

THE BLACK-WINGED PETREL (*Pterodroma nigripennis*) IN THE SOUTH-WEST PACIFIC AND THE TASMAN SEA

By J. A. F. JENKINS and N. G. CHESHIRE

ABSTRACT

Black-winged Petrels seen since 1959 in the Tasman Sea and between 1970 and 1979 in the South-west Pacific are charted to show their distribution in the region. They are absent from the end of June to the end of October. The limited information on their breeding islands is reviewed and is amplified whenever possible by unpublished data.

Most recording was done from merchant ships on commercial voyages and so observations tend to follow the trade routes. Notable exceptions are the observations to the south-east of New Zealand made during the 1978 Bounty, Antipodes, Auckland, and Snares Islands Expedition; those made by J. A. Bartle and P. Roberts from research vessels; and those made by T. G. Lovegrove on yacht voyages to the north of New Zealand.

The charts (Fig. 2-13) show the highest count of Black-wings seen at one time in any 1° area, that is, an area of 1° of latitude by 1° of longitude (Cheshire 1977). The charts also show, by means of open circles, the areas visited where no Black-wings were seen. Areas not visited are left blank on the charts.

Throughout this report positions are given as, say, 27/176E, meaning that the sighting occurred in 27° South latitude and 176 East longitude. Since all latitudes referred to are South, we have omitted the indicator S.

DISTRIBUTION AT SEA

The Black-winged Petrel is readily attracted to ships and is easily identified. Its reappearance at sea in the South-west Pacific is not as dramatic as that of some other seabirds. They do not seem to arrive in concentrated flocks, as do, for example, Wedge-tailed Shearwaters (*Puffinus pacificus*) (Jenkins 1979), but our observations at sea show that the numbers build up throughout November before large numbers are seen in December. The probable reasons for the December increase are

1. As with other small *Pterodroma* petrels such as *pycrofti* (Bartle 1968), the bulk of the population might consist of unemployed birds. These, probably returning later than the breeding birds, would not

have the same strong attachment to the breeding islands and would quickly spread throughout the region.

2. In mid-December the breeding birds would be at sea, honeymooning, before egg laying. Our observations show that the distribution is widest in December and the numbers at sea in the region are probably higher in December than at any other time.

What information there is strongly suggests that most of the breeding population is back at the islands by the middle of November. The direct return to and subsequent attachment to the breeding islands during November apparently account for the low numbers seen at sea.

Twenty passages have been made between New Zealand and the Pacific islands during October, and as can be seen from Fig. 2, only six birds were seen, one at 27/176E on 22 October 1973 and five north of Raoul Island on 31 October 1979.

The chart for November (Fig. 3) shows increasing numbers north of New Zealand with the birds spreading into the western and southern Tasman Sea.

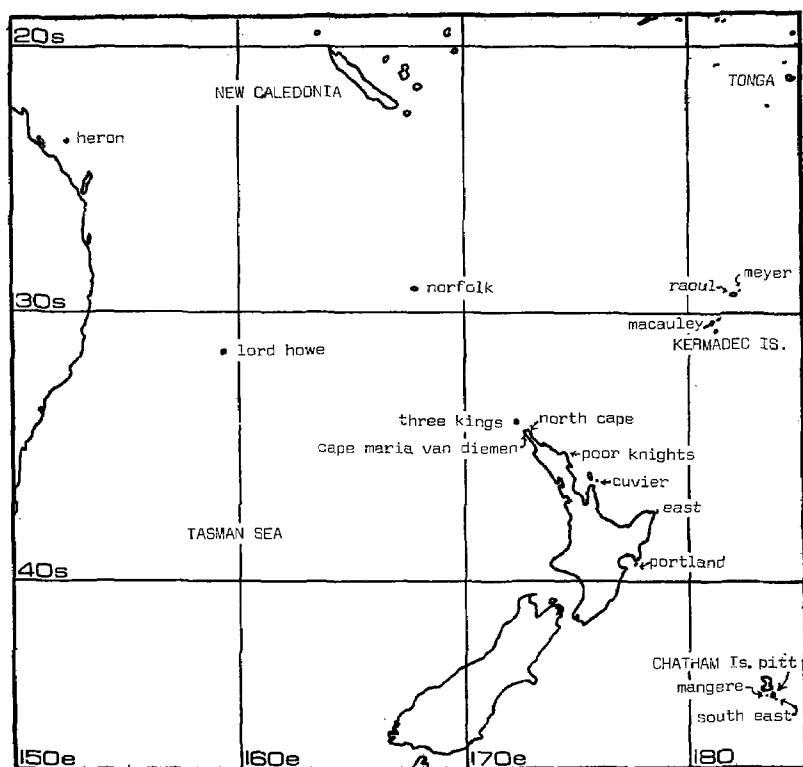


FIGURE 1

Figure 4, the chart for December, shows that most of the population has returned to the region. Numbers have increased and the distribution has broadened. This is the situation throughout January (Fig. 5) and February (Fig. 6), when numbers and distribution remain fairly constant, probably at a level slightly lower than that of December.

