

# New Zealand Bird Notes

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## CENSUS OF GANNETS IN NEW ZEALAND.

A periodical census of species of birds is of great importance in providing information in respect of the biological status of a species, whether it is on the increase or decrease, or whether the prevailing conditions of protection are effective enough to preserve it. A census gives information on many problems which are related to ecology and the control of Wild Life.

There are few species of gregarious habits during the breeding season of which numbers can be reliably estimated. The Gannets, breeding year by year on small islands or rocks, sometimes for centuries, are birds of which the breeding population can be accurately estimated and its trends surveyed. James Fisher and H. G. Vevers (1939 and 1943), assisted by a team of British ornithologists, have recently made a census of the North Atlantic Gannet (*Sula bassana*) which breeds on rocky islands around the British Isles, Iceland and the eastern coast of Canada. Fisher and Vevers were able to obtain the trends of population in different gannetries and assessed the world population of this species in 1939 as 165,600 breeding adults.

An estimation of the population of the Australasian Gannet (*Sula serrator*) in Australia is being undertaken by

Mr. S. Fowler and Dr. D. L. Serventy, under the aegis of the Fisheries Department of the Australian C.S.I.R.

One of us, with Professor C. P. McMeekan, has recently made a census of the Cape Kidnappers gannetry and outlined the distribution of New Zealand gannetries and their estimated population, based mainly on figures supplied by Dr. R. A. Falla. Most estimates are, however, a dozen or more years old.

Known New Zealand gannetries are:—

NORTH ISLAND.

Three Kings (Princes Islets).	Oaia Island (off Muriwai Beach).
Poor Knights (Sugar Loaf)	Alderman and White Islands (Bay of Plenty).
Great Barrier (Mohuki Island)	Gannet Island (off Kawhia).
Coromandel Islets.	Cape Kidnappers.
Gannet Rock (Hauraki Gulf).	

SOUTH ISLAND.

Nugget Islets and Solander Island.

At the annual meeting of the Society on May 25th a gannet census in the 1946-47 breeding season was approved as a project and the organisation of a scheme was entrusted to the undersigned.

A gannet census presents difficulties; some of the gannetries are hard to get at and these may be tackled by using aerial photographs. However, other gannetries can be easily approached. It is possible that a small grant (e.g., covering the expenses of hiring a launch) may be available. Would members who live near New Zealand gannetries, or who may visit some this year and who may be able to collect the necessary information, write to one of us for an outline of the information which is desired?

Any information on past numbers and conditions at the breeding colonies, their protection or deprecations, etc., will be acceptable.

Topics not directly related to the census—such as the occurrence of immature birds at sea, distance from nearest gannetry of birds at sea, etc.—can be embraced within the scope of the project.

K. A. WODZICKI.

C. A. FLEMING.

c/o Department of Scientific and Industrial Research,  
Wellington.

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Wodzicki, K. A. and McMeekan, C. P.—(1946.) “The Gannet on Cape Kidnappers.” *Trans. R.S. of N.Z.* (in print).

GANNET CENSUS.—Members able to take an active part in the proposed gannet census may wish to read the reports of the 1939 Atlantic Gannet Census by Fisher and Vevers. A set of these papers will be available for loan, after binding, to such members. Applications for loan should be addressed to the Recorder, C. A. Fleming, 79 Duthie Street, Wellington, W.3.

PETRELS CAST ASHORE BY AUGUST GALES, 1946,  
WITH SPECIAL REFERENCE TO PACHYPTILA  
VITTATA.

By E. G. TURBOTT and R. B. SIBSON.

The following account of the broad-billed prion (*Pachyptila vittata*) and other petrels destroyed by rough weather in August, records specimens and information obtained by the Auckland Museum and by local members of the O.S.N.Z. It is hoped that a full account of the effects of the storm will ultimately be compiled for the whole New Zealand area.\*

A growing body of information upon the distribution and breeding habits of the petrels is available, but Falla (2) points out, in referring to the prions, that there is still an outstanding lack of accurate information as to winter feeding range.

The destruction of oceanic birds by storm is essentially an incident in the course of an annual breeding and feeding rhythm which is rigidly controlled by the food organisms of clearly marked zones of surface water. As Murphy (1) suggests, strong winds form part of the oceanic environment, and do not prevent petrels from feeding at sea. With stronger gales, however, the birds may be forced to drift down wind. They continue to feed while sufficient food organisms remain near the surface. Except in the case of a prolonged storm, which may eventually cause the plankton organisms to descend out of range, the birds are in no danger unless they reach the neighbourhood of a lee shore. Here they exhaust themselves fighting against the wind, and are finally washed up in the surf or blown inland in a starved or dying condition.

AUGUST WEATHER IN THE SOUTH TASMAN.

It became apparent in the second week in August that large numbers of *P. vittata* were succumbing to the rough weather in the Tasman Sea. Although not abnormally prolonged, the storm produced strong south-westerly winds over the whole of the south Tasman, and severe squalls were experienced in the Auckland district. The following summary of the weather for this period has been furnished by Mr. E. F. Dodson, through the courtesy of the Meteorological Office, Auckland: On August 4 and 5 a very vigorous depression formed to the south of Tasmania and passed to the south-east over Campbell Island. As it passed south-east it caused unusually strong south-westerly gales behind it, and on August 6 there was a very strong south-westerly flow over the whole of the south and south-east Tasman Sea. On August 7, 8 and 9 a second depression followed much the same track. This second storm was not quite so intense as the first, but it served to maintain the south-westerlies over the period. Throughout this period trans-Tasman aircraft reported very strong south-westerly surface winds and seas over the eastern portion of their route, i.e., off the west coast of the North Island.

