First Report of the New South Wales Albatross Study Group

By

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A Black-browed Albatross is 'hooked' with the tackle shown in text figure.

Photo. by J. D. Gibson.

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I. INTRODUCTION

History and Formation of Group

Although the occurrence of the Wandering Albatross (*Diomedea exulans*) off the eastern coast of Australia has long been known to ornithologists in that country, it is only in recent years that attention has been focussed on a significant concentration which takes place off the New South Wales coast during the winter and early spring.

Hitherto, literature concerning the Wanderer's activities, when it is not bound to its natal islands by breeding commitments, has built the familiar picture of a solitary and independent vagabond freely roaming the southern seas in the latitudes of the west wind drift. Therefore, the winter concentration here discussed is unique in several ways. The number of birds compressed into a relatively-small area represents an 'albatross density' apparently not equalled elsewhere in the world. The fact that here *exulans* not only approaches the shore but is generally confined to a coastal strip, where it appears to remain sedentary for a considerable time, conflicts with our conception of a confirmed wanderer of the high seas. Most interesting of all is the evidence of a regular shift of a significant percentage of the total population to winter in these temperate waters of the west Tasman.

When the abundance and accessability of the species became more generally known (1955a, 44-48) numbers of interested persons took the opportunity of viewing and photographing them at ultra-close range from the fishing boat which was made available to us at Bellambi and it was after such a trip in August, 1955, that Dr. A. M. Gwynn suggested that banding operations might be attempted. From what

islands did the birds originate? Did the same ones return each year? Were the adults breeding or non-breeding birds or were both represented? Certainly, banding must be the starting point for tackling the many questions which posed themselves. If any further stimulus was necessary it was the exciting prospect of systematically banding albatrosses *at sea* for the first time.

In 1956, investigations were carried out to develop a practical catching method, several birds being ringed in the course of the experiments. It became obvious that the banding of large numbers was feasible, and, in June 1958, a meeting held in Sydney resulted in the formation of a second operative party to concentrate on the birds in the Sydney region. These two groups, centred 35 miles apart at Bellambi (south central coast) and Malabar (Sydney) decided to become a duly organized and independent group known as the New South Wales Albatross Study Group, to operate as an integral part of the Australian Bird-banding Scheme. The object of the group is to accumulate, by means of banding, observation, or any other method, as much information as possible concerning the life of *Diomedea exulans* when at sea. The Black-browed Albatross (*D. melanophris*) occurs in similar numbers to *exulans* but due to the latter's more phlegmatic disposition it is much more easily captured and hence the better subject for investigation.

Past and Present Banding of Wandering Albatrosses

Specific details of banding work done in the past are not available: mostly they have been of an incidental nature though the few recoveries that are on record are sufficiently illustrative of the bird's remarkable potentialities as regards mobility and endurance, *e.g.* Crozets to Western Australia, 3,027 miles in 46 days (1951, 109); 43°S, 148° 40′W to Chilean coast, 3,150 miles in 12 days (1936; 546). So far as we are aware, the only places where *exulans* has been banded recently are Gough Island (1958a, 1-26) and Macquarie Island. The Gough Island Scientific Survey was responsible for banding about 220 in 1955-56 with bands bearing the address of the Falkland Islands Dependencies Survey (no recoveries as yet), whilst in 1954-55 Australian National Antarctic Research Expeditions commenced a scheme based on observation and re-capture of colour-ringed members of the small Macquarie Island population.

Distribution—General

The known breeding stations include South Georgia, Tristan da Cunha and Gough Islands in the South Atlantic; Kerguelen, Prince Edward and Crozet Groups in the South Indian Ocean; and Campbell, Auckland, Antipodes and Macquarie Islands to the south of New Zealand. These last

islands, in the Australian Region, are within a range of 2,000 miles from Sydney, whereas the next closest, Kerguelen, is roughly 5,000 miles distant. Adams Island in the Auckland Group appears to be the main breeding ground in Australasian seas (W. Dawbin, pers. comm. to M. D. Murray).

These breeding grounds occupy a circum-polar belt in the southern hemisphere typified by strong and constant westerly winds. The pelagic range of the species includes this zone, and is bounded, in general, by the 30th and 60th parallels. More northerly extensions of this range occasionally take *exulans* as far as, and sometimes beyond, the Tropic of Capricorn. These records usually relate to the waters adjacent to the southern land masses which are influenced by cold northward-flowing ocean currents, especially off the western coasts. Thus the Humboldt and Benguela currents thrust fingers of compatible surface waters along the western coasts of South America and southern Africa respectively, whilst similar conditions account for the occurrence of southern birds, including *exulans*, off the Western Australian coast.