The chart for March (Fig. 7) shows a reduction in numbers, probably because the unemployed and failed breeding birds start to leave the region at this time. There is little change in distribution, including birds still in the southern Tasman.

In April (Fig. 8) and May (Fig. 9), numbers are further reduced and the birds apparently withdraw from the western Tasman.

By June (Fig. 10), the birds have completely withdrawn from the Tasman Sea and the New Zealand coast. The few sightings made were all to the north of New Zealand, and the last record for the year was at 24/175E on 28 June 1973.

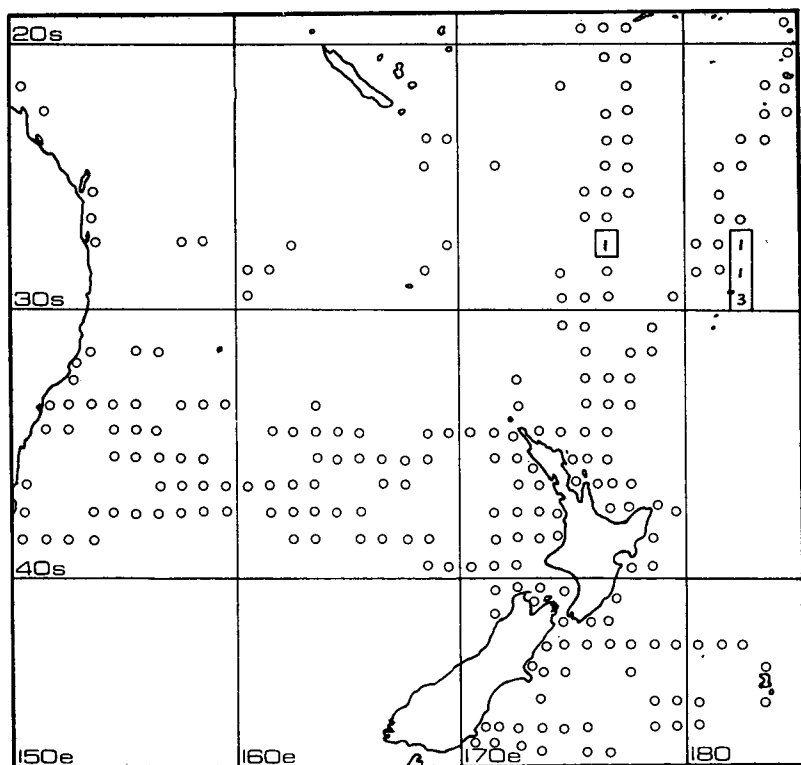


FIGURE 2 — October

As can be seen from Table 1 and Fig. 11-13, although the region was well covered, no Black-winged Petrels were seen during July-September.

MIGRATION

North of New Zealand we have seen a total of 10 birds during June and none anywhere in July-September. The first records for the new breeding season were made towards the end of October, when we have seen six birds. In November, although numbers at sea were low, birds were spread throughout the region. In the Tasman Sea and New Zealand coastal waters the last records were made in May and the birds did not reappear until November.

Of the breeding grounds in the Kermadec Islands Oliver (1955) said that the birds were first heard at night late in October and that burrow cleaning began in November. Merton (1970) reported that "Many thousands were present on Meyer on 19 November 1966, but even greater numbers were apparent in late November and early December." At Macauley Island on 10-22 November 1980, P. J. Moors