RECORD OF SPECIMENS.

1.—The Broad-billed Prion (*Pachyptila vittata*).

A glance through the specimens in the Auckland Museum shows that July and August are the months when storm-wrecked *P. vittata* are most

\* Mr. J. H. Cunningham has made a request through the Press for information on behalf of the O.S.N.Z.

commonly found on the west coast beaches of Auckland. This year (1946) Mr. H. R. McKenzie covered 4½ miles of Muriwai beach on August 3, when the only petrels ashore he could find were one nelly (*Macronectes giganteus*) and one fairy prion (*Pachyptila turtur*).

On August 9 a broad-billed prion was picked up near Helensville; but the first intimation that as a result of south-westerly gales exceptionally large numbers of this species were perishing was the finding on August 11 of twelve specimens, freshly dead, along some three miles of Manukau Harbour coastline opposite the rather narrow entrance. On the ensuing days broad-billed prions began to reach the Auckland Museum from numerous localities, both inland and on the west coast, between Tahekeroa, North Auckland, and Himatangi Beach, Manawatu.

By August 18, 44 specimens had been recovered from Manukau beaches, and on the same day 68 were found on the southernmost three miles of Muriwai beach. More dead birds were still coming ashore; and the 68 found represent only a fraction of the broad-billed prions that must have been stranded in the Muriwai area during and after the gales. The high wind seems to have blown the birds alive into the sandhills, and the big seas were burying many in the loose sand at the top of the beach.

An observer at Karekare, Mr. E. E. Murfitt, later wrote to the Museum saying that during this week he found two living broad-billed prions in a stream about half a mile inland. When he approached to within five yards they would rise into the air for a few feet and fall back into the water. They were in a weak condition, and were dead the next morning.

Muriwai was again visited on August 23, when over 30 broad-billed prions were found, 20 of which were in the last tide-line. A third visit on August 30 showed that dead *P. vittata* had continued to come ashore for a few more days, but of the 22 found none was very recent.

The following is a detailed list of our records of *Pachyptila vittata*.

Date.	Locality and Collector.	Remarks.
9/8/46	Near Helensville—L. Snell . . .	Adult female.
11/8/46	Mangere—P. C. Bull . . . . .	Full breeding male.
	Mangere—King's College . . . . .	Three adult females.
	Mangere—King's College . . . . .	One full breeding male.
	Ihumatao—King's College . . . . .	Seven birds; not examined.
12/8/46	Raglan—J. Peart . . . . .	Breeding male.
13/8/46	Mairangi Bay—S. Woodward . . . . .	Full breeding male.
13/8/46	Kawhia Har.—R. A. Bronland . . . . .	Non-breeding adult male.
13/8/46	Tahekeroa—P. Lindley . . . . .	Tail showed full moult; new rectrices 28 millimetres long.
14/8/46	Near Sanson—T. M. Henson . . . . .	Adult female.
	Waimauku—W. Norton . . . . .	Non-breeding adult male.
	Mangere—P. C. Bull . . . . .	Three birds.
	Puhinui—King's College . . . . .	Eleven birds.
16/8/46	Himatangi Beach—R. A. Wilson . . . . .	Two full breeding males.
17/8/46	Taupiri—Miss B. Hartles . . . . .	Full breeding male.
18/8/46	Piha, W. Auckland—E.G.T. . . . .	Twelve birds; two adult females.
	Karaka—D. A. Urquhart . . . . .	Ten birds.
	Pukaki—King's College . . . . .	Seven birds.
	Muriwai—P. C. Bull & R.B.S. . . . .	68 birds in three miles of beach; dead birds still coming ashore.
	Awhitu—D. W. Hamilton . . . . .	One bird.
21/8/46	Puketutu—King's College . . . . .	One bird.
23/8/46	Muriwai—T. W. Cox, R. Mann & E.G.T. . . . .	30 birds; c. 20 being in last tide mark.
26/8/46	Clevedon—H. R. McKenzie . . . . .	One decomposed.
30/8/46	Muriwai (3 miles)— D. A. Urquhart & R.B.S. . . . .	Twenty-two; none very recent.
30/8/46	Warkworth—W. G. Tucker . . . . .	One; decomposed.

Large numbers of dead petrels were also reported by observers at Whatipu and Karekare, on the west coast north of Manukau Heads; and on 18/8/46 a decomposed specimen was sent in from Awhitu, on the south shore of Manukau Harbour, by Mr. D. W. Hamilton.

Dissection revealed that most of the males were in full breeding condition, the testes reaching a maximum size of 17x7.5 millimetres, while females were more backward, with only moderately developed ovaries. This condition corresponds closely to the established laying period for this species, which occupies about three weeks, beginning late in August or early in September. (Falla, Richdale.)

Falla (2) gives the following list of the known breeding localities of *P. vittata*:—*P. Vittata vittata* breeds on south-west New Zealand, Stewart Island, Chatham Islands, Tristan da Cunha and Gough Island (and one non-breeding record from the Falkland Islands).

*P. vittata macgillivrayi* breeds on St. Paul Island. The species is characteristic of northern sub-antarctic waters.

