

A "SOUTHERN" GANNET IN THE MEDITERRANEAN

While seawatching from the drilling rig *Ocean Voyager* at 40 40N, 01 17E, approximately 30 km off the Ebro Delta, Spain, in the Mediterranean Sea on 28 January 1985 I observed a gannet *Sula* sp. which was obviously different from North Atlantic Gannets *S. bassana* present at the same time.

I observed the bird through 10 X 40 binoculars under very good light conditions. The time was 11h30 GMT with visibility to the horizon and the sun behind me. The sky had a light covering of alto stratus and the wind force was 4 to 5 from the north.

I first noticed the bird by its different flight in relation to North Atlantic Gannets. The flap/glide sequence was different with more rapid flaps between glides. The individual approached the rig from the northeast and passed it at about 300 m heading southwest.

The bird was an adult gannet with all-black secondaries and a tail that was uniformly black except for at least one outer tail feather which was white. Only one side of the tail was seen clearly so it is not known whether a white outer tail feather was present on both sides or not. The pale blue-grey bill and the creamy yellow cast to the head were visible. At certain angles the white alula patch could also be seen. No black patches or flecking were present on the white parts of the plumage.

Only one species of gannet, the North Atlantic Gannet, has been recorded from the Mediterranean Sea where it occurs regularly in winter (Cramp & Simmons 1977). At any one time up to 20 juvenile, immature and adult birds of this species were seen from the rig during January 1985. Adult North Atlantic Gannets have all-white secondaries and tails and whereas immatures retain some black secondaries they also have black feathers on the body which serve to distinguish them from adult birds (Cramp & Simmons 1977, Nelson 1978a, Harrison 1983). It therefore seems most unlikely that the bird was a North Atlantic Gannet.

Two other species of gannets occur in the Southern Hemisphere: the Cape Gannet *S. capensis* and the Australasian Gannet *S. serrator* (Nelson 1978a, Harrison 1983). In typical adult plumage both species have all-black secondaries. The adult Cape Gannet typically has an all-black tail and the adult Australasian Gannet has 3-10 (usually four) central black feathers out of a total of 12, the outer feathers being white (Nelson 1978a). Adult Cape and Australasian Gannets can therefore be identified by the appearance of their tails. However, adult Cape Gannets occasionally have some white feathers in the tail. Broekhuysen & Liversidge (1954) found that 0,4 % of adult Cape Gannets had at least one white tail feather. However, it is likely that 0,4 % is too high a figure since some bias existed in the method of estimation (Broekhuysen & Liversidge 1954). Australasian Gannets have a short gular stripe and Cape Gannets a long one. The length of the gular stripe is therefore a much safer method of separating the two species. Unfortunately, the gular stripe of the Mediterranean gannet was not seen. Thus, on descriptive grounds the bird

cannot be identified specifically.

On distributional grounds it would initially seem most likely that the bird was a Cape Gannet. The species regularly disperses north of the equator in the Atlantic Ocean: the most northerly definite record is of a ringed juvenile recovered at sea at 21 40N, 13 55W off ex-Spanish Sahara (Crawford *et al.* 1983). A more northerly record is of a bird collected at Bass Rock, Scotland in May 1831 (Nelson 1978b). This record has not been generally accepted (see Crawford *et al.* 1983). Most Cape Gannets dispersing north of the equator are under one year of age, based on ringing recoveries (Crawford *et al.* 1983).

The Cape Gannet is capable of long-distance movements outside its normal range. An adult bird was photographed (and positively identified by its long gular stripe) breeding with an Australasian Gannet in Victoria, Australia (Cameron 1981, Venn 1982).

The Australasian Gannet is also capable of long-distance movements: adult birds have been recorded at the Crozet and Marion islands (same individual, Brown & Oatley 1982) and in a Cape Gannet colony in South Africa (Cassidy 1983). Therefore on distributional grounds, it is also not possible to identify the Mediterranean gannet with certainty, although it would seem to be more likely to have been a Cape rather than an Australasian Gannet.

Descriptions of sightings of adult gannets with all-black secondaries and with at least some white in the tail outside the normal ranges of the Cape and Australasian species need to include information on the length of the gular stripe before they can be positively identified to species.