Distribution—Eastern Australia

The presence and movements of the Wanderer in the coastal waters of eastern Australia have been reported in *The Emu* from time to time. D. Le Souef (1915, 166) said of the Shy Albatross (*D. cauta*) and *exulans*—"I have never seen these birds north of Brisbane and they rarely go nearer the coast than three miles." A. F. Basset Hull (1916, 215), in the course of his many coastal trips, recorded them off central New South Wales from June to November, being most numerous in August, September and October. Both Basset Hull (1916, 214) and E. W. Ferguson (1921, 108) reported Wanderers to be "by no means uncommon" in Sydney Harbour, and the latter (1921, 106) observed many birds between Sydney and Port Macquarie during a September voyage. W. B. Alexander (1922, 267) found it to be "numerous off the northern coast of N.S.W." in October.

More recently, K. A. Hindwood (1955b, 213), in summarizing several years' observations from the Malabar cliffs at Sydney, said ". . . the main period when this species is present, often in hundreds, is from May to mid-November, after which there is a sharp drop in numbers. The December population seldom exceeds thirty or forty birds, whilst only a few, or none at all, are present during January and February, though on one occasion . . . ten were noted in mid-January. . . . Towards the end of April or early in May there is a large influx, and for the next six months it is not unusual to record from 100 to upwards of 400 birds. . . ." From the same vantage point A. R. McGill counted 548 Wanderers on August 11, 1957 (pers. comm.)

The experience of the writers in the Thirroul/Bellambi area confirms the Malabar observations as regards the monthly fluctuations in density, although the actual numbers encountered are generally well below the spectacular counts recorded there. Malabar is so irresistibly attractive—at least to albatrosses, Giant Petrels, etc.—because a submarine sewage outfall issues into the sea at that point, providing an unfailing supply of suitable food. This particular outfall, which has been more fully discussed by Hindwood (*loc. cit.*) is, in effect, an artificial feeding station, a magnet for sea-birds, similar in this function to the southern whaling stations, *e.g.* South Georgia (1936, 563).

On occasions, the Wanderer penetrates the warmer seas as far as 20°S latitude. Thus, in September 1926, "Snowy Albatrosses . . . in all stages of plumage" followed W. MacGillivray's ship into the Whitsunday Passage off the coast of Queensland (1927, 95). During the course of many coastal trips covering a period of two and a half years L. Amiet (1958b, 220) logged the Wanderer as far north as 19° 43′S, and, from the same observer's data, a maximum northerly penetration is indicated for the months July to September. In August 1944, a decaying carcass was found on a beach near Noumea, New Caledonia (1947, 233), and one of the writers (J.D.G.) has examined a mounted specimen in the Noumea Museum said by the curator to have been collected there in December 1953.

