GREY HERON *ARDEA CINEREA* KLEPTOPARASITIZES CAPE CORMORANTS *PHALACROCORAX CAPENSIS*

I observed an adult Grey Heron *Ardea cinerea* successfully kleptoparasitizing Cape Cormorant *Phalacrocorax capensis* chicks at Bird Island, Lambert's Bay (32 05S, 18 18E), southwestern Cape, South Africa on 21 May 1975. The heron was first observed roosting overnight on a rock that supported breeding Cape Cormorants. The next morning it was seen walking among the cormorants eliciting a great amount of threat behaviour from them. On three occasions it walked quickly with partially opened wings towards large feathered Cape Cormorant chicks being fed away from their nests. Each "chase" resulted in cessation of feeding and the cormorants' rapid movement away from the heron. On the third occasion it succeeded in interrupting the chick being fed so that part of the meal being regurgitated by the adult was spilt onto the nest rock. The heron then picked up this material and swallowed it. Duffy (1982) in his study of kleptoparasitism of southern African seabirds does not record the Grey Heron as as "pirate" of Cape Cormorants. He lists only seabirds in this role and therefore the record given here is the first of a non-seabird successfully kleptoparasitizing a Cape Cormorant. In fact, this observation may be the first of any species of heron kleptoparasitizing a cormorant since Brockmann & Barnard (1979) in their review do not list cormorants as victims of any Ciconiiform species. The only victim of a Grey Heron listed by them is the Greater Blackbacked Gull *Larus marinus* (Marshall 1961). However, Mock & Mock (1980) describe a Goliath Heron *A. goliath* unsuccessfully attempting to kleptoparasitize a Whitebreasted Cormorant *P. carbo*.

This observation is in accordance with Duffy's (1980) hypothesis: that species with shallow foraging depths steal food from more deeply foraging species, thus obtaining prey not otherwise available to them.

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A COMPARISON OF TWO TRANSECT METHODS OF COUNTING BIRDS AT SEA

While many different methods of counting seabirds at sea exist (viz. Tasker *et al.* in press), empirical comparisons of the results of different methods have, with the exception of work by Powers (1981), been neglected. We report here on a comparison of two methods used at our institutions, discussing the advantages and drawbacks of both, based on field data from a single cruise.

In the 'bar count', all birds crossing an imaginary line extending 300 m abeam of a ship are counted (Griffiths 1981). In the second method, the 'zone count', all birds are recorded within a 90 degree sector with a radius of 300 m extending from straight ahead to abeam of midships (*cf* Hunt *et al.* 1981).

We compared the zone and bar methods on a continuous transect beginning at the mouth of Saldanha Bay (33 05'S, 17 56'E) and ending at Dassen Island (33 25'S, 18 05'E), southeastern Cape Province, South Africa, on 10 December 1982. The transect covered 37,5 km and 126 min. Winds were approximately 20 km h^{-1} from the NE with 2 m swell from the west. Ship's speed was approximately nine knots (17 km h^{-1}) and the observer's eye height was 4 m. Each bird or group of birds was counted as it entered the zone and as it crossed the bar. Counts were compared using a G-statistic (Sokal & Rohlf 1969). Ship-following birds were counted only once for each method, when they first entered the zone or crossed the bar.

Bar counts were always less than or equal to zone counts (Table 1). Counts of Cape Cormorants *Phalacrocorax capensis* and Sabine's Gulls *Larus sabini* were significantly higher ($p < .05$) using the zone method. The discrepancy between the two methods of counting was caused by the behaviour of flying birds. These had to cross the bar to enter the zone but did not necessarily cross the bar while in the zone. Two types of behaviour were involved. rapid passage at right angles to the ship's track (Cape Cormorant) or avoidance of the ship (Sabine's Gull). The greatest differences between the two methods occurred with the Sabine's Gull. Nearly all these gulls were first observed sitting on the water, but they flew off as the ship approached so that only a few ever passed directly abeam of the ship, within 300 m, to be included in the bar counts.