Richdale (4) referring to Whero, Stewart Island, states that *P. vittata* remains in fairly close proximity to its breeding area during the winter. He found the birds completely absent from their breeding grounds only for five or six weeks after the breeding season, returning spasmodically and even occupying their burrows from early February until the pre-laying period in August.

The peak reached by storm-killed *P. vittata* in August, as recorded during this and other storms, suggests some seasonal movement of considerable numbers of this species, rather than the stationary winter distribution in close association with the breeding grounds suggested by Richdale.

The large numbers of *P. vittata* cast up in August could, however, represent birds already occupying southern New Zealand breeding stations, which have been caught feeding to the westward by strong south-westerly gales. In this respect it may prove significant that we have received no records from north of Muriwai Beach. Details of the considerable mortality reported from the west coast of the southern North and South Islands seem likely to be of particular interest.

The measurements of the broad-billed prions killed by the recent storm, as indicated by the following sample, fall within the dimensions of *P. vittata* from New Zealand breeding grounds. (Measurements in millimetres.)

Date.	Locality.	Wing.	Tail.	Tarsus.	Toe.	Culmen.		Remarks.
						Length.	Width.	
Aug.								
11—	Mangere ..	205	106	34	40	33.5	19.5	Full breeding male.
13—	Mairangi ..	208	101	35	43	35	22	Full breeding male.
13—	Kawhia ..	221	109	36	45.5	35		Non-breedg adult male.
13—	Tahakeroa	229	99	35	42.5	35.5	21.5	Tail showed full moult.
14—	Sanson ..	213	101	34	43	33	21	Adult female.
18—	Piha ..	212	106	35	41	33	21	Decomposed.
18—	Piha ..	219	106	35	43	35	22	Adult female.
18—	Piha ..	223	113	36	45	34	22	Adult female.

## 2.—Other Prions (*Pachytila* spp).

There is no doubt that broad-billed prions were the birds most affected by the gale and suffered the heaviest mortality. No other

species of petrel, not even *Pachyptila turtur*, had a comparable death roll, the losses being such as may normally be expected in winter. The following prions of other species were recovered:—

*Pachyptila salvini*.—Two, Muriwai, August 23.

*Pachyptila desolata*.—One, Manukau, August 14.

*Pachyptila belcheri*.—One, Manukau, August 14; 1 Muriwai, August 18; 1, Muriwai, August 30.

*Pachyptila turtur*.—One, Manukau, August 11; 10, Muriwai, August 18; 4, Piha, August 18; 10, Muriwai, August 23; 12, Muriwai, August 30.

In view of Falla's statement that as "winter waifs of the storm," specimens of *Pachyptila salvini* occur "in countless numbers," their almost complete absence on Auckland beaches after this gale is interesting. It is significant that there is not a single August date among those given by Falla for the occurrence of storm-wrecked *P. salvini*, and the two big "disasters" he cites are both in July, e.g., (a) 22/7/18, "Of 17 prions picked up in one field adjoining Manukau Harbour, one was *P. turtur*, one *P. vittata*, and fifteen *P. salvini*"; (b) 1/7/32, Muriwai, "Of 60 prions examined one was *P. vittata*, two *P. desolata*, one *P. belcheri* and eleven *P. turtur*, and the remaining 45 were of the *salvini* assemblage." It may be that by the second week in August, when this gale occurred, the bulk of the *salvini* wintering population of the Tasman Sea has moved away, probably south, from Auckland latitudes. It was not till August 23 that two were found, although a careful watch was kept for them when prion casualties were at their highest.

### 3.—Other Procellariiformes.

Other members of this order found dead since the gale began (at Muriwai unless otherwise stated) are:—

Diving petrel (*Pelecanoides urinatrix*).—Three on August 18 (fresh); 3 on August 18 (Piha); 7 on August 23 (fresh); 1 on August 30 (fresh).

Blue petrel (*Halobaena caerulea*).—This bird, the fourth in the Auckland Museum collection, is an adult male not yet in breeding condition. It was found lying on the road at Albany, some 15 miles inland from Muriwai, on August 12, by Miss B. Dyson.

Fluttering Shearwater (*Puffinus gavia*).—Seven on August 18 (fresh); 20 on August 23 (quite fresh, one with rigor mortis); 2 on August 20 (fresh).

Grey petrel (*Procellaria cinerea*).—This specimen, an adult non-breeding male, was found not long ashore on August 30. The skin is in the Auckland Museum.

White-headed petrel (*Pterodroma lessoni*).—One just dead on August 22. A few are found every winter.

Mottled petrel (*Pterodroma inexpectata*).—One on August 18.

Royal albatross (*Diomedea epomophora*).—One on August 23, some days old, above high tide mark.

White-capped mollymawk (*Thalassarche cauta*).—One on August 18.

Grey-headed mollymawk (*Thalassarche chrystostoma*).—One on August 18, one on August 30.

#### 4.—Southern Skua (*Catharacta skua lonnbergi*).

The August storm brought to Muriwai beach two individuals of this species, the normal associate of southern petrel breeding colonies. Although numbers of skuas apparently spend the non-breeding season at sea, they are unusual storm waifs in the Auckland district. On August 23, E.G.T., in company with Messrs. T. W. Cox and R. Mann, recorded the two birds. One, a young bird in dark plumage, was flying rather unsteadily about the beach, harried constantly by black-backed gulls. The other was lying dead a few hundred yards away in the dry sand above high water mark. It proved on dissection to be a young female; the plumage is much darker than in breeding birds, and tinged with rufous. The stomach contained only shells of *Spirula* and a small goose-barnacle. It seems probable that both birds came ashore alive, but were prevented by the black-backed gulls from feeding upon the fresh petrel bodies littering the beach. The other bird may also have become a casualty.