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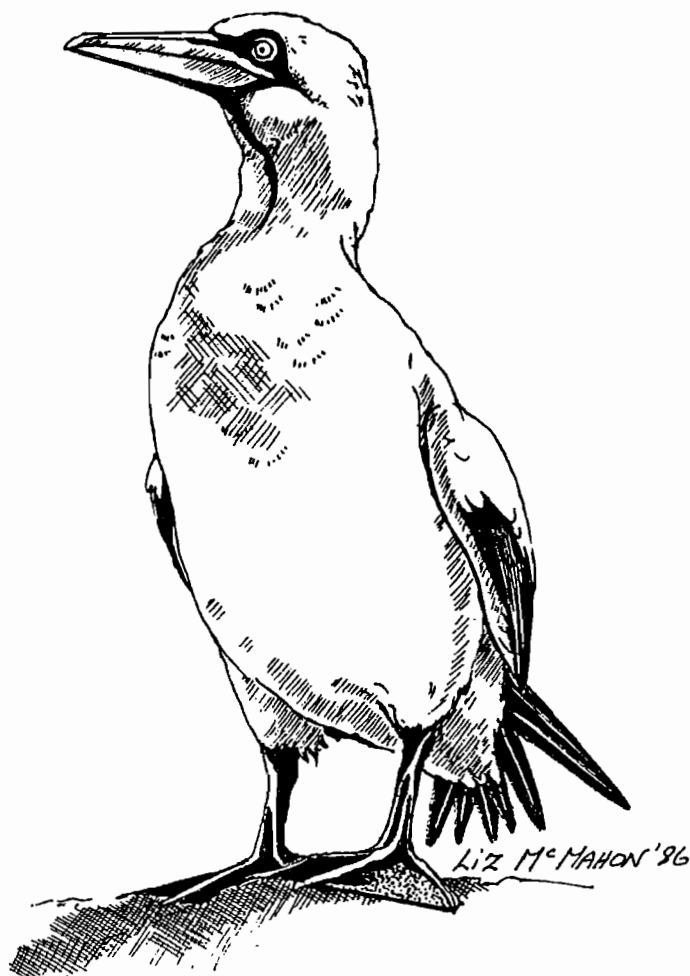
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ON SHY ALBATROSSES *DIOMEDEA CAUTA* IN SOUTH AFRICAN WATERS

Recent observations on Shy Albatrosses indicate that *Diomedea cauta cauta* rather than *D.e. salvini* occurs in South African waters. White (1973) reported on three recoveries in South African waters of immature birds banded at sea off Cape Campbell, South Island, New Zealand which he inferred, following Dr F.C. Kinsky, were the nominate race from their banding location. Bourne (1977) and Clancey (1978) identified seven museum specimens from South African waters as immatures of the nominate race on their plumage and measurements. Harrison (1983:230) referred all of several hundred sightings of immature Shy Albatrosses off Cape Town, South Africa to *D.e. cauta* on the basis of distinguishing features of the underwing, although in 1983 he was able to identify and photograph many immature *D.e. salvini* off Cape Town (Harrison 1984). Only one sighting of an adult *D.e. cauta* has been reported off South Africa (Shaughnessy & Frost 1976). In view of the difficulties of distinguishing between the immatures of these races at sea, judgement on the occurrence of *D.e. salvini* in South African waters should be reserved until specimens or banding data confirm this. Until then checklists should reflect the presence of *D.e. cauta* only (cf. Clancey 1980) rather than both races (cf. Jouanin & Mougín 1979).

Three recent South African recoveries of immature birds banded as nestlings at Mewstone (43 44S, 146 22E), Tasmania, Australia, one of four breeding sites of the nominate race (Jouanin & Mougín 1979, Harrison 1983), provide the most positive evidence to date of the occurrence of *D.e. cauta* off South Africa and the first indication of their origin:

- (a) No. 28000290 Banded 14 March 1982, recovered 16 July 1983
Danger Point (34 37S, 19 17E).
- (b) No. 28000636 Banded 15 March 1982, recovered 17 July 1983
southeastern Atlantic Ocean (30 55S, 19 17E).
- (c) No. 28003632 Banded 10 March 1984, recovered 11 November
1984 Tsitsikamma River mouth (34 08S,
24 26E). The specimen will be deposited in
the East London Museum collection.

Two Shy Albatrosses have been banded and recovered in South African waters:

- (d) No. 5645932 Immature. Banded 6 September 1965, Algoa Bay
(33 53S, 25 48E), recovered 10 May 1966,
Mossel Bay (34 17S, 22 01E).
- (e) No. C2730 Final plumage. Banded 5 September 1962,
Plettenberg Bay (34 04S, 23 22E), recovered
29 June 1970, off Elands River (34 35S,
24 05E).

In such a wide-ranging species, the close proximity of banding

and recovery locations in both these records is intriguing (351 km and 66 km respectively). In the first of these records the bird may have been resident in the period between banding and recovery. In the second record the close proximity of the banding and recovery locations after a period of nearly eight years is remarkable and could imply a distinct preference for that area. Whereas such an interpretation of these records is little more than supposition at present, it is supportive of Harrison's (1983) idea that immature *D.c. cauta* may migrate to South African waters in preference to other regions, and may possibly use the area as a nursery ground. An active banding and recapture programme on this comparatively abundant species (cf. Summerhayes *et al.* 1974) in southern African waters over the next decade would complement and take advantage of the current banding project on Shy Albatrosses started by the National Parks and Wildlife Service, Tasmania in 1980 (N.P. Brothers *in litt.*), and could clarify the status of this species both seasonally and from year to year in this region. In this regard it is of particular interest to note that, "whereas about 3 000 Shy Albatross chicks have been banded at each of two Australian breeding colonies since 1980, band recoveries to date indicate that only birds from one of these colonies appear to visit South African waters" (N.P. Brothers *in litt.*). Confirmation of this interpretation with additional local recovery effort would provide considerable insight into movements of immature albatrosses, and the degree of interchange between different breeding colonies.

