8/6 (CSL, DJO, BB, PL). Southland coast, winter census, 425 on 19/7, OSNZ camp census 900 on 10/1. Oreti R census, 460 on 25/10. Winter flocks often feed among densely packed strip-grazing sheep (MLB).

BLACK-FRONTED DOTTEREL *C. melanops*

Taieri R, 7 birds present near Outram during winter 86 (GAG). Mararoa R, 9 on 23/5 (K & JVM). Oreti R survey, 5 ad and 1 juv on 25/10. Aparima R at Thornbury, 2 egg nest on 17/11, deserted by 24/11 (MLB). Aparima R survey on 14/1: Wreys Bush to Otautau, 16 ad and 1 chick (BDH, HAR, JH-J); Otautau to Thornbury, 4 (OJL, WJC).

WRYBILL *Anarhynchus frontalis*

Nelson region, seen infrequently and seldom stay for long. Farewell Spit, 2 in Nov census. Waimea Est, 47 on 13/6; Nelson Haven, 8 on 8/10 (PDG, RP). Orowaiti Est, 1 from 28/4 until June (DJO). Oreti beach south, 6 on 19/7, 4 on 7/8, 2 on 10/6, 5 on 26/6 (MLB).

FAR-EASTERN CURLEW *Numenius madagascariensis*

Farewell Spit, only record for Nelson region. Papanui Inlet, 1 on 21/9 (ATH). Southland coast, OSNZ camp census, 11 on 10/1 (MLB).

ASIATIC WHIMBREL *N. phaeopus variegatus*

Farewell Spit, only record for Nelson region. Orowaiti Est, 1 from 28/4 to June (DJO). Waituna Lagoon, 1 on 10/1 (BDH, HAR, JH-J).

AMERICAN WHIMBREL *N. phaeopus hudsonicus*

Farewell Spit, only record for Nelson region.

BLACK-TAILED GODWIT *Limosa limosa*

Nelson Haven, 1 among godwits, which were uneasy with its presence, on 4/12 (GDQ).

BAR-TAILED GODWIT *L. lapponica*

Nelson region, present in all estuaries over summer with some overwintering. Greatest concentration on Farewell Spit. Nelson Haven, first arrivals in late Sep, reaching 800-850 by mid Oct. An overnight increase of 500-600 occurs in late Feb and numbers begin decreasing by early March (JMH). West Coast, max summer numbers: Kongahu, c.175 on 21/11; Okari Est, 54 on 20/11. Recorded from other estuaries in North Westland. Winter records: Oparara, 1 on 24/6; Orowaiti, 4 in April, 5 in May, 8 in June; Westport Airport, 1 on 10/4; Okari, 4 on 22/6 (CSL, DJO). Armers Lagoon, Kaikoura, 1 in May and June - unusual to overwinter here (BEE). Invercargill Est, Jennings paddocks on 16/9, 600 + flew in from high up, three tight flocks, landing in paddocks after circling

farm and estuary. Strong easterlies for previous three days. Southland coast, summer census 3242 on 15/11; OSNZ camp census 2646 on 10/1 (MLB).

GREENSHANK *Tringa nebularia*

Awarua Bay, 1 seen 4 times from 18/10 to 14/12 (K & JVM).

WANDERING TATTLER *T ringa incana*

Armors Beach, Kaikoura, 1 on 18/12, dark grey, its whistle ending in a long trill (BEE).

SIBERIAN TATTLER *T. brevipes*

Armors Beach, Kaikoura, 1 on 18/12 lighter grey than the Wandering Tattler and its whistle was of 5 notes and with no trill (BEE). Papanui Inlet, 1 bird identified by call, overwintered '87 (ATH). Awarua Bay, 2 on 10/1 (HAR).

TATTLER sp.

Awarua Bay, 2 seen 3 times from 18/10 to 14/12 (K & JVM).

TEREK SANDPIPER *Xenus cinereus*

Farewell Spit, only location within Nelson region (GDQ).

TURNSTONE *Arenaria interpres*

Nelson region, summer flocks mostly occur at Farewell Spit, Motueka Est and Waimea Est. Uncommon elsewhere. Motueka Sandspit, c.400 on 28/3, 7 on 30/4, 25 on 16/5 (GDQ, JMH). Southland coast, winter census 114 on 19/7, summer census 602 on 5/11; OSNZ camp census 1615 on 10/1 (MLB).

SNIPE sp. *Gallinago* sp.