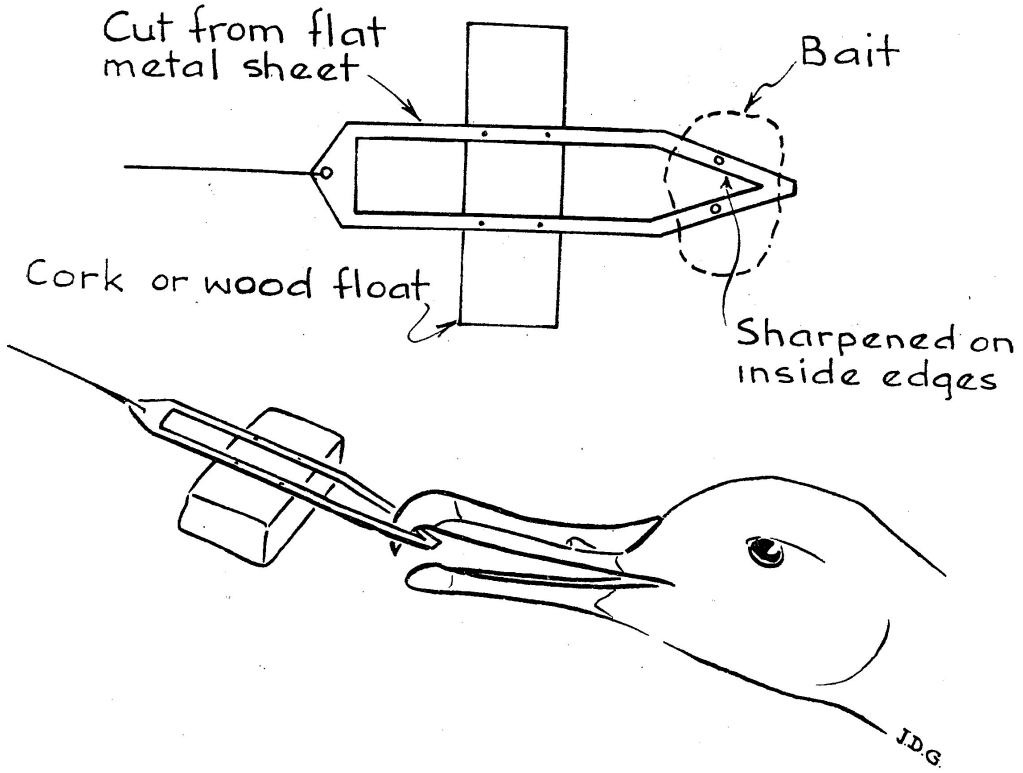
From the foregoing it is evident that there are at least some Wandering Albatrosses in eastern coastal waters in every month of the year. From May the numbers build up into a peak covering July, August and September, and subside to the low figure again during November. It would also appear from the literature that the number of birds now wintering off New South Wales greatly exceeds that of, say, 25 years ago. There may be some connection here with the Malabar sewage feeding station, although it must not be assumed that the pickings to be had there support a large proportion of the total birds. Rather, the majority seem to depend on natural food—a subject which will be mentioned later.

II. Materials and Methods

Catching Technique

Initially a method using flat metal triangles (see figure), baited with cuttle-fish meat, was tried but soon abandoned due to its slowness and uncertainty. Experiments with various nets eventually led to the adoption of a circular hoop of cane about 4 feet 6 inches in diameter, to which is attached a loose net (8 to 10 inch mesh) made from light cord. Several yards of strong line made fast to the hoop and the boat enables the apparatus, and the bird, to be retrieved after a throw. The success of netting naturally depends on being

able to get within throwing range of the bird and here the Wandering Albatross seems to exhibit a remarkable tolerance in allowing a close approach. The fact is that at certain times the bird is virtually *incapable* of flight. The two factors which cause this condition, and which naturally operate to the advantage of the potential bander, are the absence of wind and an abundance of food. The Wanderer requires a tremendous effort to become air-borne in still air, and, if the unfortunate bird is further burdened with several pounds of food in its stomach, the feat becomes impossible.



A non-injurious type of tackle for catching albatrosses, similar to that sometimes used from sailing ships.

In practice, the bird is approached down-wind, and, as it swims away from the bow, the hoop is spun over it by the catcher stationed forward. While the catcher takes up the slack in the line, the boat is turned on to the enmeshed bird which is thus brought alongside where it is lifted bodily aboard by the handler. With experience, the technique of net-throwing can be developed to a high degree, enabling birds to be captured from twenty or more feet away—actually in the process of taking flight. More usually, however, it is only necessary to clap the net over the bird while still retaining hold of it, and sometimes a bewildered albatross can be hoisted aboard simply by grasping its upraised wings. The boat is not stopped during the whole process; while one bird is being banded, course is set for the next one. In this way, when all conditions are favourable, rings can be applied at the rate of 15 or more per hour. The foregoing method

is that employed by the Bellambi group whose 14-foot boat, a sturdy fishing craft, with 4-h.p. engine inboard, is usually operated by a team of three or four. The dinghies used by the Malabar group carry two-man teams. They are of much lighter construction (fibre-glass and plywood) and use outboard motors. The catching method adopted there is different only in detail, some restriction having to be imposed on vigorous movements in such lightweight craft.