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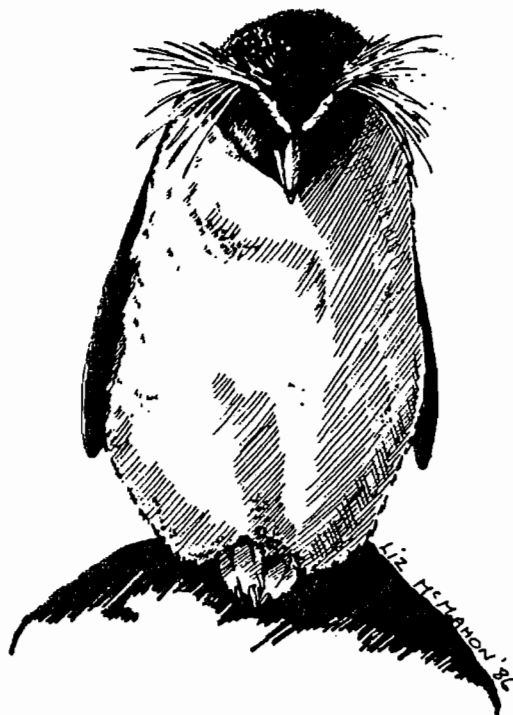
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AN ATTEMPT AT AGING MAGELLANIC PENGUINS *SPHENISCUS MAGELLANICUS*

BY HISTOLOGICAL ANALYSIS OF FEATHER FOLLICLES

Determination of age in birds by morphometric data, crystalline lens mass or other methods has been previously attempted (Payne 1961, Roseberry & Verts 1963, Labinsky *et al.* 1969, Morris 1972, Bucher *et al.* 1975, Bildstein *et al.* 1980, Koenig 1980, Coulson *et al.* 1981, Schneider 1981). Petunkin (1975) determined the age of some Galliformes through an analysis of the feather follicle during the moulting season. In this paper we attempt to apply his technique to the Magellanic Penguin *Spheniscus magellanicus*.

Sixtyfive specimens of Magellanic Penguins, including 10 two-month old chicks, a similar number of six-month old birds, 18 juveniles (one-year old), and 27 adults (13 two-year olds and 14 three-year olds) of both sexes and of known ages, were analyzed. Penguin age was determined by means of numbered coloured plastic bands attached during two breeding seasons (1980 - 1981 and 1981 - 1982) at the Punta Tombo colony (44° 03S, 65° 13W), Chubut Province, Argentina (Scolaro 1984). Penguins were collected during two periods: before moulting (January 1982 and 1983) and during moulting (March 1983 and 1984). Pieces of skin from the back, abdomen and head were removed from each one and immediately fixed in Bouin's Solution for 48 h. Afterwards they were washed with 50 % ethyl alcohol, dehydrated in alcohols of ascendent graduation and included in paraffin. Serial sections of 8 μ m thickness were used, and coloured with Hematoxylin and Eosine. The histological study was made on contour feathers, considering the number of cellular layers of the follicular wall.

Prior to the moulting season feather follicles showed some differences in the number of layers and in their cellular characteristics. Thus, in two-month old chicks, the follicular wall is thin and rolling, the epithelium has three cellular layers, the most profound very basophilic, the intermediate layer of pale nucleous and the corneum slightly conspicuous.

In one-year old birds there are four cellular layers: one of basophilic germinative cells arranged in a palisade, an intermediate layer with three clearly differentiated cell layers and the corneum slightly visible. It is important to point out how the corneus sheath of the feather in specific zones introduces itself in the follicle wall.

In two-year old penguins the number of layers of the follicular wall is similar to that of one-year old birds. However, there are some variations in the epithelium, as for example the presence of a germinative layer with small nuclei, the intermediate layer with three layers slightly differentiated and basophilic.

The follicular cavity is not visible because the wall is compressed by the shaft of the feather. Slight differences regarding morphology and cellular composition of the epithelium are seen between three-year old birds in comparison to one and two-year old individuals.

According to the physiological characteristics of the moult and the tegument of penguins (Grassé 1950, pers. obs.) two groups were considered: an early moult stage with the follicles in the feather formation process and an advanced moult, with fully developed feathers.

Within the first group, six-month old penguins show a follicular wall with four cellular layers consisting of a germinative or deep layer of very basophilic cells in an active process of division, with rounded nuclei and one or more nucleoli and an intermediate stratum of three cellular layers; externally, slightly conspicuous, the corneum layer. It is important to point out that in one, two, three and four-year old penguins, the follicular wall is not different from that of six-month old individuals.

In birds with developed feather follicles, variations in the number of layers as well as in their histological characteristics occur. Six-month old penguins show six layers: an internal layer of germinative cells, and an intermediate stratum of five cellular layers; externally, the corneum formed by flat cells without nuclei.