L George, 2 on 12/1 (WJC). One was reported from the same location last year.

KNOT *Calidris canutus*

Nelson region: The most common wader on Farewell Spit. Regularly recorded from Motueka Est and occasionally from Waimea Est and Nelson Haven (JMH, GDQ). Okari Est, 10 on 20/11 (CSL). Seal I, Kaikoura, 2 on 22/11, 7 years since last seen here (BEE). Knot numbers have increased in Southland in recent years. This year numbers built up from Nov to Jan, when most birds were at Fortrose. The arrival of more birds late in the season is interesting, there being no indication of where they came from. Southland coast: winter census, 60 at Awarua Bay on 19/7; summer census, 469 on 15/11; OSNZ camp census, 1168 on 10/1. Fortrose Est, max of 1326 feeding on a falling tide (4 counts on 4 consecutive tides) on 30-31/1. Invercargill Est, at Sandy Pt, 202+ on 14/2; 500+ on 19/2. These 500+ may or may not have been part of the main Fortrose flock (MLB).

SHARP-TAILED SANDPIPER *C. acuminata*

Southland coast, summer census, 5 on 15/11; OSNZ camp census, 10 (at Waituna) on 10/1 (MLB).

PECTORAL SANDPIPER *C. melanotos*

Waituna Lagoon, 3 on 10/1 (HAR, JH-J). Gorge Rd, 1 on 13/5, stayed a few days with wintering Golden Plovers and Spur-winged Plovers (SLL).

CURLEW SANDPIPER *C. ferruginea*

Awarua Bay, max 9 from Dec to Feb (K & JVM).

RED-NECKED STINT *C. ruficollis*

Awarua Bay, max 28 from Nov to Jan (K & JVM).

PIED STILT *Himantopus himantopus leucocephalus*

Nelson region, flocking along the coast during winter with many more in Tasman Bay than Golden Bay during June census (GDQ). L Grassmere, 30 on 18/6 but 350 on 21/6 (TJT). West Coast: Widespread reports from agricultural and coastal areas, including 8 breeding birds at Maruia R on 19/10 (PL). Max numbers: Oparara lagoon, 24 on 24/6 (CSL); Orowaiti, 46 on 8/12, 69 on 22/6 (DJO); Green I Lagoon, Otago, 465 + on 27/1. Oreti R. survey, 488 on 25/10. Southland coast, winter census, 290 on 19/7; summer census, 249 on 15/11; OSNZ camp census 1177 on 10/1 (MLB).

BLACK STILT *H. novaezelandiae*

Nelson region, hybrid birds occasionally seen as they pass through. Motueka R Mouth, 1 type E on 31/12 (AC).

SOUTHERN GREAT SKUA *Stercorarius skua lombergi*

Breaksea Sd and Dusky Sd, breeding in Nov and Dec (KM).

ARCTIC SKUA *S. parasiticus*

Marlborough Sds, several in the western sounds on 22/2 (PL). Hokitika, 1 on 1/5 (AC).

SKUA sp.

Tasman Bay and Golden Bay, regularly seen in summer (JRJ, JMH). Motueka R Mouth, 1 pirating Black-billed Gulls on 5/1 (AC). The Glen, Nelson, 4 on 4/4 with terns and gulls (AB).

BLACK-BACKED GULL *Larus dominicanus*

Nelson region: Farewell Spit, 2 colonies of 38 and 71 nests and isolated breeding pairs noted for the first time. Boulder Bank, Nelson, largest colony with 1111 nests in Nov, 500 young banded in Dec. Bells I, 270 nests in Nov; Rabbit I, c.30 nests in Nov (JMH). West Coast: common and breeding throughout region. Bruce Bay, 3 birds feeding on rimu fruit 20-25 m above the ground. The birds were perched in the canopy and feeding in a similar style to the NZ Pigeon, 23/3/1985 (JAG). Upper Cascade R, old nests found on 27/2 (PG, RS). Max, Grey R Est, 430 + on 5/9 (PL).

RED-BILLED GULL *L. novaehollandiae scopulinus*

Farewell Spit, no breeding since Gannets began nesting there; Onekaka, some nesting on derelict wharf: Boulder Bank, Nelson, c.1200 nests in Nov (JMH). Hoopers Inlet, c.1000 on 4/9 (AJDT).

