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BIRD BANDER

Studies of Giant Petrels at Malabar, New South Wales

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Giant petrels *Macronectes spp.* occur regularly in New South Wales coastal waters from May to November. Large numbers congregate off Malabar (33° 58′ S., 151° 16′ E.) where effluent from the largest of the Sydney sewer outfalls, containing material from abattoirs, tanneries, etc. is pumped into the sea at Yellow Rock (Hindwood 1955).

Wandering Albatrosses *Diomedea exulans* have been banded at this locality for many years but it was not until 1969 that a determined effort was made to catch giant petrels. As the number of birds visiting the area now appears to be diminishing, a report on the findings of these studies is opportune.

Feeding Habits

Giant petrels feed on the effluent as it breaks the surface above the outlet, often as close as one metre to the rocks. They also take bait from fishing lines, and during the past three seasons fish hooks have been removed from five birds. They appear to feed upon smaller matter than albatrosses, and after having fed, move into the clear water where they wash with outspread wings, rocking fore and aft to duck the head below the surface. Later they move further away and rest. After rough weather they seem hungry and so intent on feeding that they ignore the presence of boats and can be caught relatively easily.

Method of Capture

A cane hoop, 1.4 m diameter, with a loosely strung net of about 150 mm mesh is thrown over the bird; the same technique is used to capture Wandering Albatrosses (Gibson and Sefton 1959). However giant petrels are more difficult to catch as they are adept at taking evasive action, do not have to fly directly into the wind to take off, and can take off with ease even in light winds.

Whereas Wandering Albatrosses are usually placid in the hand, giant petrels struggle and readily regurgitate a foul mixture of food and stomach oil which needs to be wiped up quickly since it set like candle grease. Birds often discharge oil from the nostrils while they are being held by the bill.

To enable identification of birds already handled on the day, dye is applied to the bill instead of the plumage of dark phase birds before release.

Identification

When these studies were commenced all giant petrels were identified as *Macronectes giganteus* and classified as being white, dark or grey-brown as shown in Table 1. However since 1971, using information supplied by Dr G. W. Johnstone *M. giganteus* have been differentiated from *M. halli* by bill colour; the bill of the former is horn coloured with a light green tip, and the latter is reddish brown at the tip (Johnstone 1971).

Results

During 1959 to 1971, 371 giant petrels were banded at Malabar and all were recorded as *M. giganteus*. Consequently there were probably errors in identification since *M. halli* were cer-

TABLE 1

Classification of giant petrels at Malabar.

'Type'	Plumage	Eye	Legs	Bill	Comments
White	All white with a few dark feathers scattered throughout	Dark brown	Light coloured, blotched with grey	Horn green	White phase of *M. giganteus;* not exceeding 1% of birds seen
Black	Very dark brown: appears black	Dark brown	Leaden grey	Horn green	Young birds. Most of the birds captured belong to this group
Grey-brown	Mottled and freckled, often light fawn or whitish on face, neck and breast	Dark or light	Grey	Horn-coloured tip	Adults* (*M. giganteus* and *M. halli*). Wary birds, difficult to capture

* Both species now identifiable in the field.

TABLE 2

Giant petrels banded elsewhere and recaptured at Malabar.