Earlier in the year, on April 28, the body of a southern skua was found on the beach by P. C. Bull.

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3. Fleming, C. A., "The Phylogeny of the Prions," *Emu*, October, 1941.
4. Richdale, L. E., "The Parara or Broad-billed Prion, *Pachyptila vittata* (Gmelin)," *Emu*, January, 1944.

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DABCHICK INVESTIGATION.—Members are urged to make every effort to visit lakes and pools, particularly those off the beaten track, to count and seek dabchicks (*Poliiocephalus rufopectus*). Mr. R. B. Sibson, Auckland, who is investigating the status of the dabchick in New Zealand, is anxious to obtain all possible data as to the presence and numbers of this bird. Information concerning the dabchick is particularly scarce from the South Island.

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SKUAS ROBBING RED-BILLED GULLS.—It is quite a common thing on our coast to see Arctic Skuas (*Stercorarius parasiticus*) chasing and robbing white-fronted terns (*Sterna striata*), and occasionally they chase Caspian terns (*Hydroprogne caspia*), but it is only on two occasions that we have seen one victimise a red-billed gull (*Larus novaehollandiae*). On 17/3/46, while fishing, we were attended by a red-billed gull, which swallowed several pieces of eel bait which were thrown to it. Suddenly a skua swooped in and chased the gull, which squawked harshly as it hurried off in frantic dodging flight. It dropped two pieces of bait, one of which the skua caught in the air. The second piece it took from the water, then hurried after the gull again and made it disgorge yet another piece of bait. How did it know that the gull still had a third piece? On 14/4/46 at the same fishing ground on the Clevedon coast another skua chased a red-billed gull and was successful in obtaining, second-hand, some of our surplus bait. The bird was a different skua on each occasion, as one was dark and the other had white under the wings.—H. R. McKenzie and P. H. Orum, Clevedon.

## PRESENT DISTRIBUTION OF N.Z. ROBINS.

By C. A. FLEMING, 79 Duthie Street, Wellington, W.3.

I have for some time been engaged on a review of the New Zealand Robins (Miro) and Tits (Petroica) and have been collecting information on the present distribution of these species. Detailed knowledge of distribution is of interest to this society, both to enable members to know where they may study a species when visiting other districts, and to give some quantitative basis for discussion of changes in New Zealand's bird life in the last century. In the present instance statements have been made in an accredited publication on New Zealand birds that the North Island Robin was now restricted to Little Barrier, Kapiti and the Karioi forest.

Reviews of the position of New Zealand birds have been made before, by Drummond, in 1907 ("Our Feathered Immigrants"; Bull. Dept. Agr. No. 16\*) and Myers (N.Z. Journ. Sci. and Tech., vol. 6, pp. 65-99, 1923) for instance; these, and other surveys allow a certain amount of comparison of the present status of a species with its past status. Nevertheless, more precise dates for the last record of a species in any district are desirable.

In the list below are recorded all localities for robins seen since 1930 from different sources (including many individuals too numerous to mention to whom gratitude is acknowledged). Members are cordially invited to forward additions or other documents, to be published later as a supplementary note, perhaps with a map. Both contemporary records (since 1930) and dated past records would be welcome.

### NORTH ISLAND.

North Auckland.—Little Barrier Island; elsewhere gone early in 19th century. (Three Kings and Takakewai Hills, records not accepted pending confirmation). Great Barrier, gone since 1868.

Volcanic Plateau.—Mamaku Bush; Ngongataha; Mangarewa Valley (Oropi R.); Maraeroa (east of Mangapehi); Tihoi, Arataki; Whakapapa Gorge; National Park (Waimarino); Mangawhero Gorge; Ohakune; Rangataua; Karioi Forest; Rangitoto Range.

King Country.—No records; gone from Raglan since 1906 (?).

Raukumara Range, Urewera.—Head of Kopuaponamu (East Cape district); Te Whaité; Waikaremoana (?); north end Huiarau Range, near Rakauroa.

Inland Hawkes Bay-Taupo.—Kaimanawa Range; Kaweka River (?); between Rangitaiké and Ahimanawa River; Mohaka River.

Wellington.—TaraRua Range, west of Otaki River above upper gorges; near Kallihér Creek, Upper Otaki; Upper Waingawa; gone from Levin flats since 1898; Kapiti; Kaitoke Range (i.e., Rimutaka), gone since 1880; Wainuiomata, gone since 1906 (?).

\* Unfortunately, it is doubtful if all Mr. Drummond's correspondents used the names "robin" and "tomtit" in their accepted sense.

Taranaki-Wanganui.—One recent record, Tangarakau Gorge, 1933; gone from western Taranaki since 1886; Wanganui River, above Pipiriki Gorge, some 20 years ago.

#### SOUTH ISLAND.

Marlborough.—D'Urville Island; Chetwode Islands; Pickersgill Island; Little Mt. Stokes (above Manaroa); Pelorus Woods; Lower Awatere (above junction of Taylors Pass Road); Wairau (mile above Rainbow Accommodation House); Waihopai River (below Benopai Station); Ure Valley; Omaka Valley (conf. Dillon Creek); "Kai-koura"; Conway R. (Fernhurst Station).