BLACK-BILLED GULL *L. bulleri*

Nelson region: Small numbers at many coastal areas in winter. Upper Buller, a previously known breeding colony not active in Nov (PDG). Tapawera, c.50 on 19/9; Maruia R, 12 nests on 19/10 (PL); Springs Junction, 30 on 30/12 (AC). West Coast: Small numbers from many coastal sites. Max: Kongahu, 105 on 25/6; Greymouth Airfield, c.100 on 2/5; Hokitika Est, c.60 on 8/6 (CSL). Neills Beach, S Westland 55 on 21/1 (BB). Oreti R survey, 63 300 on 25/10 in three main colonies, 2400, 15 000 and 44 800 (MLB).

WHITE-WINGED BLACK TERN *Chlidonias leucopterus*

Josephville, 2 in full breeding plumage, over pasture on 27/8. Redcliff Wetland Reserve, 2 on 4/11 (WJC).

CASPIAN TERN *Hydroprogne caspia*

Farewell Spit, main colony in Nelson region, c.150 nests, appears to be increasing since arrival of Gannets; Bells I, 2-3 pairs most years; Boulder Bank, normally 3-4 nests but none this year (JMH). Motueka R Mouth, c.200 on 20/9, max of 38 in Jan (AC). West Coast, small numbers throughout the year with max at Kongahu, 20 on 25/6 (CSL). N Taieri, 1 inland on 10/4 (ATH). Invercargill Est colony, 47 nests on 26/10; leg-bands sighted on 51% of adults (8 out of 16, 12/27, 11/27, 12/20, 11/18, 17/28) on 22/11. Oreti R survey, 8 downstream of Centre Bush Bridge, none upstream to bushline above Nicholas Bridge on 25/10. Southland coast, OSNZ camp census, 109 on 10/1 (MLB).

BLACK-FRONTED TERN *Sterna albostrata*

Nelson region, recorded from coastal areas in winter months. A breeding colony on the Upper Buller has dropped in size; other small colonies on braided rivers. Motueka Est, max 50 on 16/5 (AC, GDQ). Maruia R, 9 on 19/10 (PL). Mararoa Dam, 78 on island on 20/9 (KM). Oreti R survey, 298 in 3 colonies (96, 97, 42) on 25/10. Waimatuku Mouth, 717 on 15/2 (MLB); 303+ on 20/2, of which 13% (32 out of 285, 8/64, 16/100, 12/86, 11/197, 6/12) were juveniles (MLB, RRS). Colyer Rd, 22 on 22/4, 42 on 25/4, 18 on 1/6 (MLB).

LITTLE TERN *S. albifrons*

Tasman Bay, regularly seen during summer; Motueka Est, 3 in Nov (GDQ). West Coast, 3 records this year, which is unusually high. Mokihinui Est, 1 imm on 30/11; Orowaiti, 1 ad on 9/2 and 1 in winter plumage on 9/6 (DJO).

WHITE-FRONTED TERN *S. striata*

Nelson region: Present around coast in summer but seldom seen between June and Oct. Farewell Spit, no breeding since arrival of Gannets; Motueka Sandspit, occasionally breeding with up to 100 nests; Boulder Bank, Nelson, 300-500 nests in most years; first birds arrived back on 16/10, 153 young banded in Dec (GDQ). Wainui Inlet, 50+ on 25/8 (PL). West Coast: records from many coastal areas. Max: Oparara, 300-400 on 21/11; Mokihinui Est, 212 on 24/6; Hokitika Est, 200 on 8/6 (CSL). Probably bred at Oparara and Mokihinui (CSL, DJO). Okari Est, 290 on 22/6 (DJO, KS). Charleston, adults feeding young on beach on 26/1 (DJO).

NEW ZEALAND PIGEON *Hemiphaga novaeseelandiae*

Green Island, Dunedin, unusual record of a pair present over winter 1986 (ATH).

FERAL PIGEON *Columba livia*

Otago region, several records from Dunedin suburbs and Taieri Plain (K & JVM, PL, FJT).

SOUTH ISLAND KAKA *Nestor meridionalis meridionalis*

Nelson Lakes NP, a study of the birds in this area has shown the importance of honeydew on the beach trunks as food (PRW). West Coast,

recorded in small numbers throughout the region. Max: L Daniells, 2 groups of 4 in Dec (PL) and Cascade R, 8 on 26/2 (PC, RS). Charleston, 1 outside of usual range, calling at night on 3/12 (DJO)

KEA *N. notabilis*

Mt Cobb, NW Nelson, present on the higher tops in flocks of up to 12 birds during April. Recorded from many localities west of the main divide and south to Fiordland. Most mountain records are during summer months, and sightings at lower altitudes are usually restricted to the winter. The former probably reflects a movement by ornithologists and the latter a movement by the birds (PDG). Haast Motor Camp, 1 on 20/8 (AJDT).