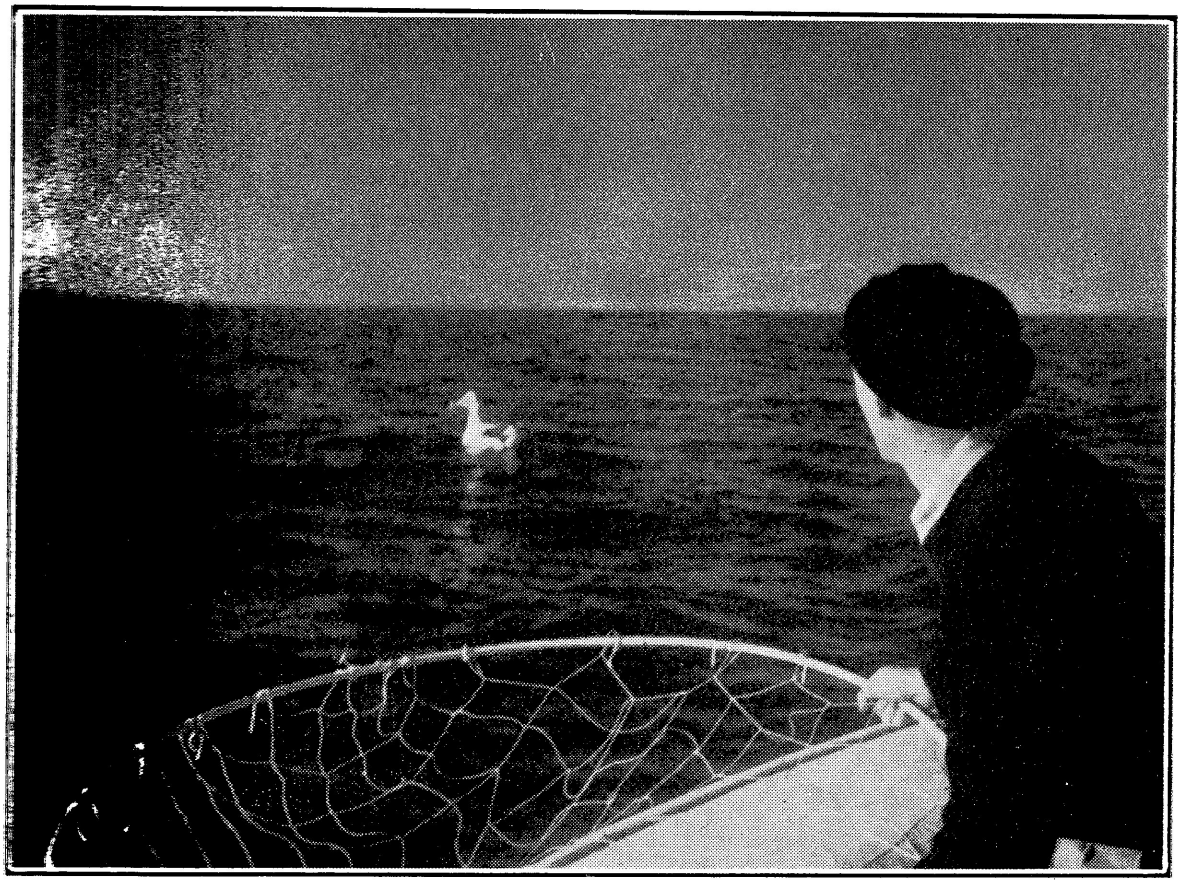
Handling

The necessary procedure in handling *exulans* is quickly, if painfully, learnt. Being robust birds, they can be safely lifted on board by bill, wing, leg or tail, without risk of injury (to the bird). The bill is immediately held closed, both as an obvious precautionary measure and to prevent the bird being sick in the boat (which it frequently does if not prevented). The powerful feet, equipped as they are with extremely-sharp claws, are responsible for most minor injuries, and should be held together. Despite their size, the wings are innocuous as offensive weapons, but these too should be folded and confined to protect them from any risk of damage.