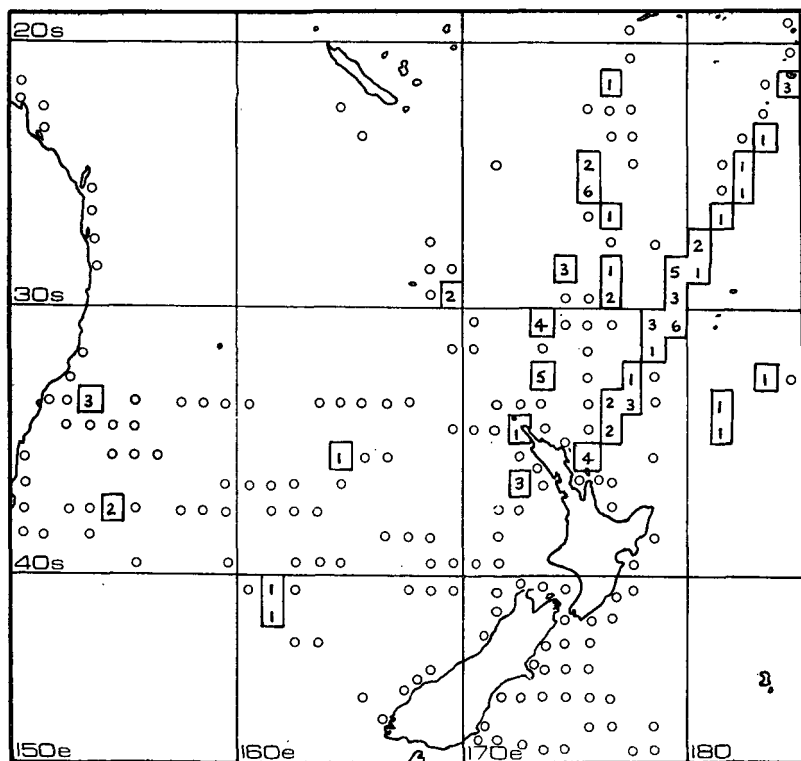


FIGURE 3 — November

TABLE 1 — The number of 1° areas visited in each month and the percentage of areas in which Black-winged Petrels were seen

Month	Number of areas visited	Areas in which Black-winged Petrels seen	
		Number	%
Jan	261	127	48.6
Feb	156	76	48.7
Mar	202	76	37.6
Apr	169	44	26.0
May	196	51	26.0
Jun	180	8	4.4
Jul	281	0	—
Aug	184	0	—
Sep	191	0	—
Oct	233	4	1.7
Nov	213	37	17.4
Dec	233	131	56.2

(pers. comm.) found very large numbers. It seems, therefore, that most of the breeding birds return to their breeding islands during the first two weeks of November.

Since we found few birds away from the Kermadecs in November it appears that the breeding birds return straight to the breeding islands and that the birds we saw elsewhere were wandering non-breeders, possibly the birds that have been reported prospecting new breeding sites around northern New Zealand and many other places in recent years. The direct return of the breeding birds to their islands would seem to be supported by the fact that, of our six October sightings, five were made just north of, or close to, Raoul Island, on one of our rare voyages to the Kermadec Islands.

Our data tell us little of the situation at the Three Kings Islands breeding grounds, but the small numbers of birds seen close to the north of New Zealand in November could well be birds returning to the Three Kings.

In the Central Pacific, King (1970) made the following observations.

“Black-winged Petrel was first observed in the study area on 17 March 1964. Only an occasional bird was seen until May when numbers began to increase. Numbers were fairly stable from May through September but rose sharply in October. A decrease in November to a level somewhat higher than the May-September level was followed

TABLE 2 — Comparison of King's (1970) Central Pacific data with that from the South-west Pacific

Month	Central Pacific	South-west Pacific
Mar	None until occasional birds from mid-Mar	Reduction in numbers
Apr May		Reduction and withdrawal
Jun	Increase in May; stable until Sep	Last records for year
Jul Aug Sep		None
Oct	Increase in numbers	First records
Nov	Decrease to May/Sep level	Numbers increasing
Dec Jan	Sharp reduction	Widespread — majority of population present
Feb	None	

October increase in King's area may be accentuated by the birds' flocking and therefore greater conspicuousness before the transequatorial migration.

We can calculate possible times taken by the birds returning from the Central Pacific. Black-winged Petrels can easily fly at 30 knots. In fact the ease with which they overtake ships steaming at 15-18 knots suggests that they reach 40+ knots. From the south of King's area to Raoul Island is about 2600 n. miles. If they made the distance in one uninterrupted flight they would take between three and four days. Thus the increased numbers in the Central Pacific at the end of October could well be the same population as Moors's very large numbers in Macauley on 10 November and Merton's "many thousands" on Meyer Island on 19 November.

BREEDING ISLANDS

Austral Group

Murphy (1929) mentioned "Three specimens from Bass Rock, about 50 miles east by south from Rapa Island, Austral Group, 27 February 1922." Beck in the schooner *France* collected at Bass Rocks (= Marotiri) on that date, and in his journal (Whitney vol. E:98) said that "a small *Pterodroma* was seen half a dozen times and three birds were taken." Black-winged Petrels are so noticeable both at sea and near the breeding islands that "half a dozen" sightings made during a day spent close to the islands can hardly indicate a large,

if any, breeding colony. The *Pacific Islands Pilot* describes Marotiri as "... a group of small islets and several rocks; all are rugged and without vegetation or low lying ground. ..." Although J. A. Bartle (pers. comm.) has suggested that *nigripennis* may nest in rock crevices, Marotiri hardly appears to be the site for a colony of a burrowing petrel. The Whitney party was unable to land owing to a heavy swell and numerous sharks about their boat. We have not found anything in the literature referring to landings since, and so Black-winged breeding at Marotiri is still doubtful.

At Rapa, Holyoak & Thibault (in press) found 200-300 pairs breeding on offshore islets. It is apparently absent from the main island. In 1974 the first adults were recorded ashore at the beginning of November. The freshly prepared burrows were deserted by 11 December when the birds would be at sea honeymooning before egg-laying.