One-year old birds show in their follicular wall seven cellular layers whose characteristics are similar to those of six-month old penguins. The two-year old specimens show eight cellular layers, the germinative layer being less basophilic in relation to the other age groups. In the intermediate stratum there are seven cellular layers clearly differentiated, with big nuclei, more than one nucleolus and a small corneum. Variations in the histology of the follicle of three-year old birds are not visible, showing similarities in the morphology and number of cellular layers with two-year old birds (Fig. 1).

At present this research continues, applying the same technique to other age classes. According to our preliminary observations the methodology described can be used to estimate the age of penguins during advanced moult: six-month old (six layers), one-year old (seven layers), and two-year old (eight layers) birds can be differentiated.

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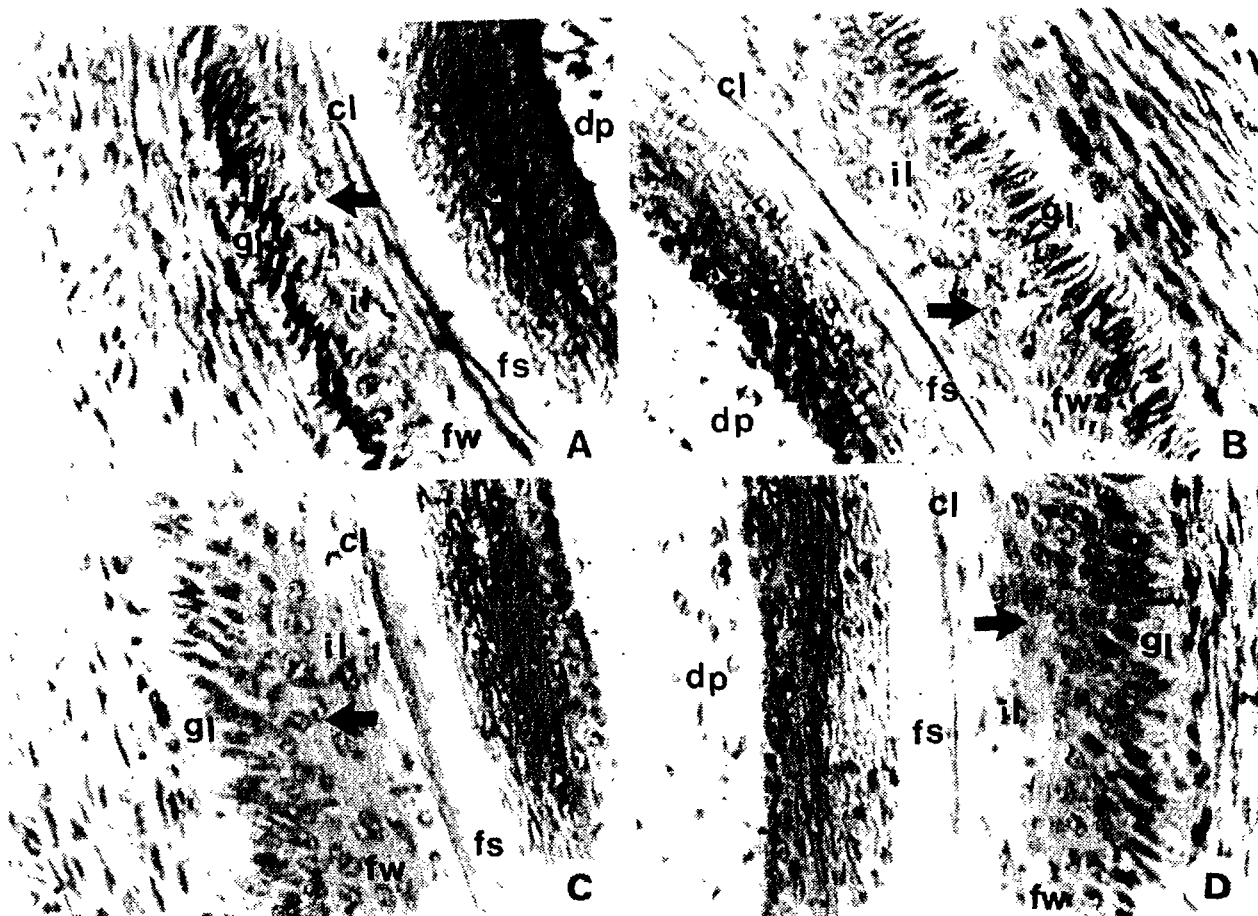


Figure 1

Contour feather follicles of Magellanic Penguins of known ages.

- A) Six-month old individual, the arrow marks six cellular layers in the follicular wall.
- B) One-year old individual with seven cellular layers in the follicle.
- C) Two-year old individual. The follicular wall shows eight cellular layers.
- D) Three-year old individual. The arrow indicates eight cellular layers in the follicle.

cl: corneal layers., fs: feather sheath., fw: follicle wall., gl: germinative layer., il: intermediate layer., dp: dermal pulp. Hematoxylin and Eosine. X 800.