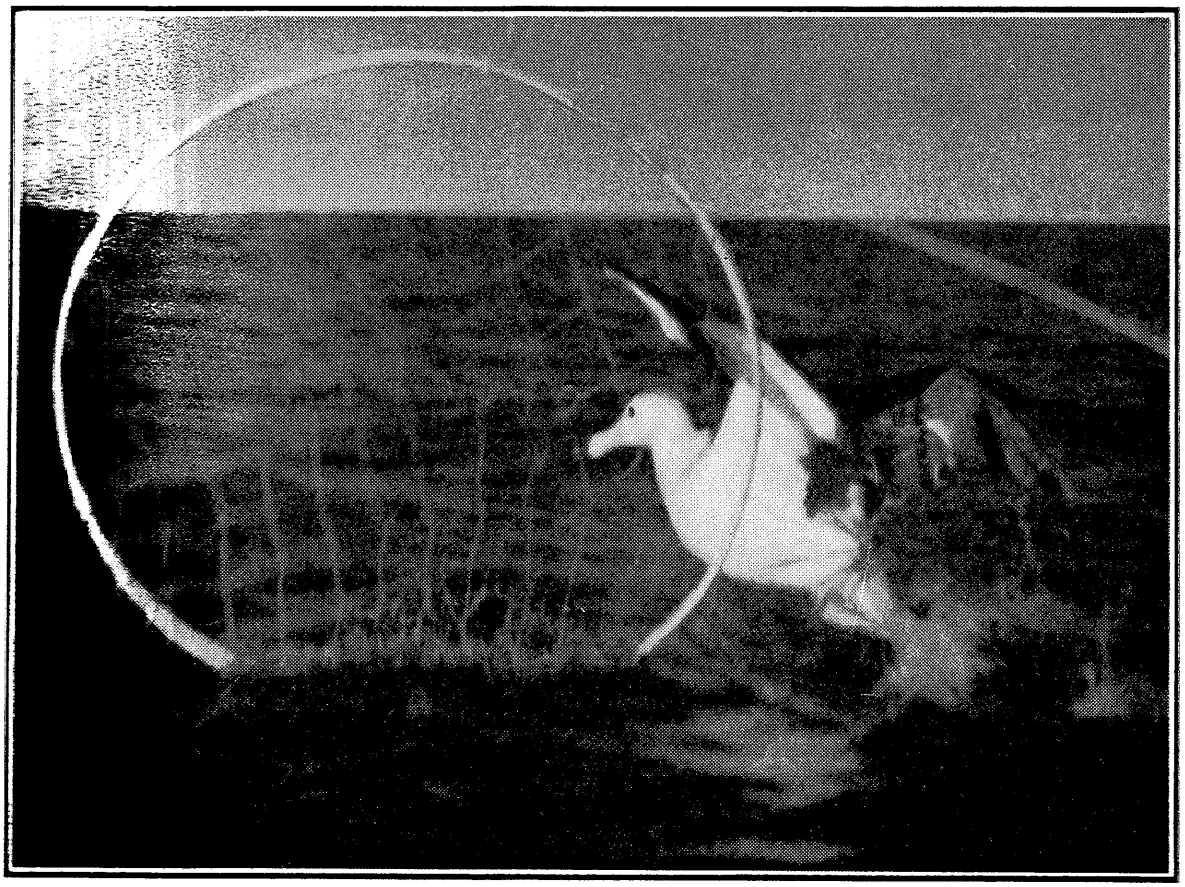
Marking

Size 14 aluminum bands are used. Stamped on the outside is the serial number together with the words 'Write—Wildlife CSIRO Canberra—Australia'. The bands are formed in a circle from 1/16 inch material by 5/8 inch wide and are closed without overlap, giving an internal diameter of 3/4 inch. Although these bands are the best available to us at the present time, it is felt that a more durable material (*e.g.* monel metal) would be more suited to a bird with such a potential life as *exulans*. With a view to extending the life of the existing bands, a small batch has been experimentally coated with a glass-hard impervious film of phenolic resin. The Bellambi group has invariably placed the band on the left leg; the first hundred birds were also marked with a coloured (red) plastic ring on the right leg. The latter are wrapped on scroll-wise and not cemented—it is noteworthy that one bird, re-trapped after two weeks, had lost or removed its colour ring. Malabar birds, up to the present, have been banded on either leg and no colour rings have been used in this locality.

To avoid re-capturing recently-banded birds, the sides of the head or neck of each bird are painted with dye before it is released. The dye used is only temporary, all trace having disappeared within a fortnight. For this purpose the Bellambi group uses Gentian Violet (an appropriate choice; being an antiseptic it can also be used for daubing the wounds of the handlers).



Preparing to net a Wandering Albatross.



The net is thrown to intercept a bird which is attempting to fly.

III. Results

The total numbers of *exulans* banded and the dates of banding operations are set out in tabular form below.

Numbers and Place of Banding

Date	Bellambi	Malabar
22/7/56	7	
5/8/56	1	
19/8/56	5	
5/7/58		4
26/7/58	21	
2/8/58	8	25
3/8/58	12	
9/8/58		24
10/8/58	32	
23/8/58	39	19
Totals	125	72

Total number of *exulans* banded to date = 197
Other species (*Diomedea melanophris*) = 2

Band numbers used on *exulans*: 140-00601 to 00641, 140-01501 to 01532, 140-01534 to 01539, 140-01541 to 01566, 140-01568 to 01600, 140-01901 to 01930, 140-01941, 140-02101 to 02128.

