

ALBATROSS DISPLAYS OFF THE SOUTH-WEST COAST OF SOUTH AFRICA

By J. COOPER

ABSTRACT

Displays observed at sea for four species of albatross (*Diomedea exulans*, *D. melanophris*, *D. cauta* and *D. chlororhynchus*) off the south-west coast of South Africa are described. Incidence of occurrence is related to time of year and to number of birds. Displays were observed mainly in November and December, during the breeding seasons of all four species. It is suggested that displays at sea occur among non-breeding adult and immature birds and are similar to pair-formation displays at the breeding grounds.

INTRODUCTION

Displays at sea have been mentioned or described for the Wandering Albatross (*Diomedea exulans*) (Courtenay-Latimer 1953, Murphy 1914), the Royal Albatross (*D. epomophora*) (Richdale 1950), the Black-browed Mollymawk (*D. melanophris*) (Lowe & Kinnear 1930), the Yellow-nosed Mollymawk (*D. chlororhynchus*) (Courtenay-Latimer 1953), the Black-footed Albatross (*D. nigripes*) (Fisher 1904 in Murphy 1936, Yocom 1947) and the Laysan Albatross (*D. immutabilis*) (Palmer 1962). Among the descriptions the following behaviour has been observed: bill-rubbing, wing- and bill-raising, calling and mutual preening. Displays are stated to occur far from breeding sites, sometimes outside the breeding season and between birds of any age-class.

During the period October 1950 to June 1953 sightings of albatrosses were recorded at monthly intervals at routine stations off the south-west coast of South Africa between 32° and 43°S. The observations were made by Second Officer A. Thomas of the R.S. *Africana II*, a Government Division of Sea Fisheries research vessel. The positions of the stations are given by Marchand (1952).

The numbers of albatrosses seen were recorded together with notes on displays. These displays are described and analysed to assess relation to time of year and number of birds for *D. exulans*, *D. melanophris*, the Shy Mollymawk (*D. cauta*) and *D. chlororhynchus*.

DESCRIPTION OF DISPLAYS

D. exulans:

Two birds face each other on the water with partially spread wings and point their bills vertically with outstretched necks. A "high pitched whistling noise" is produced at this time. The birds then lower their necks, fold their wings and engage in bill-rubbing, bowing and preening. This display is similar in description to pair-formation displays at the breeding grounds (Jameson 1958, van Zinderen Bakker Jr. 1971).

D. melanophris:

Bill-rubbing between two birds is the only display described. Downes, Ealey, Gwynn & Young (1959) mention bill-rubbing prior to mating for this species.

D. cauta:

Pairs of Shy Mollymawks rubbed bills and made "croaking noises." Murphy (1936) describes bill-rubbing and "cackling" between paired birds at the nest.

Bill-rubbing between *D. melanophris* and *D. cauta* was observed on two occasions; one display is described as "momentary." Display between different albatross species at sea does not appear to have been previously described. On both occasions there was more than one individual of each species present. These two observations have not been included in the analysis.

D. chlororhynchus:

Thomas did not observe display in this species, the least commonly seen. Courtenay-Latimer (1953) describes a display observed in South African waters where mutual preening, bill-rubbing and bowing occurred. Touching bills and bowing is part of pair-formation display in this albatross (Rowan 1951).

TABLE 1

Number of times albatrosses observed displaying in South African waters in relation to species and time of year

Month.	J	F	M	A	M	J	J	A	S	O	N	D	Total
<i>D. exulans</i>		1	1	1	1	2					4	3	13
<i>D. melanophris</i>		1			2						3		6
<i>D. cauta</i>											3	1	4
<i>D. chlororhynchus</i>											1		1
Total	-	2	1	1	3	2	-	-	-	-	11	4	24
No. group sightings*	39	90	88	91	181	136	51	49	38	88	105	82	1 037
% Incidence of occurrence	-	2,2	1,1	1,1	1,7	1,5	-	-	-	-	10,5	4,9	2,3

*more than one bird of each species observed

INCIDENCE OF OCCURRENCE OF DISPLAY

The incidence of occurrence of display is analysed in relation to time of year (Table 1) and to number of birds (Table 2). An observation of displaying *D. exulans* and one of *D. chlororhynchus* in South African waters by Courtenay-Latimer (1953) have been included in the analysis.

Birds were observed displaying on 24 occasions. Sightings of two or more individuals of any species at each station were made on 1,037 occasions. The incidence of occurrence of display for all four albatrosses is 2.3%. Displays were most commonly observed in *D. exulans* (a 4.4% incidence of occurrence) and at a similar level in *D. melanophris* and *D. cauta* (incidences of occurrence of 1.1% and 1.7% respectively). Only one display has been recorded for *D. chlororhynchus*.