YELLOW-CROWNED PARAKEET *Cyanoramphus auriceps*

Pelorus Bridge SR, 1 or 2 birds present throughout the year (PDG). Te Anau township, 1 seen on 4 occasions from 4/7 to 12/9 (K & JVM).

SHINING CUCKOO *Chrysococcyx lucidus*

Ward, first birds seen in October but not calling (TJT). West Coast, most records between Oct and Jan. Last record, Charleston on 10/3 (DJO). Dunedin, first heard on 8/11 (ATH).

LONG-TAILED CUCKOO *Eudynamys taitensis*

Nelson region, recorded infrequently and then usually from high-altitude beech forest (PDG). West Coast, would expect people to report this species but very few reports in the last 3 years, despite keen trampers in the region who regularly report Blue Duck, kaka, parakeet and robin. This may indicate a real decline in numbers (DJO). Okarito 2 on 21/1 (BB).

MOREPORT *Ninox novaeseelandiae*

West Coast, a few widespread records from forested parts of the region; Greymouth, present within the township (CSL).

SPINE-TAILED SWIFT *Chaetura caudacuta*

Greymouth, 1 on 20/4; Twelve Mile Bluff, 1 on 7/5; only 2 other records from West Coast during the last 10 years (CSL).

NEW ZEALAND KINGFISHER *Halcyon sancta*

Invercargill coastal area, last sighting for year on 22/10; first sighting for 1987 on 4/3. Apart from Stewart I, there seem to be no records of Kingfishers breeding in Southland (MLB).

SOUTH ISLAND RIFLEMAN *Acanthisitta chloris chloris*

West Coast, many records from southern part of the region but few records from north of the Grey R; this probably reflects observer activity (DJO). Mokikinui R, present on 18/4; Fossil Ck, Paparoa Ra, c.10 on 11/4; Arthurs Pass, common in July (KS).

ROCK WREN *Xenicus gilviventris*

Fox Glacier, c.10 on 18/4 (CSL). Beresford Pass, 2 on 1/3; Four Brothers Pass, 2 on 2/3; Olivine R, 2 on 3/3 (PG, RS).

SKYLARK *Alauda arvensis*

Turnbull R, the most southerly record from West Coast, 4 on 20/1 (BB).

WELCOME SWALLOW *Hirundo tahitica neoxena*

Widespread summer records from northern West Coast but not noted through South Westland and Arthurs Pass in late Jan, apart from: Turnbull R,

2 on 20/1 (BB). Some evidence of winter flocking: Westport Beach, 50+ on 22/6 (DJO, KS). Greymouth Airfield, 20+ on 12/6; Cobden, 20+ on 12/6 (CSL). Present in Westport suburbs during winter for the first time. Movements: Cape Foulwind, 53 flying north during 2 hours on 2/5 (DJO). 1985/86 CSN reported 1 pair breeding at Te Anau but, although a nest was built, the birds did not breed. A similar occurrence in 1986 (KM). First confirmed breeding at Te Anau in 1986 when 2 broods raised from 3 nests; 2 adults in moult on 5/4 (KM, MLB). Pigeon I, Fiordland NP, 2 on 14/5 (IF).

NEW ZEALAND PIPIT *Anthus novaeseelandiae novaeseelandiae*

West Coast, a few widespread records from coast, pakihi and open tops (CSL). Records from infrequently visited areas: Glasgow Ra, present on 17/4; 1000 acre Plateau, present on 20/4; Rockburn, 2 on 4/3 (PG, RS). Arthurs Pass, 1 on 25/7 (KS).

SOUTH ISLAND FERNBIRD *Bowdleria punctata punctata*

Bluff Hill, 1 juv in scrub on SW face on 19/4 (MLB).

BROWN CREEPER *Finschia novaeseelandiae*

West Coast, recorded from forest throughout the region. Charleston, fairly common and breeding, some local dispersal from Jan to July (DJO).

YELLOWHEAD *Mohoua ochrocephala*

Makarora R, up the gorge from Davis Flat, several in a mixed flock of c.20 birds with Brown Creepers, 2 seen separately (BS, PB),

GREY WARBLER *Gerygone igata*

West Coast, common and breeding throughout region (DJO).