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NORTHERN GIANT PETREL *MACRONECTES HALLI* FEEDING ASHORE AT KIDD'S
BEACH, EASTERN CAPE, SOUTH AFRICA

Giant petrels *Macronectes* spp. disperse from their natal Subantarctic and Antarctic islands after fledging, returning four or five years later to breed (Warham 1962, Hunter 1984). It is mainly during this pre-breeding period that these birds are found in southern African waters (Maclean 1985). Fewer reports exist on the occurrence of giant petrels along the Indian coast of southern Africa (Cooper 1976, Shaughnessy & Sinclair 1979) than on the Atlantic coast (Sinclair & Nicholls 1978, Shaughnessy & Voisin 1981, Morant *et al.* 1983), and this is only the fourth record of the Northern Giant Petrel *M. halli* feeding on the mainland of southern Africa.

On 29 July 1985 at Kidd's Beach (32 30S, 26 48E) eastern Cape, South Africa, I observed a Northern Giant Petrel in a rock pool 20 m from the shore. It was feeding on the remains of a beached Sperm Whale *Physeter macrocephalus*. The Northern Giant Petrel pecked rapidly at small broken-up fleshy remains floating on the water. After two hours it was still feeding and had made no attempt to leave. Giant petrels of both species are known to scavenge from carcasses of marine mammals (Summers 1979), particularly fur seals (Cooper 1976, Shaughnessy & Voisin 1981), and seabirds (Johnstone 1977, Sinclair & Nicholls 1978, Hunter 1983). The less frequent sightings of giant petrels along the Indian Ocean coast of South Africa may be due to the paucity of fur seal colonies in that region.

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NOTES ON THE SEABIRD BREEDING LOCALITIES OF SOUTHERN LITTLE

NAMAQUALAND, WESTERN SOUTH AFRICA

Little has been published on seabird breeding localities immediately north of the Olifants River estuary in southern Little Namaqualand, northwestern Cape Province, South Africa. This note elucidates their geography and nomenclature and makes available recent counts of occupied nests.

The most northerly is Voëlklip (= bird rock) (31 36S, 18 07E) as it is known to the local inhabitants. It has been referred to as "Stack south of Cliff Point" in Cooper *et al.* (1982) and as "1 km south of Cliff Point" in Brooke *et al.* (1982) and Ryan & Cooper (1985). I consider that, in view of the number of nests which may be found there and in the absence of another Voëlklip in South Africa on which seabirds breed as opposed to roost, the name Voëlklip should be used. It is one of the few stacks along the South African coast, of Table Mountain sandstone with a stepped flat top c. 15 x 30 m and c. 100 m high. The shape is roughly triangular with the apex pointing westwards out to sea. After a low rainfall winter no plants were seen when I visited the area on 1 October 1985. The stack was studied from a series of points near the top of the mainland cliffs. The sea gap is hardly more than 10 m wide at low tide but the precipitous crumbling cliffs and the stack daubed with slippery guano do not facilitate access. Counts of nests from the mainland and the species involved are given in Table 1. Whitebreasted Cormorants *Phalacrocorax carbo* were breeding on the flat top as were a few Cape Cormorants *P. capensis* though most of the latter were breeding in niches and ledges on the sides of the stack. In view of its triangular shape I believe that counts from a series of vantage points on the mainland will find all but a very few nests.

Some 300 m south of Voëlklip is an unnamed rock c. 30 m from the mainland cliffs at low tide. I propose that it be referred to as Klein Voëlklip (= little bird rock). In niches on the east (landward) side three Cape Cormorant nests were observed on 1 October 1985. Nesting on this rock does not seem to have been previously reported (Ryan & Cooper 1985). This is the 55th reported breeding locality for the Cape Cormorant (Cooper & Brooke 1986). Both Klein Voëlklip and Voëlklip are within a diamond mining area to which access is strictly controlled.

The most southerly and best known seabird breeding locality in southern Little Namaqualand is Elephant Rock (31 39S, 18 09E) as it is called on marine maps and in the Sea Birds and Seals Protection Act, 1973, but Robeiland on terrestrial maps, being the name by which it is known to the local inhabitants and on road signs. In view of the presence of another Robeiland (29 43S, 17 00E) on which cormorants breed (Brooke *et al.* 1982, Cooper *et al.* 1982, Crawford *et al.* 1982) and because when seen from the west at sea it looks rather like an elephant facing north, not to mention its closeness to the estuary of the Olifants River, it would be better to retain the name Elephant Rock in biological work.