Display occurs most commonly in November and December (Table 1). Sixty-two percent of the observations occurred in this period with nearly half occurring in November alone. In November display was observed in over 10% of all sightings of two or more birds. No displays were observed in the period July to October or in January. Displays in *D. exulans* occurred more widely during the year than in other species, but this may be partially due to the larger number of displays observed for this albatross.

TABLE 2

Number of times albatrosses observed displaying in South African waters in relation to species and group size

Group size	1	2-5	6-10	11-15	16-20	21-25	+25	No. group sightings*	No. displays	% Incidence of occurrence
<i>D. exulans</i>	149	206(2)	84(5)	13(3)	6(2)	2(1)	-	311	13	4.2
<i>D. melanophris</i>	192	250	36	19(1)	12(2)	8	23(3)	348	6	1.1
<i>D. cauta</i>	209	267(1)	52	13(1)	6	4	15(2)	357	4	1.7
<i>D. chlororhynchus</i>	51	21(1)	-	-	-	-	-	71	1	4.8
Total	601	744(4)	172(5)	45(5)	24(4)	14(1)	38(5)	1 037	24	2.3
% Incidence of occurrence	-	0.5	2.9		11.1	16.7	7.1	13.2		

* (No. of displays observed is given in parentheses)
more than one bird of each species observed

Displays occurred more commonly when there were large numbers of birds in a group (Table 2). The incidence of occurrence of display for groups of two to five birds is only 0.5% (four displays among 744 observations); for groups of over 25 birds the incidence of occurrence is 13.2% (five displays among 38 observations). Displays occur more commonly among small groups of *D. exulans* than in the other species but large groups of this albatross (over 20 birds present) were rarely seen.

DISCUSSION

Albatross displays at sea appear similar to displays given at the breeding-grounds during pair-formation. Richdale (1950) observed the Ecstatic Ritual of *D. epomophora* at sea; he considers this "ritual" a pair-formation display.

D. exulans arrives at its breeding-grounds on Bird Island, South Georgia and Marion Island in early and late November respectively and pair-formation displays occur in this and the following month (Tickell 1968, van Zinderen Bakker Jr. 1971). *D. melanophris* arrives late in September on Bird Island (Downes *et al.* 1959, Tickell & Pinder 1967). Birds arrive in early October and egg-laying commences the same month in the Falkland Islands (Murphy 1936). *D. cauta* gathers for the breeding season at the Bounty Islands in August and egg-laying occurs at the end of September or early October (Le Souef 1895, Oliver 1930 in Murphy 1936). *D. chlororhynchus* was first seen ashore at Tristan da Cunha in early September, egg-laying occurring in this month and in October (Rowan 1951). Pair-formation displays commenced soon after the birds came ashore.

The monthly distribution of displays at sea with a peak in November and December therefore suggests that displaying birds are non-breeders since egg-laying has commenced for the three smaller albatrosses by November and *D. exulans* arrives at its breeding grounds in this month. Richdale (1950) states that the Ecstatic Ritual of *D. epomophora* does not occur once the egg is laid.

The observations are not detailed enough to analyse display in relation to age-class but some displaying *D. exulans* were immature. *D. exulans* does not breed every year but *D. melanophris* does (Tickell & Pinder 1967). There does not appear to be any definite information on the breeding interval of *D. cauta*. *D. chlororhynchus* may not breed every year. During two years of observations on Tristan da Cunha ringed birds were recorded breeding, but different birds were seen in each season (Rowan pers. comm.).

It seems likely that most displaying birds are either adults that are not breeding in the year of observation, having bred in the previous year, or immature birds that have not yet bred for the first time.

Displays were observed more commonly in large groups where birds tended to form a raft at a food source (as during trawling operations). Under these circumstances the birds would be close together allowing display to occur. Richdale (1950) observed parties of up to eight *D. epomophora* displaying at sea. It is likely that the "urge" to display increases with the number of birds present, since birds engaged in Ecstatic Rituals at the breeding grounds attract other birds to join in (Richdale 1950).

ACKNOWLEDGEMENTS

All the data analysed above were collected by Second Officer A. Thomas of the R.S. *Africana II*. I owe a debt to him for making his observations available for study.

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J. Cooper,

Percy FitzPatrick Institute of African Ornithology,
University of Cape Town,
Rondebosch, C.P.,
South Africa