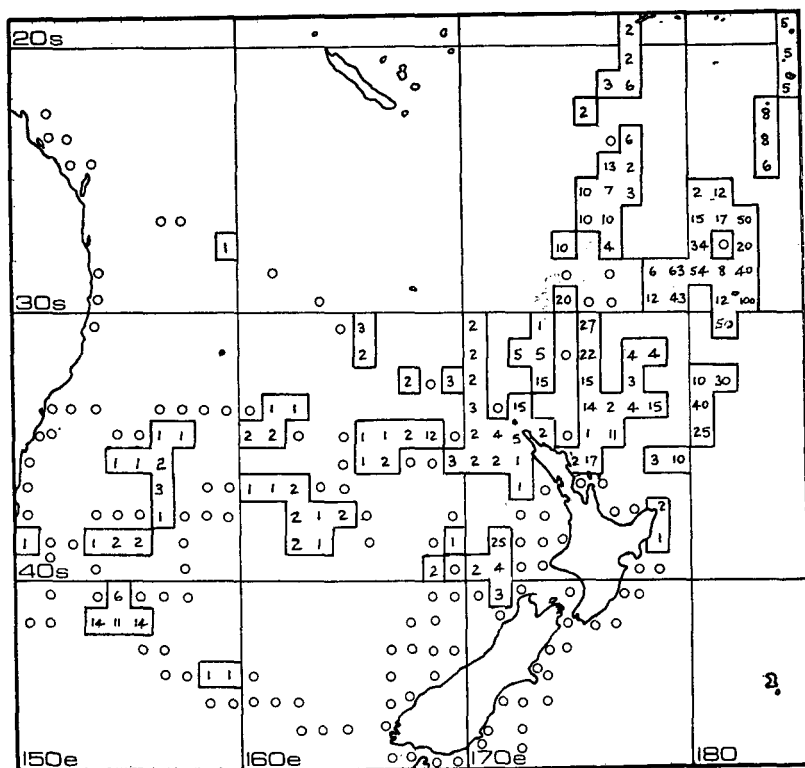


FIGURE 5 — January

Chatham Islands

The Black-winged Petrel was first found on South East Island by the Wanganui Museum Expedition on 6 January 1970, and although this is recorded in the *Annotated Checklist of the Birds of New Zealand* (1970), the discovery has yet to be written up (D. E. Crockett, pers. comm.). Imber (1978) reported that the birds returned to the island on 17 November in 1977, and this appears to be the only time that a definite date of return has been recorded at any island.

The following information is a summary by B. D. Bell (pers. comm.) of the status of the bird in the Chathams. The Black-winged Petrel seems to be focusing on five locations. The first of these is at the summit area of *South East Island*. Black-winged Petrels were first recorded investigating this area in 1970 by D. E. Crockett. Since then all parties that have visited the area at the correct time of the year have recorded activity. Although courtship flights and birds on the ground and in burrows have been observed, regular breeding has not been proved. Breeding is suspected but it is difficult to reach the

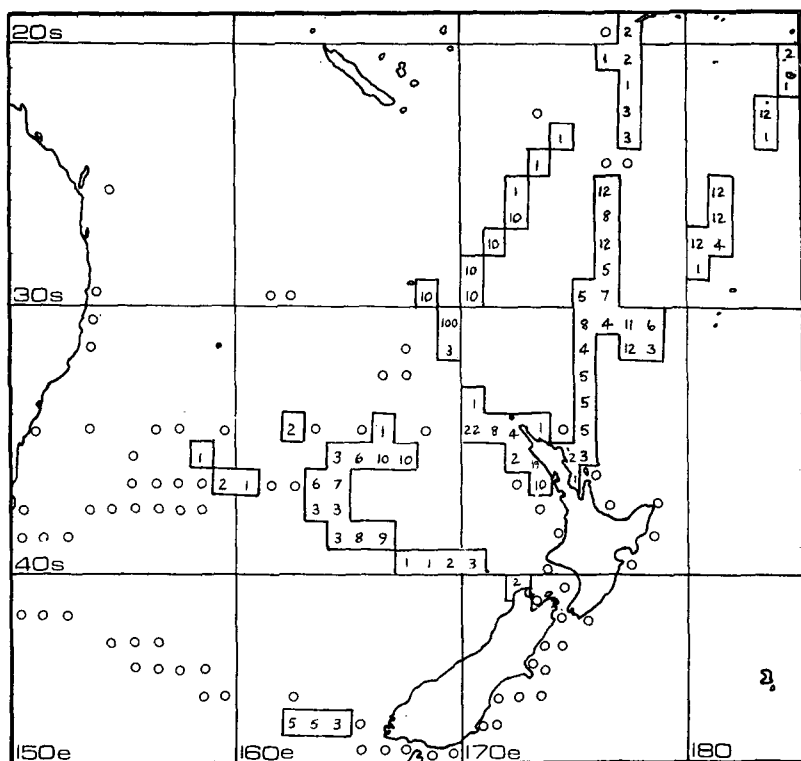


FIGURE 6 — February

burrows because of the steep rocky nature of the terrain and the very tight scrub.