Elephant Rock supports a Cape Fur Seal *Arctocephalus pusillus* colony (Shaughnessy 1984). Both seals and guano (Shaughnessy

TABLE 1
COUNTS OF CORMORANT NESTS ON VOËLKLIP

Date	Cape Cormorant	Whitebreasted Cormorant	Source
21 Jan 1980	10	1	Brooke <i>et al.</i> 1982, Cooper <i>et al.</i> 1982
8 Mar 1980	124	0	" "
1 Oct 1985	117	2	RKB

TABLE 2
COUNTS OF CORMORANT NESTS ON ELEPHANT ROCK

Date	Cape Cormorant	Crowned Cormorant	Source
8 Apr 1979	67	7	Cooper <i>et al.</i> 1982, Crawford <i>et al.</i> 1982
21 Jan 1980	32	3	" "
10 May 1980	0	2	" "
30 Dec 1983	few	c. 40	RKB
22 Apr 1984	some	some	RKB
30 May 1984	some	0	RKB
28 Jan 1985	0	20-25	RKB
1 Oct 1985	c. 50	0	RKB

1984) were exploited in the past, a tower and cable being erected in 1948 to ferry men and materials to and from the mainland, irrespective of the usually rough seas (Rand 1972). It is also a cormorant breeding site but no other seabirds are known to breed there. Gill & Zeederberg (1928) attribute "Duikers (= cormorants), penguins, seals." to Elephant Rock but there is no other evidence for Jackass Penguins *Spheniscus demersus* ever having bred there (Shelton *et al.* 1984). An effect of large numbers of seals on an island is to obliterate any vegetation previously present in the areas they frequent (Brooke & Crowe 1982). Consequently, no plant life is visible from the mainland some 400 m away. Rand (1972) describes a sandbar awash at low tide linking Elephant Rock with the mainland. Green (1946: 115) who seems to be more reliable when dealing with navigation of small boats than with biology states that the sandbar is present only in winter and that the channel is always at least two fathoms (c. 4 m) deep in summer. Irrespective of the time of year I have not noticed a sandbar in the 1980s. Counts of nests from the mainland and the species involved are given in Table 2. Crawford *et al.* (1982) give a count dated 8 August 1979 from Elephant Rock but this should be 8 April 1979 as in Cooper *et al.* (1982) (Southern African Ornithological Society nest record cards, J. Cooper pers. comm.). The two pairs of Whitebreasted Cormorants which bred on the mainland tower for the cable to Elephant Rock (Brooke 1984) were not breeding there in 1985.

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CORMORANTS BREEDING ON A WRECKED SHIP NEAR CAPE AGULHAS, SOUTH AFRICA

On 14 September 1985, RKB observed cormorants breeding on a wrecked ship, the *Meisho Maru No. 38*; close inshore near Cape Agulhas, southern Cape, South Africa. JC had previously observed the wreck on 30 November 1983, when no cormorants were breeding, although roosting birds were present. On 14 and 15 October 1985 we visited the site of the wreck which we found to be within a few hundred metres of the shore, 3 km west of Cape Agulhas at 34 50S, 19 59E.

The *Meisho Maru No. 38* was a Japanese long liner (299 grt) with a full cargo of tuna and similar fish which ran aground in fog at night on 16 November 1982 (Anon.1983). On 14 October 1985 it was observed to yaw slowly during high spring tide, but was solidly aground the next day at low tide (Fig. 1).

Counts of breeding cormorants (occupied nest sites) were made from the shore using a 15-60 x 60 mm zoom telescope on 15 October 1985. Three species were breeding: the Cape Cormorant *Phalacrocorax capensis* (43 occupied nest sites), the Whitebreasted Cormorant *P. carbo* (five occupied nest sites) and the Crowned Cormorant *P. coronatus* (five occupied nest sites). Cape Cormorants were breeding on the roof of the bridge, the forecastle and forward hold; Whitebreasted Cormorants were breeding on the tripod mast and Crowned Cormorants on ledges of the glassless bridge windows (four nests) and in a porthole. The census of Cape Cormorant nest sites is likely to be an underestimate since not all of the forward hold was visible from the shore. This wrecked ship is the 56th known breeding locality of the Cape Cormorant (Brooke 1985), the 65th known breeding locality of the marine population of the Whitebreasted Cormorant in southern Africa (Brooke 1986) and the 41st known breeding locality of the Crowned Cormorant (Hockey 1983). All three species have previously been recorded breeding on wrecked ships and boats as well as on moored boats in southern Africa (Brooke *et al.* 1982, Cooper *et al.* 1982, Crawford *et al.* 1982, Brooke & Loutit 1984).

Breeding of the Crowned Cormorant on the *Meisho Maru No. 38* represents an easterly extension of the species' breeding range of 16 km (Crawford *et al.* 1982). We believe that it has been the absence of suitable breeding sites (such as offshore rocks and islands) in the vicinity which previously limited breeding, since the species regularly occurs at Cape Agulhas, its nonbreeding range extending some way farther to the east (Crawford *et al.* 1982).