SOUTH ISLAND FANTAIL *Rhipidura fuliginosa fuliginosa*

West Coast, some autumn/winter dispersal away from preferred forest habitat: Westport High Street, 1 in April (DJO). Greymouth, 2 in a suburban garden on 18/6 (CSL). Southland, widespread reports of absence from usual sites, or reduction in numbers in winter and spring; signs of recovery in summer/autumn with high proportion of juvs to adults (RRS, MLB).

SOUTH ISLAND ROBIN *Petroica australis australis*

Charleston, noticeable lack of the usual post-breeding dispersal into the area; only one recorded from 17/1 to 31/1 (DJO).

BLACKBIRD *Turdus merula*

West Coast, male bird collecting nest material on 18/1 (CSL).

SILVEREYE *Zosterops lateralis*

Millerton, morning observations on the movement of autumn flocks showed the following southerly bias: 142 south and 91 north on 12/4, 218 south and 3 north on 13/4, 267 south and 3 north on 8/5 (DJO).

TUI *Prothemadera novaeseelandiae*

L Mahinapoua, 1 ate shell of a fowl's boiled egg on 24/1. Arawata R, 1 disputing territory with a NZ Pigeon on 21/1 (BB).

CIRL BUNTING *Emberiza cirrus*

Nelson Haven, regularly seen flocking with Yellowhammers during winter months (GDQ).

CHAFFINCH *Fringilla coelebs*

Millerton, 58 flying north on 12/4. Cape Foulwind, northerly movements noticed in early morning during autumn, 120 on 28/4, 157 on 2/5, 202 on 3/5 (DJO).

GREENFINCH *Carduelis chloris*

Millerton, an obvious northerly movement in the early morning in autumn, 280 on 18/4, 76 on 8/5. Cape Foulwind, similar observation, 150 on 2/5, 288 on 3/5, 185 on 16/5, 151 on 6/6 (DJO). Turnbull R, 1 on 20/1, extends knowledge of a patchy distribution on the West Coast (BB).

GOLDFINCH *Carduelis carduelis*

Millerton, a northerly movement during early morning in autumn recorded as follows: 92 on 12/4, 79 on 18/4, 51 on 8/5. Cape Foulwind, similar northerly movement recorded as follows: 324 on 28/4, 124 on 30/4, 804 on 2/5, 288 on 3/5, 288 on 16/5, 865 on 6/6 (DJO).

STARLING *Sturnus vulgaris*

Turnbull R, roosting on small offshore islands on 20/1 (BB).

WHITE-BACKED MAGPIE *Gymnorhina tibicen hypoleuca*

Nelson region, absent from Golden Bay and most of the Waimea Plains. A few resident birds at Tapawera; infrequently encountered in the Buller Valley. Karamea, usually absent, 1 in August (RL). Springs Jct, 10 seen from road during 40 km drive to the north on 13/1 (AC). Te Anau, 2 on 1/1 (AW).

ROOK *Corvus frugilegus*

Karamea, 1 in November (RL). Springs Jct, 2 on 19/10 (PL). West Coast, c.6 records in the past 10 years (DJO). Clydevale, Clutha, a rookery of 28 birds, 1986-87 (PS).

SHORT NOTE

Development of Spotless Crake chicks

The young chicks of the genus *Porzana* are usually covered with black down but often have brightly coloured bill, feet and iris. A few species also have areas without down, e.g. the crown of the head in *P. carolina* or the middle of the back in *P. flavirostra*. The chicks of many species of *Porzana* have not been described, and the functions of coloured and bare areas have been inadequately explained. Ripley (1977) described the colour of the down of 11 species of *Porzana* chicks. He did not mention those species with areas devoid of down, and described the bill colour of only three species. The change in colour and morphology with development are described for only a few species such as *P. flavirostrum* (Watson 1969, Schmitt 1975) and *P. carolina* (Kaufmann 1987).

I raised two Spotless Crake (*Porzana tabuensis*) chicks and correlated their development and age. I hope these notes will add to the descriptions of *Porzana* and enable ornithologists to tell the ages of crake chicks.