On *Mangere Island* the calls of Black-winged Petrels were first heard in the early 1970s and over the years this has become a feature of the island. The corpses of this petrel first appeared in the skua middens in 1979. Although birds are present during the breeding season, breeding does not appear to have occurred.

The third area is Rangiauria (Black Rock) on *Pitt Island*, where prospecting has occurred for at least three years. Heavy predation by cats seems to be preventing colonisation of this outcrop.

The fourth locality is *Star Keys*, where skua-killed remains of two birds, one possibly a juvenile from the previous breeding season, were found in early November 1977. There was no activity of live birds then, but it was subsequently found that they returned to South East Island in mid-November (M. J. Imber 1978 & pers. comm.).

The fifth locality is *Forty Fours Islands*, where a pair of courting

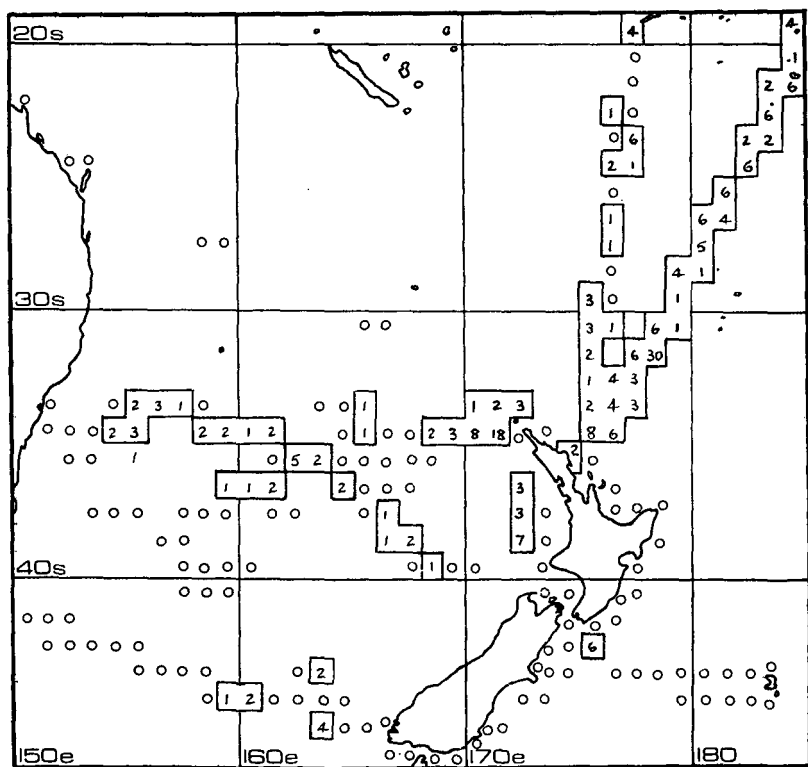


FIGURE 7 — March

birds was found in a rocky niche in the summer of 1974 (C. J. R. Robertson, pers. comm.).

East Island

Moors (1980) reported at least 100 birds over this small island off East Cape, in December 1979. Their behaviour and the finding of several birds in freshly cleaned burrows almost certainly means that this is now a breeding island. As eggs are not laid until late December-early January breeding could not be definitely confirmed.

Kermadec Islands

Merton (1970) listed the previous literature. He recorded extensive breeding on the *Herald Islets* to the north-east of Raoul. In the face of heavy predation, cats and rats being present, he said that the Black-winged Petrel would soon be eliminated from Raoul itself. At present, good numbers of Black-wings are seen flying around Hutchinson's Bluff and at D'Arcy Point and many of them land, as