Nelson.—Dun Mt. and other localities near Nelson; Onekaka-Aorere Valley; Owen Junction; Buller Valley, from Tophouse to Inangahua; Tarakohe to Mt. Arthur; Karamea Saddle; Caplestone; head Lake Rotoroa; Abel Tasman National Park; Rahu Saddle.

Canterbury.—Boyle Hut, Lewis Pass; Banks Peninsula, possibly surviving, but no recent records; otherwise no suggestion of continued presence east of Alps in Canterbury.

Westland.—Taramakau Valley; Matakītaki Valley; vicinity of Ross; believed locally persistent in S. Westland but no precise records received.

Otago-Southland.—Whare Flat (Dunedin); Lillburn Valley; Eglinton (and East branch); Dart Valley; Routeburn (12m. from Kinloch); Sylvan Lake; Diamond Lake; foot Mt. Earnslaw (Arcadia); Hope Arm; Manapouri; Piano Flat (Waikaia); Golden Downs; upper Waiiau Basin between Monowai and Manapouri; no exact records for Fiordland in recent years.

#### STEWART ISLAND.

Main island behind Pegasus; Pukeweka; Solomon Island; Big South Cape Island; Jacques Lees Island; Green Island.

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FLYING SHAG LOSES BALANCE.—I have only on one occasion seen a shag blown off its balance while flying. On 7/4/46 I was proceeding in my launch along the south side of Ponui Island with a gale blowing across the island from the north. The shag, a large pied (*Phalacrocorax varius*) approached from the east, flying at about 60 feet above the water. A swirling gust came down a gully, twisted to an east-west direction, and bowled him end over end. He hit the water, still out of control and was hurtled along the surface for about 15 yards. By this time he was able to pull himself together and dive. He stayed under the water for a very long time, perhaps collecting his badly scattered wits, or meditating on the vagaries of the New Zealand climate.—Thomas M. Roberts, Clevedon.

## STILTS NESTING AT ARDMORE.

By A. F. STOKES, Ardmore, Papakura.

The first appearance of stilts (*Himantopus himantopus*) on my farm at Ardmore, near Auckland, occurred about 1939, when one bird came for a short time before sunrise on each of two occasions. The next seen was in the spring of 1941, when one bird came frequently for about two hours each time. In the winter of 1943 a pair came and they stayed until late in December, but showed no signs of nesting. They were very timid.

1944 brought the first nest. A pair came in the winter and lived about a swampy place where I could observe them easily. These were much quieter. As spring progressed they chased my dog and vigorously pursued hawks. In November I found the nest of four eggs on a little mound in the swamp. The hatching took place early in December. Early one morning the first chick hatched. It left the nest about four hours later and was taken in charge by what I took to be the male bird. On the second and third mornings the same procedure occurred. The sitting bird stayed on the fourth egg for three more days before giving up. The egg was addled. For ten days the chicks kept together under the care of the male (?) bird, hiding quickly when he gave the alarm. After that time they would spread out as much as a chain apart. One now disappeared and then another two days later. I found a rat's nest nearby and killed the rat and its young. It had most likely killed the chicks. The third and last chick was nearly ready to fly when it developed a stiff neck on December 29. It ran in circles and finally died on January 1. The two old birds left on January 3, but came back with six others on January 5. The six stayed only for 10 minutes. The pair stayed all day, leaving in the evening for the last time.

In 1945 a pair, possibly the same, arrived in July—23rd, came for one hour; 24th, ditto; 25th, all day; 26th, did not come; 27th, all day; 28th, 29th, 30th, did not come; 31st, stayed for good. This time they nested in a wet area across a creek and at the mouth of a little gully. There were four eggs in the nest on October 26, but hatching was complete on October 27, and the young had left the nest. After leaving the nest the two old birds were on the wing most of the time, about 300 yards from the nest and across the creek. On October 31 I first saw one chick in a field next to last year's nest site. On November 1, I saw two, and on November 2 I saw three and on November 7 I first saw the four chicks all together. Here is a puzzle. The parents may have been quite able to move the newly-hatched chicks over grass fields for 300 yards in four days, but how did they get them across the creek? This creek is eight feet deep from the top of the bank to the water, about twenty-one feet wide at the top and about four feet wide on the water, which is three feet deep and is swift. There is no bridge. The banks are too steep and rough for the chicks to negotiate; a search revealing no possible crossing place. As far as I can see, the birds must have carried them over. The birds did not brood on any more than two at a time. On November 25 two were standing on the ground flapping their wings. On November 27 all four were doing this. On November 28 two flew about 100 yards, the others running to catch up. Two days later three were flying and the next day all four flew. On the

morning of December 5 they all left, but returned at noon. On December 6 they left again, returning at 2 p.m., one chick being missing. On December 7 they did not leave, but did so each day subsequently until December 18, when they left altogether. The chicks were then making a slight squeak. On March 29 two adult and four young stilts came. They were very tame and worked over the usual ground, even going through the same hole in the fence. Obviously it was the same family, the fourth chick having joined up again with the family.

There is no proof that it was the same birds which nested each year. The only good evidence in favour of this is that no other definite pairs came to this area. The young birds could easily have been banded but I had nothing with which to do this. I will watch for the old pair and four others next season.