Both methods have drawbacks. Bar counts preclude the possibility of constructing detection functions (probability of sighting against distance) for each species (Burnham *et al.* 1980) since avian avoidance of, or attraction to the ship would severely bias such functions when using bar counts. Zone counts could be used to reduce the effect of behavioural responses by use of detection functions but, in practice, distance and direction to first sighting of a bird cannot be readily recorded if the frequency of sightings exceeds the time required to make these measurements. The simple use of continuous counts in zones for counting seabirds without collection of data on location of first sighting will produce overestimates since additional birds can enter a zone from the time it is first surveyed until the ship passes completely through it (Gould *et al.* 1982, Tasker *et al.* in press).

TABLE 1

COMPARISON OF TOTAL BIRD NUMBERS OBSERVED

USING THE 90 DEGREE BAR AND ZONE COUNTING METHODS

Species	Bar Count	Zone Count	G-statistic	p
Jackass Penguin *Spheniscus demersus*	39	39	1.65	.20
Sooty Shearwater *Puffinus griseus*	25	29	.30	.50
Cape Gannet *Sula capensis*	147	175	2.44	.12
Cape Cormorant *Phalacrocorax capensis*	560	729	22.22	.001
Cormorants *Phalacrocorax* spp.	181	227	5.20	.02
Hartlaub's Gull *Larus hartlaubii*	1	1	0	-
Kelp Gull *L. dominicanus*	24	19	.58	.45
Sabine's Gull *L. sabini*	401	21	418.06	.001
Gulls *Larus* spp.	1	1	0	-
Common Tern *Sterna hirundo*	7	3	1.65	.20
Terns *Sterna* spp.	2	1	.34	.33

Both the bar and zone methods are sensitive to high bird speeds, relative to ship speeds. For example, if a fixed number of birds move over the surface of the ocean, the rate of contact with either a bar or a zone will increase with increasing bird speed. The problem is further complicated by the fact that the detection rate will decrease with increasing ship speeds. Using computer simulations, Wiens *et al.* (1978) found that both effects were important, and that much of the effect could be corrected by knowing bird speeds, relative to ship speed. However, relative speeds are not readily measured under field conditions, so a practical solution remains elusive.

Our comparisons of the two methods suggest that avian reactions to ships can be a major source of bias in estimating bird numbers in the Benguela Current as they are in the southern ocean (Griffiths 1981, 1982). Burnham *et al.* (1980) concluded that the effects of ship attraction or avoidance may seriously bias density estimates derived from transects. This would apply most strongly to bar transects, producing underestimates. On the other hand, zone counts as described here appear equally biased, producing overestimates of flying birds. Our results, and those of Powers (1981), suggest caution when comparing "density" estimates based on different counting methods.

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NEW DATA ON RARELY RECORDED SEABIRDS IN SOUTHERN AFRICA

Lightmantled Sooty Albatross *Phoebetria palpebrata*

Four specimens and two sightings are the only records of the Lightmantled Sooty Albatross in South African waters (Cooper 1974, *Ostrich*, 45: 133; Anon 1979, A guide to the birds of the S.W. Cape. Cape Bird Club; Avery 1984, *Cormorant* 12: 29-43). A fifth specimen, clearly identified by its light mantle and bluish mandibular sulcus, was found alive on the beach at Mabibi (27 20S, 32 45E), northern Natal on 23 May 1984 by Mr. and Mrs. A. Adler. The left leg had been severed cleanly at the intertarsal joint, possibly by a shark. The bird died the following day, and was subsequently presented to the Port Elizabeth Museum where it will be prepared for display. The culmen and wing lengths were 103 mm and 560 mm respectively, and the bird's mass was 2 150 g. This specimen extends the known range of the species in South African waters and is the first record for Natal.

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KELP GULLS *LARUS DOMINICANUS* EATING GOOSE BARNACLES *LEPAS ANATIFERA*

Brooke & Cooper (1979) reviewed the diet of the Kelp Gull *Larus dominicanus* in southern Africa and concluded that, like other members of the subgenus *Larus*, it is primarily an eater of bivalve shellfish. Subsequent reports (Shelton *et al.* 1978, Berruti *et al.* 1979, Hocky 1980, Shaughnessy 1980, Boshoff & Palmer 1982, Cooper & Cooper 1982, Duffy 1982, Haarhoff 1982, Furness 1983) and casual field observations have not led to a modification of the views then expressed, *cf.* the mammalian carrion-eating propensity of Kelp Gulls in southern Argentina (Morant & Winter 1983). Unlike Kelp Gulls at Marion Island which take limpets freely (Blankley 1981), Kelp Gulls in southern Africa hardly ever attempt to secure and eat limpets *Patella* spp. (G.M. Branch pers. comm.). It is of interest to record that on 25 June 1983 on the beach north of Yzerfontein (33 20S, 18 10E), southwestern Cape, South Africa, six to ten groups of four to twelve Kelp Gulls were observed actively foraging among recently washed up kelp *Ecklonia* sp. on the lower half of the beach.