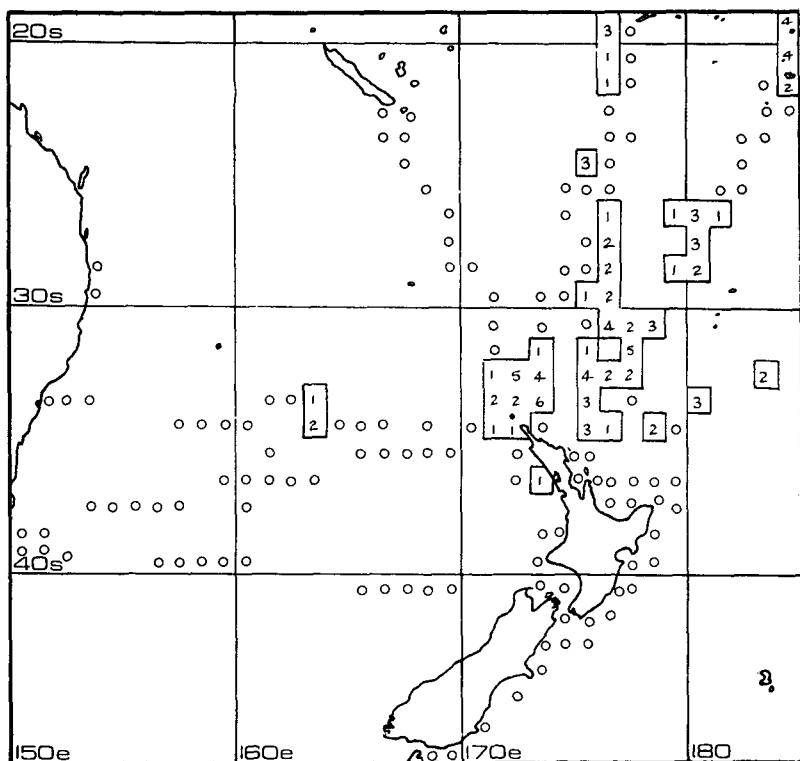


FIGURE 8 — April

dense on flattish ground covered by a thick mat of *Microlaena stipoides* grass.

Five hundred birds were banded from about 1.5 ha around the campsite. Judging from the recapture rate of banded birds in that area, the total population of Black-winged Petrels on Macauley (approximately 315 ha) exceeds 1.1 million. Twenty-eight birds were measured. Average dimensions were: bill length 24.7 mm; wing length 223 mm; tarsus length 30.5 mm; weight 172 g. Two fresh carcasses were found which had been gnawed by *Rattus exulans*, but it was not clear whether the rats had been responsible for the deaths. Rats were common on the island at the time."

Lord Howe & Balls Pyramid

Fullagar (1974) said that the breeding confirmed on Lord Howe in March 1971 could be a recolonisation of the island. He suggested that breeding occurs "in some strength" on Balls Pyramid. However, I. Brown (1979), who visited Balls Pyramid 19-26 November 1978,

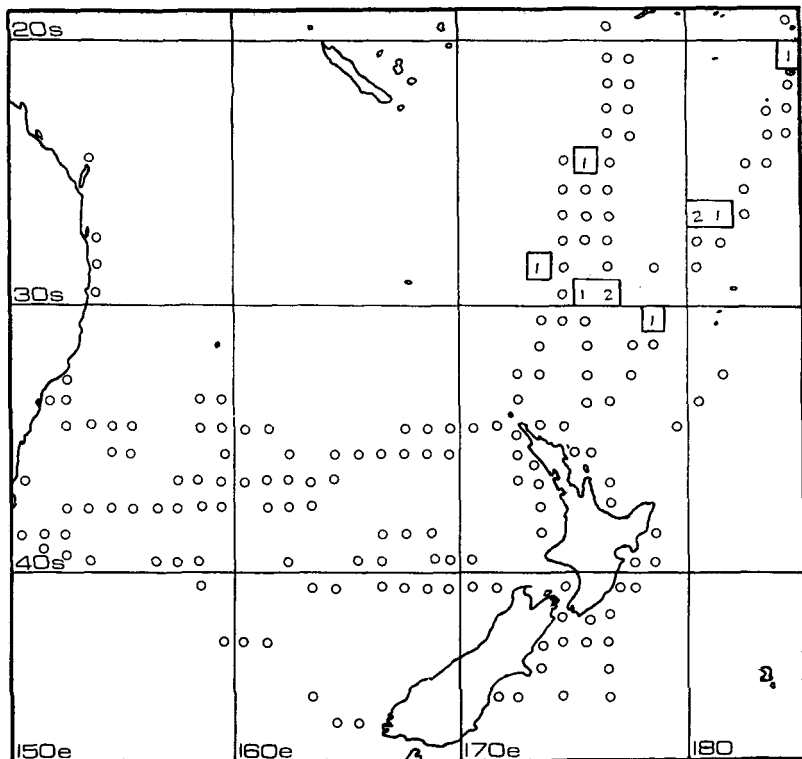


FIGURE 10 — June

noted the breeding of *Puffinus pacificus* and *Pterodroma neglecta* but did not mention even seeing *nigripennis*.

New Caledonia

Naurois (1978) recorded the first specimen caught in a burrow on Isle Mettre at the end of December 1971. He did not think it was a breeding bird. In January-February 1978 several hundred pairs were found breeding on small offshore islands.

Norfolk Island

The early history of the Black-winged Petrel was described by Serventy *et al.* (1971). Klapste (1981), in an interesting paper, showed that the birds are common on Norfolk, even though they are heavily predated by feral cats.