## BREEDING OF RED-BILLED GULL.

### A PRELIMINARY CENSUS OF MOKOHINAU COLONY.

By C. A. FLEMING, Wellington.

Mokohinau, the most isolated of the island groups of the Hauraki Gulf, has long enjoyed the reputation among Auckland ornithologists of being the chief breeding colony for Red-billed Gulls (*Larus novae-hollandiae scopulinus*) in the greater part of the North Auckland peninsula. Between Cape Colville and North Cape there are, to my knowledge, some dozen rocks on which the species breed, or has bred at times, but it is very doubtful if any of these exceed a few hundred pairs of breeding birds. At the Three Kings, however, breeding has been reported and the numbers of birds seen in the close vicinity shortly after the breeding season (February, 1934) suggests that that colony might approach the size of the Mokohinau one. In the Bay of Plenty there are further colonies.

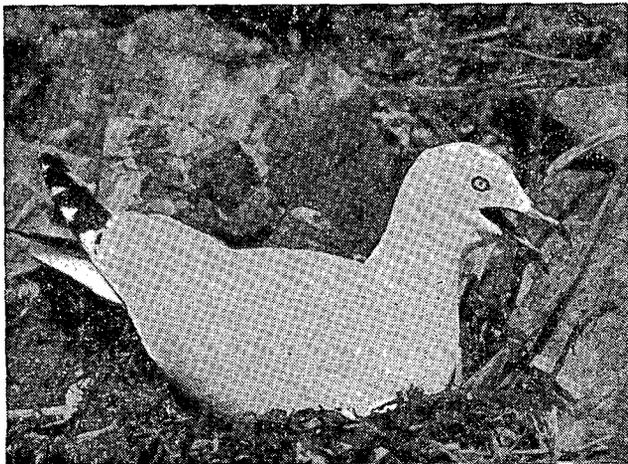
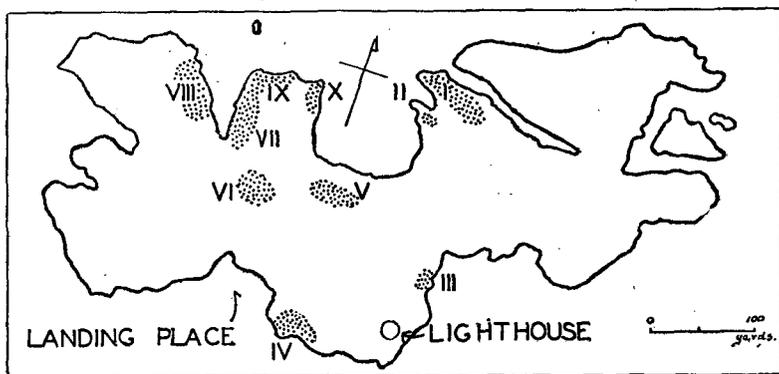


Photo: A. S. Wilkinson.

BROODING RED-BILLED GULL  
Panting in heat of sun, Kapiti Island.

During a visit to Mokohinau from October 11-18, 1944, other work prevented my giving adequate time to the breeding gulls, but it is thought worth while to submit the information obtained until a more precise survey is available. The behaviour pattern during this week entailed pelagic feeding during the daylight hours by a large proportion of the population. Such birds flighted in to the breeding places on Burgess Island from all points of the compass in parties of up to a hundred from about 4 p.m. until after dark. Red-billed Gulls seen in the vicinity of the Poor Knights, some 40 miles to the north, in December, 1938, used to flight towards the Mokohinau Group in the evening. During the night the maximum number of gulls was ashore, and before daylight the exodus of feeding birds began. About a third of the birds, at a rough guess, remained on the nesting sites during the day, mainly building nests, robbing their neighbours' nests, and indulging in courtship activity. The first eggs were seen on October 12 in Group I. (of attached map); 17 nests had eggs and five had clutches of two. This was in a group of hundreds of completed nests and none were seen in other groups for some days. It should be noted that this was the largest (by count), as well as the earliest to lay, of the ten groups of nests on the island. Eggs increased rapidly during the week. One clutch of three was seen.



#### BURGESS ISLAND, MOKOHINAU.

Showing groups of nesting Red-billed Gulls in October, 1944.

The counts of birds present, and the time of day are:—

I.—1,050 birds (8 a.m.); II.—250 birds (8 a.m.); III.—50 birds (8 a.m.); IV.—75 birds (11 a.m.), 200 birds (6 p.m.); V.—150 birds (11 a.m.); VI.—25 birds (11.30 a.m.); VII.—580 birds (11.30 a.m.); VIII.—25 birds (11.30 a.m.); IX.—280 birds (noon); X.—200 birds (noon). Total, 2,685.

At Mokohinau red-billed gulls breed only on Burgess Island, where ten groups of nests on headlands and cliff tops were recognised for census purposes. It was not practicable to visit these in late evening or early morning when numbers were highest. Counts were made by sitting hidden at a vantage point till the birds had settled, of every bird present at times between 8 and 12 a.m., on different mornings for different groups. Checks on the same colony on successive mornings gave differences up to 10%. On the other hand, a 6 p.m. count of Group IV. (which was only 75 birds strong at 11 a.m.) gave a total of 200, and birds were still coming in. At the times of counts immense flocks were dotted over the

surface of the ocean, and it was felt that more birds were at sea than on shore. In view of this, and as less than half the nests had eggs at the time of the counts, a conservative estimate of the total gull population is put at three times the actual morning count, which totalled 2,685 individuals. The general order of magnitude of the Mokohinau population, thus assessed, between 5,000 and 10,000 birds, is probably correct, i.e., it is to be numbered in thousands rather than in tens of thousands.