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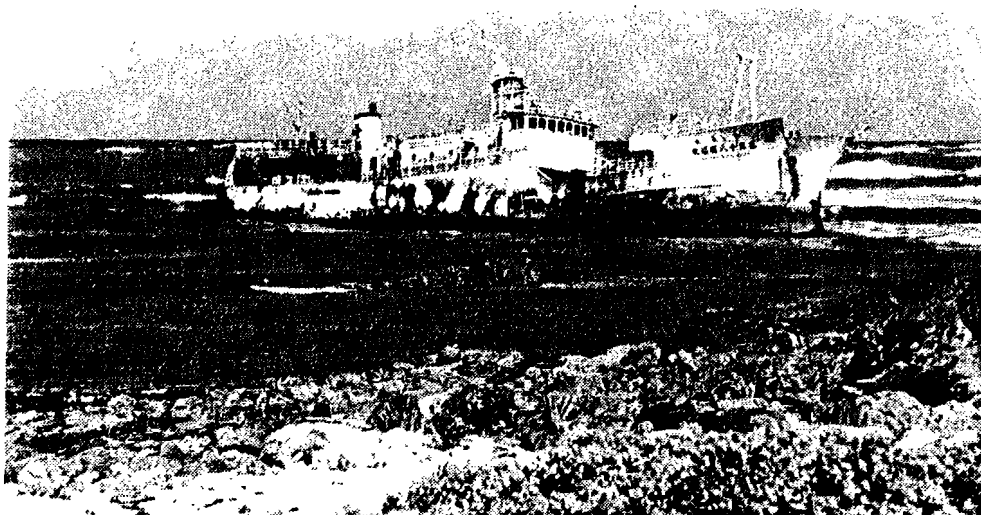


Figure 1

The *Meisho Maru* No. 38, at low tide on 15 October 1985

EIGHTH RECORD OF THE EMPEROR PENGUIN *APTENODYTES FORSTERI*

AT SOUTH GEORGIA

Seven published records exist for the Emperor Penguin *Aptenodytes forsteri* at South Georgia, all of single juveniles except for one individual of unknown age (summarized in Prince & Payne 1979 and Prince & Croxall 1983).

The eighth record is of an individual which was photographed (Fig. 1) in a King Penguin *A. patagonicus* colony at St Andrews Bay, South Georgia on 13 July 1985. The bird is in normal juvenile plumage (Roberts 1967) with the exception of a pronounced whitish ring around the eye (Fig. 1). It is possible (P. Jouventin and J.-L. Mougin *in litt.*) that the white ring is either the result of incomplete moult from downy plumage or, more likely, represents an individual variation in juvenile plumage. A juvenile Emperor Penguin photographed by Jehl *et al.* (1978) at South Georgia also shows a whitish ring around the eye. This plumage variation may therefore not be all that rare.

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Figure 1

Emperor Penguin ashore at South Georgia, 13 July 1985

MASS AND PRIMARY MOULT OF FOUR CASPIAN TERNS

STERNA CASPIA IN THE SOUTHWESTERN CAPE, SOUTH AFRICA

Maclean (1985) does not give mass data for the Caspian Tern *Sterna caspia* in southern Africa. A single individual from South West Africa/Namibia in October had a mass of 690 g (Urban *et al.* in press). Only 19 have been ringed in southern Africa between 1948 and 1978 (Morant 1979), 14 of these before 30 June 1970 (Elliott & Jarvis 1972), and are unlikely to have been weighed or examined for moult.

On 1 and 2 January 1986, I caught four Caspian Terns in mistnets at a temporary vleis between the Botrivier Lagoon and the Kleinmond marshes (34 21S, 19 05E), southwestern Cape, South Africa. All four were in non-breeding plumage, with streaked black-and-white caps and dull red bills with blackish tips (Maclean 1985). They were weighed on a Pesola spring balance to the nearest 5 g, and primary moult recorded by the standard technique (Ginn & Melville 1983) (Table 1).

The mean mass of 683 g (S.D. 23 g) was very close to the mass recorded in Namibia. A 95 % confidence interval for the mass, based on these five birds, is 629 g to 739 g. Cramp & Simmons (1984) give the individual masses of 17 Caspian Terns, ranging between 500 g and 780 g, from various localities in Asia. The mean is 663 g (S.D. 70 g), giving a 95 % confidence interval of 515 g to 810 g. The tentative conclusion, based on these small samples, is that the mean masses of Caspian Terns in southern Africa and Asia do not differ.

Three of the four birds were in primary moult. Those with moult scores of 3 and 10 had almost certainly started moult in December, whereas the tern with moult score 20 could have started moult in November. In the western Palaearctic, primary moult starts between late July and late September, three to four months after egg-laying (Cramp & Simmons 1984). Assuming the same period between egg-laying and start of moult in southern Africa, the birds which started moult in November or December would have started breeding between July and September. Analysis of egg-laying months in southern Africa suggests that the birds in moult at Botrivier Lagoon in January may not have belonged to the southwestern Cape breeding population, and could possibly have belonged to the Natal or Transvaal populations (Table 2). This hypothesis is also supported by the fact that these birds were in non-breeding plumage during the breeding season in the southwestern Cape (Table 2).

A Caspian Tern, killed by traffic 20 km north of Durban, Natal on 25 March 1975, showed no trace of moult (R.K. Brooke *in litt.*). This is consistent with it belonging to the Natal breeding population (Table 2, Berruti 1980).