Investigation by GCW showed that some of the newly washed up kelp plants and other stranded flotsam, such as timbers and planks, had attached clusters of live Goose Barnacles *Lepas anatifera* (size not measured) and that these were being sought and eaten by the gulls. Goose Barnacles are crustaceans with a conspicuous fleshy stalk and five shell-like plates. They appear superficially mollusc-like as adults (Branch & Branch 1981) so that it is not surprising that Kelp Gulls sought them out as food. They are often encountered in dense clusters on beached timbers, planks, glass floats, bottles (Branch & Branch 1981) and the shells of pelagic purple snails *Janthina* spp. (GCW pers. obs.). The Goose Barnacle is a common gregarious species of the open ocean with a cosmopolitan distribution. Growth is very rapid and individuals may reach a length of 150 mm. It is normally seen washed on beaches after storms or periods of strong onshore winds. The weather in the preceding week or so was dominated by strong winds and gales from the northwest. These had presumably brought ashore kelp and timbers that had been floating out at sea long enough (at least two weeks : G.M. Branch pers. comm.) for the settling and growth of Goose Barnacle colonies which, when beached, became available to the gulls.

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MORE KELP GULLS *LARUS DOMINICANUS* SEEN INLAND IN SOUTH AFRICA

Ryan & Furness (1982) reported 27 km as the farthest distance Kelp Gulls *Larus dominicanus* had been seen away from the sea in South Africa. Since then, several more inland sightings have been made in the southwestern and eastern Cape. At Droevlei, the locality mentioned by Ryan & Furness (1982), two adult birds and a subadult were seen by Neatherway & Hockey (1983) on 26 July 1983, and P. G. Ryan found an adult at Radyn Dam (33 19S, 18 45E), 15 km north of Malmesbury and 44 km inland on 17 October 1983. Two adult birds were present on a farm dam near Alpha (34 18S, 19 50E) between Caledon and Napier, 53 km away from the sea, on 17 February 1984 (W. & D. Suter). Data from the Cape Bird Club atlas project for the southwestern Cape (L. G. Underhill *in litt.*) include four observations in the Philadelphia area (May, July, August and September) and one near Paarl (May), accounting for nearest distances from the sea of up to at least 40 km. In the eastern Cape, a single adult bird was observed flying inland along the Sundays River (33 35S, 25 41E), south of Addo and 21 km from the sea, on 20 October 1983 (W. & D. Suter).

These sightings suggest an increasing tendency for Kelp Gulls to wander inland, which may be related to a population growth in recent years, at least in certain areas (Crawford *et al.* 1982). In Europe both Herring Gulls *L. argentatus* and Whiteheaded Gulls *L. cachinnans* have been recorded inland in increasing numbers and have colonized several new areas as a result of growing population sizes. This is partly due to an improved food supply having become available through human activity (Glutz von Blotzheim & Bauer 1982). In contrast to the European situation, there are few major rivers and lakes in South Africa to help Kelp Gulls penetrate inland areas. Occurrence away from the sea might therefore remain restricted to coastal belts. However, in New Zealand (Fordham 1963) and parts of Patagonia, Kelp Gulls wander far inland, and the Patagonian situation has recently been discussed by Morant & Winter (1983) with respect to South Africa (see also Brooke & Cooper 1979).

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MARINE RECORDS OF THE REED CORMORANT *PHALACROCORAX AFRICANUS* IN ALGOA BAY, EASTERN CAPE, SOUTH AFRICA

In South Africa the Reed Cormorant *Phalacrocorax africanus* is normally found on inland fresh waters (McLachlan & Liversidge 1978). Crawford *et al.* (1982) point out that coastal records are sometimes made and that it cannot be assumed that small cormorants on the southern African coast are always Crowned Cormorants *P. coronatus*. A total of 46 monthly beach patrols has been made along a 4,8 km section of beach at Cape Recife (34 02S, 25 42E), the western end of Algoa Bay, eastern Cape, South Africa, since December 1977. On 12 occasions Reed Cormorants, ranging from one to five birds, have been seen flying low over the sea or foraging offshore. Reed Cormorants are commonly found on the ponds of the Cape Recife Sewage Works which is probably the source of the birds seen at sea. Hall & Every (1979) and Hosten (1979) have drawn attention to the importance of the sewage works ponds within a few metres of the beach for the occurrence at sea or on the beach of normally fresh water frequenting species.