Re-traps

To date there have been no returns, and the only re-traps have been short-term ones. Nevertheless, they are not without interest. Seven birds have been re-trapped at intervals ranging from two to four weeks after banding.

Of the 22 birds banded at Bellambi on 26/7/58, three were re-trapped 15 days later, and three, 28 days later; one bird (140-01534) was caught on both occasions. Another, banded on 10/8/58, was re-trapped after 13 days. All of these re-traps were taken at the place of banding, which suggests that, if their food needs are satisfied, many are content to stay in a very local area rather than wander indiscriminately. Alternatively, if it be allowed that some travelling had taken place since banding, the above could be construed as evidence of an attachment or bond between individuals. For instance, it seems more than fortuitous that numbers 140-01525 and 140-01527, banded together on 26/7/58, were still together when re-captured 4 weeks later, though it would have been more significant had the birds been re-trapped elsewhere.

Re-sights

Although the two banding stations are separated by only 35 miles, none of the 72 birds banded at the Malabar station was taken at Bellambi; likewise none of those banded at

the latter place was re-captured at the former. This would be due partly to the large number of birds present during the period of operations, though it may further indicate a lack of strong intermixing.

So far two re-sights are recorded. At least one colour-ringed bird from Bellambi was seen at the northern station (S. G. Lane, *in litt.*). Also, a Wanderer with red dye on the head was sighted 14 miles off Narooma, which is 165 miles to the south of Malabar where the bird was banded five days previously.

IV. OBSERVATIONS

Food

All observations to date emphasize the important role that cuttle-fish play in the food chain of *exulans*. This is the large marine cuttle-fish *Amplisepia verreauxi* the shell of which measures up to 18 inches in length, as distinct from the several smaller species of the estaurine flats. The total length of *Amplisepia* in the flesh is reported to reach three feet (1950, 446). It is of seasonal occurrence off the New South Wales coast, but apart from that, little, if anything, is known of its movements. When the birds are seen actively feeding it is almost invariably on cuttle-fish (floating refuse at Malabar); disgorged meals and stomach contents of derelict specimens are composed of cuttles.

The sharp winter increase in Wanderer numbers is nicely synchronized with the sudden appearance of large cuttle-fish in coastal waters, and there is some evidence to show that the abundance of *exulans* is proportional to that of *Amplisepia* (duly allowing for the artificial influence of the Malabar outfall). It should be borne in mind, however, that the fundamental reasons accounting for the presence of *both* animals will probably be found in the hydrological conditions pertaining to the region. Additional data on this aspect are needed. It is known that the predominating ocean current of eastern Australia is a southward-flowing one bearing warm sub-tropical water. The edge of this stream stands some miles off shore, thus confining cooler water of lesser salinity against the coast. A counter-flowing cold current moving between the warm stream and the coast reaches a point about 70 miles south of Sydney where it becomes less well defined. The strong tendency of *exulans* and other albatrosses to remain coast-bound is probably related to the above conditions.

Some notes on the feeding habits of *exulans* previously published (1955a, 45) showed that full advantage is taken of the food provided by the predations of large fish and dolphins on marine cephalopods. R. C. Murphy (1936, 486) suggests that petrels which forage on cuttle-fish and squids do so mainly at night when those organisms approach the surface. That the Wanderer can and does catch live cuttle-

fish by day was demonstrated by the following incident seen by J. D. Gibson and A. Mothersdill on 26/7/58. A Wanderer cruising about 15 feet above the water suddenly baulked and dropped to the surface. It immediately plunged below, except for its extremities, to retrieve a writhing cuttle which was vigorously ejecting sepia ink into the bird's face. The albatross was caught for banding and meanwhile the prey made its escape. It has been suggested that cuttle-fish found in the vicinity of the surface during daylight are dead or dying, the natural mortality of a denizen of the depths, and that a day-feeding albatross could only catch for itself one of these moribund specimens.

Miscellaneous

Information has been collected on various other aspects, the study of which will be intensified in the future. Briefly summarized they are—

(1) *Variation in size.* There is a striking size disparity between individuals.