Portland Island

Eagle (1980) described the first breeding birds, which were found in February 1980.

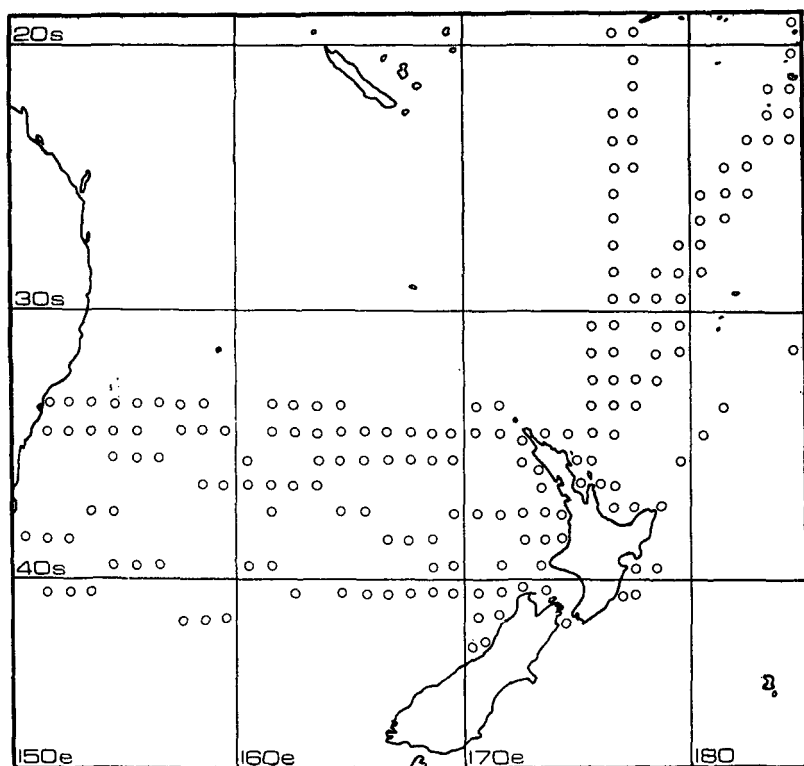


FIGURE 11 — July

Three Kings Islands

The first report of the Black-winged Petrel from the Three Kings was that of Bull (*in* Turbott & Buddle 1948). He reported at least 24 birds over Great King on 3 December 1945. Breeding was confirmed when a burrow containing a sitting bird was found on 14 January 1951 (Turbott 1951). During a visit to Great King in December 1952-January 1953, Turbott & Bull (1954) referred to a *Pterodroma* with a *ti-ti* or *kek-kek* call heard about Castaway Valley and from cliff tops to the west of the depot. This was probably the Black-winged Petrel (E. G. Turbott, pers. comm.). Nothing is in the literature since that time. J. A. Bartle, who visited the islands in January 1976, has said (pers. comm.) that the Three Kings is now a major breeding station. The largest colony is probably that on South West Island, but on Great King the colony has expanded with burrows more abundant in the old areas and spread into new ones. They may also breed on West and North East Islands.