METHODS

Two Spotless Crake chicks were taken from their nest about 12 hours after they hatched on 22 and 23 October 1982 at Pukepuke Lagoon, Manawatu. I kept them in a cardboard box with a saucer of water and with an electric lamp for heat. I fed them a mixture of hard-boiled egg yolk, dog food, and small pieces of raw liver; occasionally I gave them insects. At first I offered them food from a forceps but stopped when they were able to feed themselves. I weighed them on a Pesola spring scale and measured the length of their culmen, middle toe plus claw, and tarsometatarsus every other day for 40 days, and once a week for the following month. The tame crakes were given to the Mount Bruce Reserve on 26 December 1982.

RESULTS

General body growth: The crakes grew quickly in size and weight during their first month (Fig. 1A). The crakes reached asymptote weight at one month. The loss of weight, beginning with the fifth week, was associated with the growth of the body feathers. The bill grew slowly but steadily during the first five weeks (Fig. 1B). The tarsi and toes lengthened rapidly in the first two weeks and more slowly in the next two weeks (Fig. 1C and 1D). I believe the small regressions of length of tarsi and toes are real because they occurred in both crakes. I have noticed similar regressions in measuring chicks of Soras (*Porzana carolina*) and Virginia Rails (*Rallus limicola*). However, the fluctuations in bill length in the last two weeks are probably artifacts of measuring because the base of the upper mandible was not distinct at this time. The wings, although not measured, appeared to grow very slowly in the first three weeks.

Feeding and begging behaviour: The crake chicks readily ran to the food offered in the forceps from the first day, frequently stopping to beg. Begging consisted of sitting on their tarsi and toes and waving their wings asynchronously. One chick stopped begging at 23 days but the other still

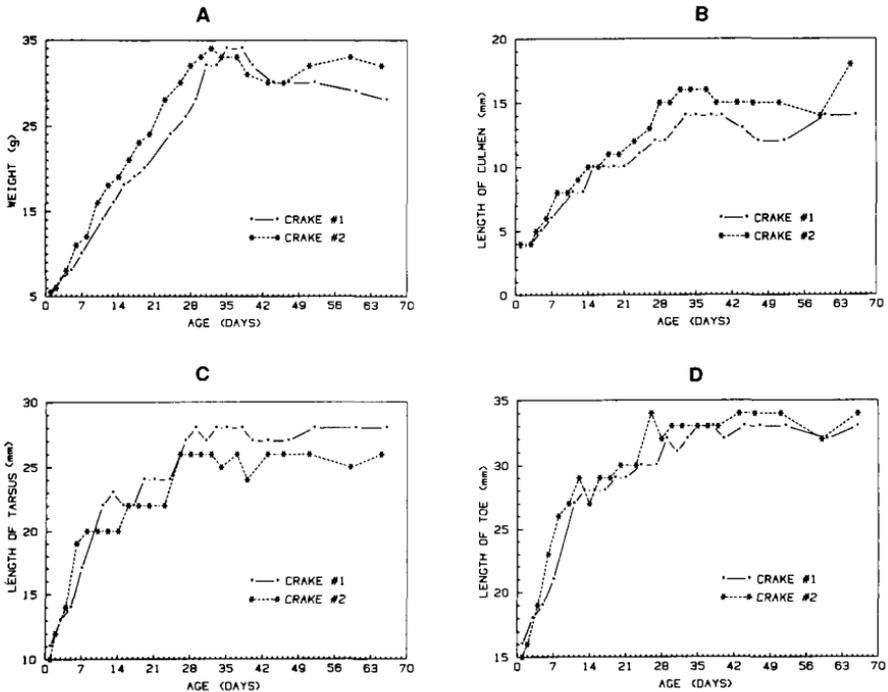


FIGURE 1 — Growth of two Spotless Crakes in weight and in length of bills, tarsi, and toes

begged at 6 weeks. They both ran toward the food-laden forceps but seemed increasingly afraid of the hand which held the food.

On the third day, chicks started to feed on moving live food by themselves, but they did not take the dog food until the seventh day. They fed on dog food without assistance by 17 days, but probably would have done earlier if they had been given live food. They began washing their food at 19 days.

Some maintenance behaviour: The chicks began to defecate in their water bowl the first day and deposited about 75% of their faeces in it by the third day. At 17 days, only about 25% of their faeces was deposited in the water. The chicks were drinking water by the third day and bathing by the fifth day. They usually bathed whenever the water bowl was cleaned, as the chicks rapidly fouled the water with faeces and washed food.