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FEMALE WANDERING ALBATROSS *DIOMEDEA EXULANS* RAISING A CHICK ON ITS OWN AT MARION ISLAND

Procellariiform seabirds have a 1-egg clutch and a slow chick growth rate (Lack 1968, Ricklefs 1979). Lack (1968) has suggested that these features are an adaptation to reduce chick energy requirements in birds which have an unreliable and intermittent food supply or must travel long distances to obtain food. This hypothesis implies that a pair of adults may be unable to supply sufficient food for more than one chick, or that a single adult would be unable to raise a single chick (Lack 1966). Both these situations have previously been experimentally verified by Harris (1966) for Manx Shearwaters *Puffinus puffinus* and by Rice & Kenyon (1962) for Laysan Albatrosses *Diomedea immutabilis* by presenting breeding pairs with an additional chick, or by culling one of the parents soon after chick hatching.

While carrying out research on the Wandering Albatross *D. exulans* at Marion Island (46 52S, 37 51E), an adult male of a breeding pair was accidentally killed on 25 April 1982. The pair at this stage had a chick aged 6-8 weeks. On our departure from the island at the end of May the chick was still present. Observation of the chick was then continued by S.R. Fugler and I.P. Newton. The chick fledged and was last seen on 6 January 1983 after which it may have departed for sea. This represents an estimated period from hatching to departure of between 298 and 312 days, longer than the range of 261 to 285 days for five nests, calculated from Van Zinderen Bakker (1971), and also longer than the mean of 278 days, (range 263 - 303 days, n = 35) for Wandering Albatross chicks at South Georgia (Tickell 1968). However, fledglings, in apparently healthy condition, have been seen as late as 20 March 1984 (two individuals) at Albatross Valley, Prince Edward Island and 18 April 1984 (one individual) at Goney Plain, Marion Island (pers. obs.). These records undoubtedly represent even longer chick growth periods.

No data are available on chick feeding rates at Marion Island, but Wandering Albatross chicks at South Georgia are fed slightly more frequently by the male than by the female during the latter half of the growth period (Tickell 1968). Tickell (1968) noted that two chicks fed by lone males at South Georgia did not receive significantly less food than did chicks fed by both parents, but that a chick fed by a lone female did receive less. These observations were made on chicks which lost one of their parents within 60 to 90 days of their expected departure. The chick at Marion Island was raised by a lone female for at least 256 days, including the initial phase of rapid growth, although maximum energy requirements will occur at or just before maximum chick mass (attained at approximately 200 days at South Georgia (Tickell 1968)).

It appears that, in Wandering Albatrosses at least, a single female is capable of delivering food at a rate that allows eventual fledging but at a reduced growth rate compared to chicks fed by both parents. Procellariiform chicks lay down extensive fat deposits during growth which allow them to survive intermittent fasts (Lack 1968). Tickell (1968) reported two Wandering Albatross chicks that died after 58 and 81 days of

fasting and another that departed after not receiving food for 51 days. Chicks fed by only one parent may be unable to lay down substantial fat reserves and it is likely that the chick would be unable to survive if subjected to any prolonged fasts during growth. Moreover, if the chick fledges successfully and departs to sea its chances of survival may also be considerably reduced.

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BAITING BEHAVIOUR IN A CAPTIVE LESSER BLACKBACKED GULL

LARUS FUSCUS

Baiting behaviour is when a bird uses a food item to attract and catch a live form of food and has been described in the Black Kite *Milvus migrans*, (Roberts 1982); Greenbacked Heron *Butorides virescens*, Squacco Heron *Ardeola ralloides*, Sun Bittern *Eurypya helias* and Pied Kingfisher *Ceryle lugubris* (Boswall 1977, 1978). This note reports baiting behaviour in a captive Lesser Blackbacked Gull *Larus fuscus*.