Among the thousands of gulls seen in the vicinity of the islands, two only were in immature plumage, and these were feeding at sea, and not noted on the breeding grounds.

Servicemen who had spent much time at the island, reported that the gulls leave the vicinity of the Mokohinau Group in March, and, more definitely, that they are totally absent until the last week of August, and that most appear in early September. They stated that the evening assemblages were less spectacular in October than they had been during late September, and were surprised at the low census figures I obtained. When the gulls first appear they do so from the open ocean to the east, so that a return to pelagic feeding, after a winter spent, in part at least, on the coasts and in tidal harbours, may introduce the breeding season. An account of observations on the seasonal movements of the red-billed gull near Auckland by P. C. Bull, was published by this society in its Bulletin No. 1, year 1941-42.

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## FURTHER RECORD OF PTERODROMA LEUCOPTERA FROM MURIWAI.

By P. C. BULL, Auckland.

On January 27th, 1946, in company with Mr. R. B. Sibson, I visited Muriwai, and found, together with other species cast up on the beach, a single specimen of *Pterodroma leucoptera*. As this bird differs slightly from the previous specimens found at Muriwai (Bull, 1943) it is, perhaps, worthy of discussion.

Unfortunately, this more recent specimen had been lying on the beach for some days so that it was not possible to determine either the sex, or the colour of the feet. Most of the feathers were still adhering and measurements of the wing and tail could be taken as well as those of the culmen and tarsus.

Although many of the feathers of the underside of the manus were lost, those remaining suggested a brownish black shade considerably darker than in *P. cookii*. In addition, the dark areas on either side of the breast are linked by a narrow line of clouded feathers. In both these particulars it agrees with the condition described for the Cabbage Tree Island population by Hindwood and Serventy (1941) but differs from that of the specimens found at Muriwai in 1942.

This tendency to agree with *Pterodroma leucoptera leucoptera* is also indicated in Table I, which compares the measurements of the recent Muriwai specimen with the mean values given by Hindwood and Serventy for the Cabbage Tree Island population and those of my own for the 1942 Muriwai series.

	Muriwai, 1942.	Cabbage T. Is. population.	1946 Specimen
Culmen .....	25.1	24.6	24.8
Wing .....	229	224.75	225
Tail .....	95.57	93.2	97
Tarsus .....	29.9	29.2	29

From these considerations it would appear that the specimen under discussion originated from Cabbage Tree Island or from an undiscovered breeding colony of *Pterodroma leucoptera leucoptera*.

There had been persistent westerly weather at the time the bird was cast up, and among the other species found was a specimen of *Puffinus tenuirostris* which had also been on the beach for several days. This latter species is found quite regularly at Muriwai and it therefore seems quite feasible for the *Pterodroma leucoptera* to have also originated from Australian waters.

#### REFERENCES.

- 1941, Hindwood, K.A., and Serventy, D. L., "The Gould Petrel of Cabbage Tree Island," *Emu*, vo. xli, 1941, pp 1-19.
- 1943, Bull, P. C., "The Occurrence of *Pterodroma Leucoptera* in New Zealand," *Emu*, vol xlii, 1943; pp 145-152.

### SPOTTED SHAG NEAR AUCKLAND.

(a).—While visiting Tarakihi Island on 11/9/45 I observed Spotted Shags (*Stictocarbo punctatus*) on the north-east coast of the island and some twenty nests, most of which were being built, were visible on the ledges of the cliffs. The nests were viewed from above and none of those within sight contained any eggs.

A second visit to the island on 9/10/45 revealed the fact that the colony had been attacked, apparently just after the first eggs had been laid. The nests that could be observed appeared to have contained only one egg each as indicated by the shell fragments that remained. The birds themselves had completely disappeared.

On 23/10/45, while passing round the north-eastern shore of Waiheke Island, in the vicinity of Anita Bay, a number of Spotted Shags were noticed on the rocky shore, and upon closer investigation I discovered that they were nesting in a small cave, some ten or twelve nests being located on ledges within two or three feet of the cave roof. The nests that could be examined were found to contain three eggs each and it appeared that incubation was well advanced. These eggs were probably laid during the first and second weeks of October.

While visiting the Noises Islands on 31/7/46, I noticed Spotted Shags nesting in the large cave on one of the islands in which they have nested for many years. All possible nesting sites along the sides of the cave seemed to be occupied, and some four or five nests had been built outside the western entrance. The birds were mostly busy reconditioning and building nests in the cave at this time, but on one of the outside nests a bird was sitting very closely on two eggs which were well incubated and were probably laid during the third week in July.—T. W. Cox, Howick.

(b).—Ponui Island area, a few miles to the south of Tarakihi.—7/10/45 to 30/12/45: Parties of c30 to 100 plus, but some hundreds on 9/12/45. Absent from 30/12/45 to 12/5/46, after which counts of 30 to 100 were usual till 16/6/46. Not nesting anywhere on Ponui. This is evidently a feeding area for Spotted Shags from Tarakihi, Waiheke and, perhaps, the more distant Noises.—T. M. Roberts, Clevedon.

(c).—Ihumoana Cliff at Te Henga.—Breeding activity was noticed on 2/6/46. Birds in full breeding plumage were gathering green herbaceous vegetation from nearby cliffs and carrying it to nests.—E. G. Turbott.