Bill colour: The bright white eggtooth on the tip of the upper mandible is the most conspicuous part of the bill of the newly hatched chicks. The lower mandible is black, as is most of the upper mandible. The nares are pink, and a narrow band of pink across the top of the upper mandible connects the two. The eggtooth is creamy white by the fifth day. The tooth dropped off one chick at 13 days and the other at 15 days. The bill remained black except for the pink nares and band of pink across the top for 3 weeks. Then the pink area expanded from the nares and also on the lower mandible

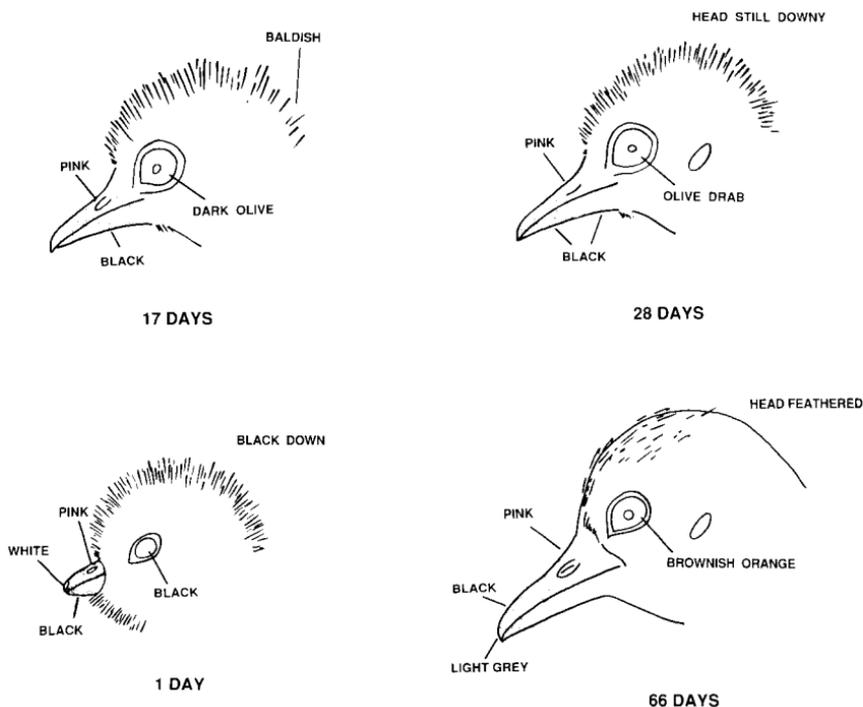


FIGURE 2 — Head coloration of Spotless Crake chicks of 1 day, 17 days, 28 days, and 66 days of age

below the nares. At 4 weeks the band of pink was 1.5 mm wide across the the upper mandible and 4.7 mm across the lower mandible. The pink area expanded to include the lower third at the base of both mandibles at 66 days. In addition, the tips of both mandibles were light grey (Figure 2).

Iris pigmentation: The eyes of the chicks were black at hatching and were surrounded by black skin, covering most of the sides of their heads. The iris became increasingly olive, changing from dark olive to olive drab by the end of 1 month. The iris then increased in orange pigmentation, to brownish orange at 40-66 days. The iris of breeding adults is bright red.

Tarsus and toe colours: The tarsi and toes of the newly hatched chicks were dark brownish grey, grading to pink behind the tarsi and under the toes. At 1 month, they were dark brown with pink on the joints and between the scales. At 7 weeks, the tarsi were grey-brown with salmon in between the scales, and the toes were light grey-brown above, grading to light salmon below. The tarsi and toes of breeding adults are bright red.

Plumage: The newly hatched chicks were evenly covered with black down, which had a greenish sheen in the sunlight. However, the back of the head appeared to be going bald at 18 days as the down became thinner there. Emergence of juvenile feathers began at 15 days, when shed black down was in their water after bathing, and the feathers of the ventral and crural

tracts appeared on the breast and legs. The feathers of the ventral tract continued to emerge toward the neck and abdomen, and at 21 days all the feathers had begun emergence from the neck to the posterior abdomen. At 29 days, the ventral feathers had completely emerged, being white in the cervical area, whitish grey on the breast, and brownish grey on the abdomen. The feathers of the crural tract were continuous with those of the ventral tract at 21 days, and covered the upper half of the leg. The spinal tract began emerging between the base of the neck to between the wings at 21 days; by 29 days these feathers were well opened and dark brown, but the posterior spinal tract still had down with a few brown feathers. The femoral tract began emerging at 19 days; the feathers were brownish grey at 29 days. The undertail coverts began emerging at 19 days. The head was still down covered at 29 days. At 40 days all feathers had at least partly emerged, including those on the head and wing.