Banding Locality	Band Number	Age when Banded	Date Banded	Date Recovered	Elapsed Time	Remarks
Macronectes giganteus						
Bird Island, South Georgia	568-01022	Pullus	1. 2.62	7. 7.62	5 months	
Signy Island, South Orkney Islands	501-6564	Pullus	22. 3.63	13. 7.63	4 months	White phase
	501-6993	Pullus	31. 3.63	14. 8.63	4.5 months	
	502-5540	Pullus	13. 3.68	27. 8.68	5 months	White phase
	502-7150	Pullus	–. 3.69	19. 7.69	4 months	
	502-7287*	Pullus	–. 3.69	10. 8.69	5 months	White phase
	503-1690	Pullus	–. 3.69	19. 8.69	5 months	
	502-6601	Pullus	–. 3.69	19. 8.69	5 months	
	502-2741	Pullus	31. 1.61	19. 8.69	8.5 years	Original band FIDS 53796
	502-6761	Pullus	–. 3.69	19. 8.69	5 months	
	502-6883	Pullus	–. 3.69	13. 9.69	6 months	
	502-7371	Pullus	–. 3.69	13. 9.69	6 months	White phase
	502-7455	Pullus	. 3.69	20. 9.69	6 months	
	502-7091	Pullus	–. 3.69	25.10.69	7 months	White phase
	503-3634	Pullus	–. 3.70	20. 6.70	3 months	
	503-3430	Pullus	5. 3.70	18. 7.70	4 months	White phase
	503-9164*	Pullus	3. 3.70	25. 7.70	4-5 months	
	503-9032	Pullus	8. 3.70	25. 7.70	5 months	
	503-3760*	Pullus	5. 3.70	15. 8.70	5 months	
	503-9463	Pullus	15. 3.70	15. 8.70	5 months	
	503-3098	Pullus	5. 3.70	12. 9.70	6 months	
	504-0384*	Pullus	4. 3.71	7. 7.71	4 months	
	504-0706	Pullus	5. 3.71	6. 9.71	6 months	White phase
	504-0218	Pullus	4. 3.71	25. 9.71	6 months	White phase
Nelson Island, South Shetland Islands	737-62037	Pullus	27. 1.65	1. 8.65	6 months	
Macronectes halli						
Macquarie Island	130-61128	Pullus	31.12.66	8. 8.67	8 months	
	130-61278	Adult	6. 7.67	13. 6.70	3 years	
	130-61281	Adult	6. 7.67	25. 7.70	3 years	

* Subsequently recovered at Malabar or elsewhere (see Table 3).

TABLE 3

Recoveries of Giant Petrels caught at Malabar.

Band Number	Date First Caught at Malabar	Date Subsequently Recovered	Elapsed Time	Place Where Recovered	Alive or Dead
130-44405	17. 8.68	19. 8.69	12 months	Malabar	A
		17. 9.69	13 months	6 km E. Woolgoolga, N.S.W.	D
130-44438	28. 6.69	27. 9.69	3 months	Malabar	A
130-49312	10. 8.69	30. 8.69	3 weeks	Malabar	A
502-7287	10. 8.69	19. 8.69	1 week	Malabar	A
130-49338	19. 8.69	6. 9.69	2.5 weeks	Malabar	A
140-20632	20. 9.69	25.10.69	1 month	Malabar	A
130-49393	18.10.69	25.10.69	1 week	Malabar	A
130-50033	15. 6.70	25. 7.70	1.5 months	Malabar	A
130-50049	11. 7.70	25. 7.70	2 weeks	Malabar	A
504-0384	7. 7.71	1. 8.71	1 month	Malabar	A
130-13518	7. 7.62	19. 8.63	14 months	Wreck Bay, N.S.W.	D
140-20639	20. 9.69	18.10.69	1 month	Redhead, N.S.W.	A
140-20645	20. 9.69	18.10.69	1 month	Bellambi Point, N.S.W.	D
140-20637	20. 9.69	7. 6.70	9 months	Swansea, N.S.W.	A
140-20654	18. 7.70	4.11.70	3.5 months	Kilcare, N.S.W.	D
140-20673	25. 7.70	16. 8.70	3 weeks	off Newcastle, N.S.W.	A
140-20666	2. 7.70	19. 1.71	6 months	77 km S. of Lakes Entrance, Vic.	A
		30. 1.71		Seaspray, Vic.	D
503-9164	25. 7.70	22. 8.70	1 month	near Newcastle, N.S.W.	D
504-0218	25. 9.71	1.11.71	2 months	Gosford, N.S.W.	A
130-50212	6. 9.71	17. 6.72	9 months	Byron Bay, N.S.W.	A
130-44426	14. 9.68	30.10.68	1.5 months	Bay of Plenty, New Zealand	A
130-44436	14. 9.68	2.11.68	1.75 months	Bay of Plenty, New Zealand	A
130-44412	13. 7.69	12.11.70	16 months	near Cape Kidnappers, New Zealand	D
130-49331	19. 8.69	-9.10.69	2 months	75 km N. of Kaikoura, New Zealand	D
130-49364	6. 9.69	30.10.69	2 months	Bay of Islands, New Zealand	A
130-50045	20. 6.70	26. 9.70	3 months	Otaki Beach, New Zealand	A
		10.10.70	3.5 months	North Palmerston, New Zealand	A
503-3760	15. 8.70	29. 3.71	7.5 months	Wreck Reef, Stewart I., New Zealand	D
130-44432	14. 9.68	3.10.69	13 months	Caleta Durazno, Quintero, Chile	D