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TABLE 1

DETAILS OF CASPIAN TERNS RINGED AT BOTRIVIER LAGOON

Ring No.	Date	Culmen (mm)	Mass (g)	Primary moult
5-71563	1 Jan 86		670	no moult
5-71564	2 Jan 86	70	665	2100000000
5-71565	2 Jan 86	72	680	5410000000
5-71566	2 Jan 86		715	5554100000

TABLE 2

MONTHS IN WHICH CASPIAN TERNS LAY EGGS IN REGIONS OF SOUTHERN AFRICA. EGG-LAYING MONTHS GIVEN BY URBAN *ET AL.* (IN PRESS) ARE UNDERLINED

Region	Egg-laying months	Reference
Mozambique	<u>NDJ</u>	Urban <i>et al.</i> (in press)
Natal	MAM <u>JJ</u> AS	Berruti (1980)
Transvaal	<u>MAMJJASO</u>	Daneel (1969), Milstein (1975)
Southwestern Cape	SON <u>DJ</u>	Uys & Macleod (1967), Hockey & Hockey (1980)
South West Africa/ Namibia	<u>DJFM</u>	Clinning (1978)

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CAPE CORMORANT *PHALACROCORAX CAPENSIS* AND JACKASS PENGUIN
SPHENISCUS DEMERSUS BREEDING COLONIES ON THE NAMIBIAN MAINLAND
COAST AROUND SYLVIA HILL

The breeding localities of the southern African endemic Cape Cormorant *Phalacrocorax capensis* were catalogued in Cooper *et al.* (1982). Additional breeding localities have been published in Cooper & Smith (1982), Brooke & Loutit (1984), Brooke (1986) and Cooper & Brooke (1986). Sylvia Hill (25 09S, 14 51E), overlooking the South West African/Namibian coast of Diamond Area No. 2 between Hollamsbird Island to the north and Mercury Island to the south, has been described as a Jackass Penguin *Spheniscus demersus* breeding site, briefly by Shelton *et al.* (1984) and at greater length by Finkeldey (1984) and Loutit & Boyer (1985).

Five or six Cape Cormorant colonies have been found on the coast within 25 km of Sylvia Hill by RL and DB. These are described below from north to south, the order used by Cooper *et al.* (1982). There are now 61 or 62 known breeding localities for the Cape Cormorant. Further exploration of the cliff-girt sections of coast south of Sylvia Hill will probably reveal more Cape Cormorant and Jackass Penguin (Loutit & Boyer 1985) breeding localities. The geographical coordinates given in this contribution have been taken from 1:50 000 maps whereas those given in Loutit & Boyer (1985) were estimated from a coarser-scaled map.

The most northerly Cape Cormorant colony is c. 2 km north of Sylvia Hill on a south-facing cliff in a small bay. On 28 February 1984 five occupied nests were observed on ledges under overhangs c. 25 m a.s.l.

There are two sea caves 1,5 km southwest of Sylvia Hill. On 28 February 1984 the smaller northern cave contained five occupied nests with young in various stages of development. The nests were on ledges 4-5 m above the sandy floor. On the same day the larger southern cave contained eight occupied nests in similar positions.

Some 4 km south of Sylvia Hill near the crest of a cliff over 60 abandoned nests, presumed to be those of the Cape Cormorant by nest architecture, size and spacing, were found on 28 February 1984. Access to these nests from the top of the hill was not difficult and they were presumably accessible to mammalian predators such as the Blackbacked Jackal *Canis mesomelas* (Loutit & Boyer 1985). This view is supported by the absence of dead birds usually found in cormorant colonies since the carcasses would have been scavenged by Blackbacked Jackals.

Among the cliffs at Easter Point (25 17S, 14 48E) is a cave in which 24 occupied nests were found on 1 March 1984. Among the Oyster Cliffs (25 20S, 14 49E) is a cave in which 11 occupied nests were found the same day. In both caves young of various ages were observed in nests and it is assumed that those adults

which sat tightly were brooding eggs.

Jackass Penguin breeding within a mainland cave at "Easter Cliffs" (is Easter Point or Oyster Cliffs meant?) is reported by Green (1962: 142) on the authority of David Wilson, a prospector who pegged a mining claim for guano there. This reference was overlooked by Shelton *et al.* (1984) in their review of Jackass Penguin breeding sites and by Loutit & Boyer (1985) who found two possible Jackass Penguin breeding sites at Easter Point. It appears from Green (1962 p. 142 as read with pp. 73-81) that the claim was pegged between 1908 and 1940, probably in the 1920s before Diamond Area No. 2 was proclaimed, since we do not think that the German Administration which existed up to 1916 would have permitted a British citizen to peg a guano claim on the mainland. Jackass Penguin breeding on this section of the Namib coast is not necessarily a recent development, as might be deduced from Finkeldey (1984) and Loutit & Boyer (1985). The breeding localities have been overlooked because of physical inaccessibility (Loutit & Boyer 1985) coupled with being in a prohibited entry diamond zone.

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