The first evidence of the growth of primaries and secondaries was the elongation of the shaft of the down feathers at 21 days. The sheath of the primaries and secondaries appeared a few days later. The sheaths measured 3.3-7.4 mm at 24 days. At 40 days the sheaths were 15-18 mm and the feathers 18-26 mm, and at 52 days, the sheaths were 7-17 mm and the feathers 39-49 mm, and the crakes could fly. At 66 days, the feathers had still not completely emerged.

DISCUSSION

Boyd & Alley (1948) noted that bright head coloration in rail chicks was rare in more primitive genera such as *Rallus* and *Porzana* and more frequent and elaborate in more recently specialised genera such as *Fulica*. They speculated that bright coloration functions to stimulate the adults to feed the young, and is more prevalent in bolder, aquatic species. As most rail species feed their chicks, I believe the function is more complex than this. The brightest coloration of *Porzana* chicks occurs in *P. carolina*, a migratory species which breeds in ephemeral habitats and has the largest clutch size (maximum of 18 eggs) and span of hatching of the clutch of all *Porzana*. The bill of *P. tabuensis* is undoubtedly conspicuous enough to help the adults direct the food to the chick's bill. Perhaps that is all that is necessary in more sedentary species with lower clutch size and little asynchrony of hatching. More work must be done on the breeding biology of *Porzana* species before further comparisons can be made.

ACKNOWLEDGEMENTS

I thank Ralph Adams and Malcolm Crawley for logistic support and use of Pukepuke facilities; Murray Williams for making the arrangements; and Andy Grant for helping with the field work and taking measurements when I was absent.

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A Ruff at Lake Wainono

On 1 November 1987, I found a Ruff (*Philomachus pugnax*) at Lake Wainono, South Canterbury. When first seen the Ruff was feeding among Knots (*Calidris canutus*) and Bar-tailed Godwits (*Limosa lapponica*) at the northern end of the lake. It appeared similar in body size to the Knots but had longer legs. I made the following description using a x25 telescope from 20 m away.

Head, light buff with a short dark stripe behind the eye. Crown darker brown, continuing down the hind neck to back. Foreneck and breast streaked buff with a clear-cut pectoral line; rest of underparts white. Back brownish. Buff fringe to the dark wing-coverts gave a distinctive scaly appearance. Scapulars yellowish with black tips, forming a light patch above the coverts. Tail dark with lateral tail-coverts white. Underwing white with black tips to the primaries and a darkish leading edge near the carpal joint. A narrow white wing-bar showed in flight. Bill black, rather sturdy, straight and about head length. Eye dark and legs greenish.

Further observations were made at the south end of Lake Wainono two hours later, where I was able to photograph the Ruff with a 300 mm lens. Here the Ruff fed in shallow water (less than 5 cm), loosely associated with a small group of Wrybills (*Anarhynchus frontalis*) and Sharp-tailed Sandpipers (*Calidris acuminata*).

Compared with the Sharp-tailed Sandpipers, the Ruff was larger, with longer legs, a more elongate neck, and a disproportionately small head, and it had an upright stance. It fed with a rapid pecking motion similar to the sandpipers, and occasionally ran a few metres to a new area of the pond before feeding again. It flew erratically, with rapid wingbeats, and usually glided in to land. The Ruff was harassed twice by Pied Stilts (*Himantopus himantopus*) but chased Knots which appeared to approach too closely to it; otherwise it seemed indifferent to the waders around it.

Ruffs are sexually dimorphic in size, reeves (females) being distinctly smaller. The small size of the bird I saw indicated that it was a reeve. The buff (rather than white) sides to the head, scaly-looking coverts and greenish legs suggested that it was a juvenile (Cramp & Simmons 1983).

The Ruff was also seen by R.J. Pierce on 10 November.

There have been three previous records of Ruff in New Zealand. One was at Colac Bay, Southland, from December 1984 to March 1985 (Miskelly & Cooper 1985), two were at Lake Ellesmere, Canterbury, from December 1984 to January 1985 (Harrison *et al.* 1985), and one was in Hawke's Bay in November 1985 (M.J. Imber, *in litt.*).

I thank Ian McLean and Colin Miskelly for criticising this note.

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