Includes newly banded birds and those previously banded elsewhere.

tainly recognised in the field in 1972 when ten birds were banded, eight of which were *giganteus* and two *halli*. The numbers banded each year were

Year	Dark phase	White phase
1959	14	3
1960	4	1
1961	—	—
1962	3	1
1963	16	2
1964	—	—
1965	5	—
1966	3	—
1967	4	1
1968	32	—
1969	155	2
1970	85	2
1971	37	1
1972	9*	1

* 7 *M. giganteus*, 2 *M. halli*

The increase in 1969 is a reflection of the increased effort to catch giant petrels. The relationship of white to dark phase is in these data, as in Table 2, a consequence of selective catching since it is doubtful if more than one per cent of the birds seen at Malabar are of the white phase.

Birds which were banded overseas and recaptured at Malabar are listed in Table 2. It is notable that all but one of the *M. giganteus* were recaptured within 3-8 months of being banded as chicks. One had been banded over 8 years previously as a chick. All of the three *M. halli* had been banded on Macquarie Island, two as adults three years previously.

In Table 3 may be seen where giant petrels banded or sighted at Malabar have been re-

covered. All of the 30 recoveries were in the Pacific region with 10 at Malabar, 11 elsewhere on the eastern coast of Australia, 8 from New Zealand and one from Chile. Although most were recovered within four months, seven were recaptured in the following season, one on the coast of Chile, two in New Zealand and four on the eastern coast of Australia.

Discussion

Giant petrels which were banded when captured or banded at Malabar have only been recovered subsequently in the Pacific area. Nine were recaptured at Malabar within 1-12 weeks and eight were recovered elsewhere on the coast of eastern Australia within 2-16 weeks. This suggests that some giant petrels remain in favourable feeding areas for considerable periods during the season whereas others, such as those recovered in New Zealand, move on promptly. The recovery of four birds on the east coast of Australia in the following season suggests that some may return to known feeding areas as do Wandering Albatrosses.

Most of the *M. giganteus* which were banded when caught came from Signy Island where they had been banded as chicks 3-7 months earlier. One was an adult, 8.5 years old, which indicates that adults range widely for food when not breeding. Unfortunately adults are wary and difficult to catch so the techniques employed at Malabar tend to select immature birds of the season. Towards the end of the 1972 season the age composition of groups of giant petrels was determined before attempts were made to capture a bird. The following preliminary figures show that probably a considerable number of adults visit Malabar. The numbers are small because of the poor year but of 19 birds, 14 were immature and five were adults.

The three *M. halli* were from Macquarie Island and two were adults. This difference in the age composition may indicate behavioural and dispersal differences between the two species of giant petrel.

There has been a marked decline in the number of giant petrels seen off Malabar since 1970. Whether this is a consequence of improvements in the processing of sewage thus rendering the area less attractive to these birds, or whether the cause is more universal is not known. It is hoped that it is a temporary decline as it is expected that much can be learned of the biology of both *M. giganteus* and *M. halli* by studies at their non-breeding feeding areas. There is clearly a need for more critical observations to determine age and sex composition of visiting groups and for more effort to capture adults. It is along these lines that future studies at Malabar will proceed.

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