An injured Lesser Blackbacked Gull was brought to the Mitchell Park Aviaries, Durban, Natal, South Africa in 1972 (Sinclair & Robson 1974). It was placed in a wired open-air enclosure together with Kelp Gulls *L. dominicanus* and Greyheaded Gulls *L. cirrocephalus*. A small concrete, 1 m deep pond within the enclosure was stocked with large numbers of small fish, mainly *Tilapia* sp., which were fed daily by park keepers. Visitors to the aviaries fed the captive gulls on bread chunks which supplemented their daily diet of fish and meat scraps supplied by the park keepers. The Lesser Blackbacked Gull was never seen to feed on bread thrown into the enclosure, but picked up bread chunks and dropped them into the pond. The small fish in the pond responded by surfacing and feeding in a frenzy on the floating bread. The Lesser Blackbacked Gull was observed on numerous occasions to drop onto the feeding frenzy and to seize fish. Captured fish were brought ashore and killed by repeated pecking on the head before being swallowed by the gull. The Lesser Blackbacked Gull was often robbed of its prey by the larger Kelp Gulls which stood close by and watched but were never seen to participate in the baiting behaviour.

So successful was the Lesser Blackbacked Gull in catching fish using this baiting behaviour that the park keepers, seeing their fish stocks being depleted, moved the gull to another enclosure with no pond or fish.

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KELP GULL *LARUS DOMINICANUS* CATCHES FISH BY PLUNGING

At *c.* 14h00 on 11 September 1983, we observed a Kelp Gull *Larus dominicanus* flying 2 m from the river bank of the Touws River (34 02S, 22 50E) southern Cape, South Africa, at a height of approximately 5 m. The bird wheeled, then plunged into *c.* 1 m-deep water, submerging completely with wings extended behind it, in a manner similar to that used by plunging Cape Gannets *Sula capensis*. The bird emerged from the water with a 2x mandible-length fish (*c.* 100 mm) and flew to the riverbank where, after some difficulty, it swallowed the fish headfirst.

Plunging facilitates access to prey too deep to be reached by dipping or surface-seizing, the more normal aquatic foraging methods of Kelp Gulls in southern Africa and South America (Duffy 1980, *Ibis* 122: 521-525; Duffy 1982, *Cormorant* 10: 71-80). Although we have observed plunging by Kelp Gulls taking offal in Saldanha Bay (33 03S, 17 58E), we believe this to be the first record of Kelp Gulls plunging to complete submergence to catch live prey. Complete submergence during plunging appears to have been previously recorded only for Blackheaded Gulls *L. ridibundus* and Lesser Blackbacked Gulls *L. fuscus* among gulls (Davies & Bryant 1983, *British Birds* 76: 138-139).

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EXTENSION OF THE RANGE OF THE BANK CORMORANT *PHALACROCORAX NEGLECTUS*

Cooper (1981) gives the easternmost range of the Bank Cormorant *Phalacrocorax neglectus* as Die Dam (34 46S, 19 41E), not accepting all other published records of the species occurring farther to the east.

On 1 December 1983 I observed, at close range, a single Bank Cormorant, roosting on an intertidal rock in the company of Cape and Crowned Cormorants *P. capensis* and *P. coronatus* at Die Walle (34 47S, 19 55E). The bird was recognized as a juvenile by its green iris (unpubl. data). This record represents a range extension of 22 km eastwards from Die Dam.

Bligh & Bligh (1983) reported an adult Bank Cormorant farther to the east at the Keurbooms River estuary (34 02S, 23 24E) on 9 March 1983. The bird was seen "flying past but was quite close" (G. Bligh *in litt.*). It was identified by being black with a very white rump patch (Bligh & Bligh 1983, G. Bligh *in litt.*). In the absence of a photograph or a more detailed description this sighting is considered to be a possible record only, representing as it does a further range extension of *c.* 350 km in a species with largely sedentary adults and which has not previously been recorded in estuaries (Cooper 1981).