(2) *Age groups.* It appears that only a small percentage are juvenile birds (mostly brown), about a quarter are fully developed adults, and the majority are intermediate.

(3) *Pink head 'stain'.* Occurs on immatures as well as adults though not on all birds of either group. Colour completely disappeared within a day of a sample feather being plucked.

(4) *Colours of soft parts.* The eyelids can be pale blue, greenish-blue, pink or livid white. The legs have been variously noted as being flesh white, medium blue and pink; often they are bi-coloured—bluish with bright pink heels.

V. The Future

The encouraging results of the past season's activities augur well for the future success of the project. Commencing next winter (1959) it is intended to colour-ring all birds banded in order to obtain the maximum data from re-sights.

Red bands of bonded aluminium/Scotchlite will be used. These should be visible to observers on ships when the birds pass close over the stern and will certainly be so when the legs are lowered preparatory to landing or when taking off, provided reasonably near views are obtained. The reflective quality of 'Scotchlite' may enable them to be seen by torchlight when following ships at night.

The possibility will be investigated of establishing a banding station on the far south coast at Eden (240 miles south of Sydney) where *exulans* is reported to congregate during October and November.

VI. Acknowledgements

It is obvious that many persons have assisted in this project by giving their time and efforts to the banding opera-

tions. These we wish to thank. Especially enthusiastic in this regard have been M. D. Murray, S. G. Lane and C. Campion, who acted as leaders of the Malabar group. We must also acknowledge with appreciation the consistent enthusiasm and generosity of Mr. A. Mothersdill who has contributed in many ways to the successful work at Bellambi, and Mr. G. Reid who gave his services as launchman at Malabar.

VII. ADDENDUM.

Since the foregoing notes were submitted for publication, Falkland Islands Dependencies Survey personnel have notified the Wildlife Division of the C.S.I.R.O. that Wandering Albatross no. 140-02111, an adult male banded off Bellambi on August 23, 1958, was present on Bird Island, South Georgia, from December 29, 1958, to March 6, 1959. During that time it occupied a territory with a mate, but did not breed.

VIII. REFERENCES

1915. Le Souef, D. 'North Queensland Birds', *Emu*, 14, 163-166.
1916. Hull, A. F. Basset. 'Avifauna of New South Wales Islands', *Emu*, 15, 207-216.
1921. Ferguson, Eustace W. 'Notes on Some Australian Tubinares—Petrels and Albatrosses', *Emu*, 21, 104-114.
1922. Alexander, W. B. 'Observation and Records of Australian Sea-birds, 1920-1', *Emu*, 21, 261-272.
1927. MacGillivray, W. 'Birds from a Coastal Boat', *Emu*, 27, 92-101.
1936. Murphy, R. C. *Oceanic Birds of South America*, vol. 1.
1947. Warner, Dwain W. 'Occurrence of the Wandering and Black-browed Albatross on New Caledonia', *Emu*, 47, 233.
1950. Allan, Joyce. *Australian Shells*, Georgian House, Melbourne.
1951. Serventy, D. L., and Whittell, H. M. *Handbook of the Birds of Western Australia.*
1955a. Gibson, J. D., and Sefton, A. R. 'Notes on Some Albatrosses of Coastal New South Wales', *Emu*, 55, 44-48.
1955b. Hindwood, K. A. 'Sea-birds and Sewage', *Emu*, 55, 212-216.
1958a. Sladen, W. J. L., and Tickell, W. L. N. 'Antarctic Bird-banding by the Falkland Islands Dependencies Survey, 1945-1957', *Bird-banding*, 29, 1-26.
1958b. Amiet, L. 'The Distribution of *Diomedea* in Eastern Australian Waters: North of Sydney', *Notornis*, 7, 219-230.

Tasmanian 'Records'.—On January 12, my wife and I saw a Tattler (*Tringa* sp.) feeding on a rock reef on the beach at Marrawah in the extreme north-west of Tasmania. The only other records of Tattlers in this State have been in the south-east at South Arm, and at Pittwater where Mr. L. E. Wall had a bird under observation at intervals from 1948.

On Good Friday, March 27, at Little Swanport on Tasmania's east coast, we had two Little Egrets (*Egretta garzetta*) under observation from thirty feet for over half an hour. We could find no deviation from field descriptions obtained at Dunalley in 1957 and 1958, which are the subject of a recent submission to *The Emu*.—PETER F. BOLGER, Medway Point, Tas., 21/4/59.