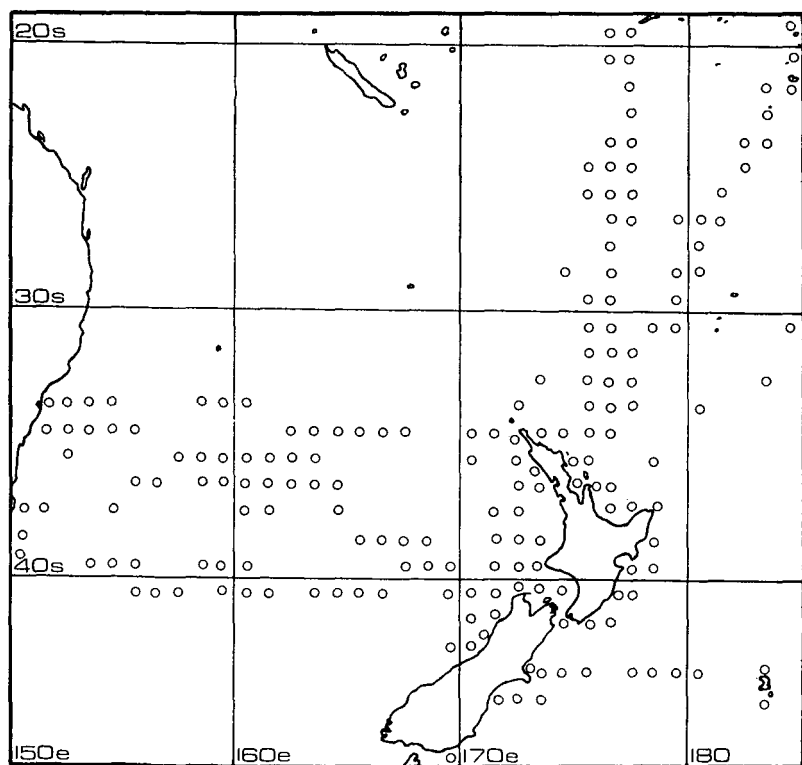


FIGURE 12 — August

Prospecting of new breeding sites in New Zealand

In recent years many Black-winged Petrels have been seen flying over headlands in northern New Zealand. Sibson (1978, 1979) and Thomas (1979) reported birds over the land at North Cape and Cape Maria van Dieman. Thomas's observations were discussed by McKean (1980) in relation to similar behaviour noted at Lord Howe Island. Offshore, the most consistent reports are those from the Poor Knights Islands, where J. A. Bartle (pers. comm.) recorded up to 50 over Aorangi Island in January 1978. However, Bartle found no sign of breeding during a thorough search of the island in February 1980. Black-wings have also been seen over Cuvier Island during the past few summers (T. G. Lovegrove, pers. comm.).

Distribution in Australia

Alan Rogers (pers. comm.) has summarised Black-winged records for Australia: "It was first recorded in 1962 when two birds were caught on Heron Island, Queensland. It has continued to occur there regularly and since 1975 has also been prospecting Muttonbird Island,

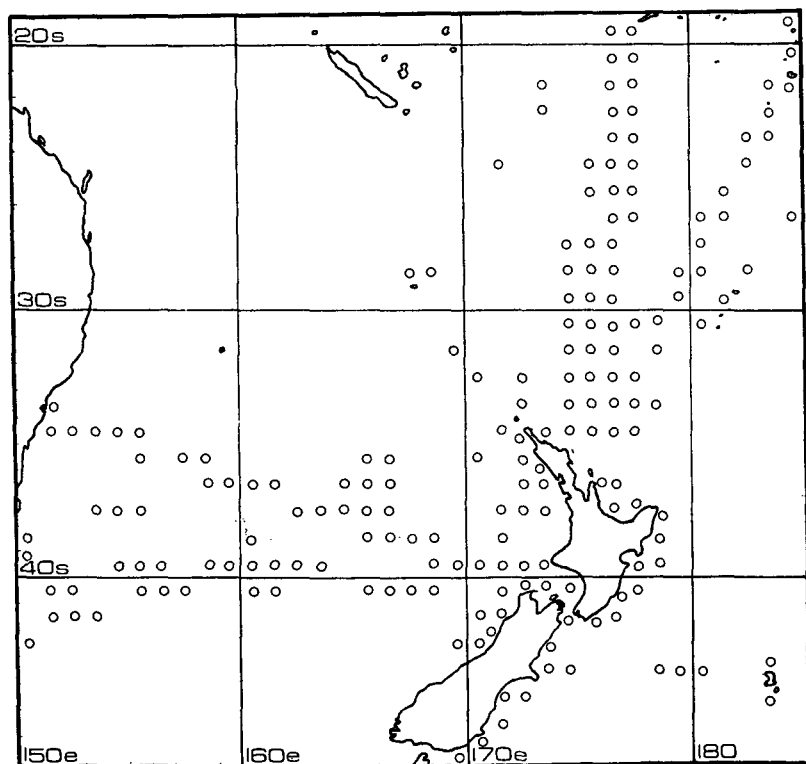


FIGURE 13 — September

Coffs Harbour, New South Wales. . . Breeding has yet to be proved at either locality.

Away from these sites, there have been occasional sightings and beach-washed records in both States and one occurrence in Victoria. There are no records for South Australia (D. Close, pers. comm.), Western Australia, Northern Territory (J. McKean, pers. comm.) or Tasmania (L. Wall, pers. comm.).

In a recent review, Klapste (1981) summarised details of published occurrences and provided a useful list of references. Thus only records which supplement or update that information are given here.

Two further birds were beach-washed at Byron Bay, New South Wales (Morris, McGill & Holmes 1981) and at Peregrine Beach near Noosa Heads, Queensland, on 18 February 1977, now Queensland Museum specimen No. O. 16607 (G. Czechura, pers. comm.).

Sightings have continued at Muttonbird Island, Coffs Harbour, with several seen by J. Issard on 21 February 1980 (Lindsey 1981), one on 1 January 1981 (J. McKean, pers. comm.) and at least four on 1 February 1982 (G. Czechura, pers. comm.). There was an additional record at sea nearby when G. Holmes saw one attracted to ship lights near Solitary Island on 8 March 1976 (Rogers 1977).

It is noteworthy that all documented Australian records appear to fall in the period December-April."

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J. A. F. JENKINS, 14 Lochiel Road, Remuera, Auckland; and
N. G. CHESHIRE, 36 Grandview Crescent, Kilcare, N.S.W. 2256