(d).—Muriwai.—Two juveniles ashore alive on 28/4/46. A strong easterly had been blowing for some days. They may have come either from Oaia Rock, where there appears to be a small colony, or else from the large Ihumoana colony, some eight miles south of Muriwai. Storm-wrecked Spotted Shags are found annually at Muriwai.—R. B. Sibson.

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### ABOUT OUR MEMBERS.

One of the Society's youngest members is Roger Daniell, a son of Mr. and Mrs. L. T. Daniell, of Masterton, and a pupil of Wairarapa College. He shows considerable promise as a bird artist. His father's property at Wairere, Ihuraua, is the place where Sir Walter Buller collected the huia (*Heteralocha acutirostris*) in 1883, as described in "Birds of New Zealand," second edition.

Mr. C. A. Fleming, of 79 Duthie Street, Wellington, has been appointed by the committee as district organiser for the Wellington, Hawke's Bay and Taranaki provinces.

Members who may have noticed any errors or omissions in the list of New Zealand birds published as a supplement to volume one, are asked to communicate with the president, Professor B. J. Marples, Otago Museum, Dunedin. It is proposed to have the additions and corrections printed so that they can be attached to the original list and make it complete.

All members are entitled to at least four numbers of "Bird Notes" for each year of membership. If these have not been received, please notify the secretary of the missing numbers and they will be forwarded.

It is likely that a new list of members will be issued soon. Will members please advise the secretary of any errors in the addressing of this number?

A number of members wish to complete their sets of New Zealand Bird Notes by obtaining copies of Vol. 1, No. 1, which is out of print. Would any member who has a copy he does not now require care to forward this to the secretary?

The secretary-treasurer reports that membership continues to increase. With this issue is enclosed a circular which members are asked to pass on to anyone likely to be interested, and you are invited to apply for further copies. New members are always welcome, as the size of New Zealand Bird Notes can be increased as finances allow. In addition, an improved magazine can be published, containing illustrations and diagrams. Donations for this purpose are particularly acceptable.

## REVIEWS.

**A Working List of Australian Birds, including the Australian Quadrant and New Zealand.** By Gregory M. Mathews, C.B.E. The Shepherd Press, Sydney, 1946. £1/1/-.

This Society does not aspire to active interest in the complexities of bird systematics: nevertheless, in view of the recent appearance of Professor Marples's List, a few comments on this latest contribution by a senior taxonomist may be relevant. G. M. Mathews has been a student of Australasian birds for some 40 years, basing his studies largely upon the extensive collections in the Northern Hemisphere, of which his own (now in New York) was one of the most important. He is justifiably classed as a "splitter," having probably contributed more sub-specific and generic names to bird literature than any other ornithologist. He may certainly be classed (without malice) as a student of skins in museums, and not of live birds in the field, and he generously insists (in the introduction to the work under review) that "the elucidation of life histories and distribution" are "the more interesting and important side" of ornithology. Whether Australasian ornithologists will accept Mr. Mathews' somewhat mandatory invitation to concentrate on such topics and leave systematics to him is another matter.

In 1931 Mathews published a "List of the Birds of Australasia" (including New Zealand), in which every synonym was included; this remains a valuable work of reference to the literature. It might have been anticipated that the "working list" would supplement and replace the 1931 list, but this is far from the case. "The present list only records subspecies which can be accepted by workers using the small imperfect collections available at present in Australian museums." . . . "The many subspecies, not listed, are not to be rejected," but . . . "require comparison of better material," i.e., are on the suspense list. The reviewer would comment, at the risk of infringing Mr. Mathews' veto on "destructive criticism," that such a compromise does not inspire great confidence in the critical faculty with which the "pruning" has been effected.

One convenient departure from the format of the 1931 List is the presentation of a separate list of New Zealand birds, prefaced by a somewhat cryptic, if not apologetic, note that "owing to the distance from Australia and other troubles, we are publishing the list as it is." The New Zealand list is a definite contribution to local bird systematics, although not nearly so easily used as the 1931 list, owing, in great part, to the curtailment of generic headings and the lack of full references. There are some errors (e.g., the Whistling Duck is listed under the Pigeons), and some seeming inconsistencies, in typography, for instance. Also, 11 lines are given to the single New Zealand record of the Black-footed Albatross, but only one to the Silver-eye! Among omissions noted in a casual perusal are the Pallid and Channel-billed Cuckoos, the Norfolk Island Allied Shearwater, and Gould Petrel; on the other hand, the list is swelled by Antarctic species not known from New Zealand. Incidentally, the total of recognised forms (species plus sub-species) is about 316.

No ornithologist, in New Zealand or elsewhere, will accept the list uncritically, and Mr. Mathews would be the last to wish it. Looked at in this light, the volume may be regarded as a stimulus to further ornithological research in Australasia.—C.A.F., 13/8/46.

"Emu," Vol. xlv, pt. 4, April, 1946.

An investigation of the northern island of the Poor Knights group from an ornithological viewpoint is reported by G. A. Buddle, of Auckland. Some striking differences in bird population in relation to the southern island (dealt with in "Emu," vol. 41) are recorded, and the effects of wild pigs on the southern island are discussed, particularly in the distribution of the spotless crane (*Porzana plumbea*) and Buller's shearwater (*Puffinus bulleri*).—R.H.D.S.