An older record, not considered by Cooper (1981), is not acceptable. Bremner (1977) reported "two large black birds", recognized to be cormorants by their flight, at a large dam on the farm Swaelkrans (31 48S, 23 59E) in the Murraysburg District on 20 September 1977. The birds were first seen at a range of "some 365 metres" and did not have "the white chests which would have indicated our common, inland large cormorant" (Whitebreasted Cormorant *P. carbo*). Bremner (1977) reported that as the two birds flew away from him, he "saw that each bird had a very white rump" and identified them as Bank Cormorants after recourse to "Roberts bird book" (McLachlan & Liversidge 1970).

The nearest sea to Murraysburg is approximately 230 km away. Since the Bank Cormorant is a wholly marine species (Cooper 1981), it seems far more likely that the two birds seen, at great distance, were adult Whitebreasted Cormorants in breeding condition, showing their conspicuous white thigh patches (McLachlan & Liversidge 1970, pers. obs.).

Previously, an adult Bank Cormorant has been reported only 3 km outside the breeding range of the species, at Die Dam (Cooper 1981, unpubl. data). This distance is within the maximum foraging range of breeding adults (unpubl. data). On the northwestern extremity of the range of the Bank Cormorant, a juvenile has been collected at Walvis Bay (22 57S, 14 30E), 190

km from the nearest breeding locality (Cooper 1981).

Range extensions of the Bank Cormorant are most likely to be caused by juveniles, since dispersal after fledging of up to at least 459 km occurs, and adults are largely sedentary (Cooper 1981). Records of presumed Bank Cormorants, with white rumps and therefore adults, far outside their breeding range, and especially on estuaries or inland, need to be treated with caution. Ideally, reports of sightings should be accompanied with a full description and photographs.

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NEW BREEDING LOCALITY DATA FOR SOUTHERN AFRICAN SEABIRDS

Kelp Gull *Larus dominicanus*

Fiftyfive breeding localities are known for the Kelp Gull in southern Africa (Crawford *et al.* 1982, *Ostrich* 53: 164-179; Bridgeford 1982, *Cormorant* 10: 126). A further seven breeding localities may now be added to this total (Table 1).

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Whitebreasted Cormorant *Phalacrocorax carbo*

Sixtyone breeding localities are known for the Whitebreasted Cormorant on the southern African coast (Brooke *et al.* 1982, *Gerfaut* 72: 188-220; Hockey 1983, *Cormorant* 11: 64 and references therein). Three more localities may now be added.

No. 62. The landward tower for the cable to Robeiland or Elephant Rock (31 39S, 18 08E). Two nests were observed on 22 April 1984 in the superstructure of the tower built on a granite rock joined to the beach at low tide. One nest had a brooding adult on it and it probably contained eggs. The other nest was still under construction. The tower and the cable it supports were erected to facilitate Cape Fur Seal *Arctocephalus pusillus* hunting on the island. The island has long been a breeding site of the Cape Cormorant *P. capensis* (Cooper *et al.* 1982, *Fish. Bull. S. Afr.* 16: 121-143) and the Crowned Cormorant *P. coronatus* (Crawford *et al.* 1982, *Gerfaut* 72: 3-30).

No. 63. Elands River stack, (34 00S, 23 46E), Tsitsikama Coastal National Park where one occupied nest was present in 1981 (Crawford 1983, *Koedoe* 26: 145-152).

No. 64. Redhouse Salt Works, Swartkops River estuary (33 50S, 25 35E) where 10 occupied nests with eggs and young were present on an islet in a salt pan on 10 July 1982 (L. Hosten & A. Peter, Southern African Ornithological Society nest record cards). Approximately 35 nests were present at this locality in March 1984 (A.P. Martin pers. comm. to J. Cooper).

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TABLE 1

NEW BREEDING LOCALITIES OF KELP GULLS *LARUS DOMINICANUS* IN SOUTHERN AFRICA

Locality No.	Name	Coordinates	No. breeding pairs	Date	Source
56	Abdolsbaai	32 49S,17 52E	1	18 Dec 1983	P.A.R. Hockey pers. comm.
57	Hoedjies Point *	33 02S,17 58E	*c.*6	1979 & 1980	P.A.R. Hockey pers. comm.
58	Island, southern Langebaan Lagoon	33 11S,18 06E	20	6 Nov 1983	JC pers. obs.
59	De Mond Forestry Reserve (west of Heuningnes River)	34 44S,20 05E	1	1 Dec 1983	JC pers. obs.
60	Klip River stack	33 59S,23 37E	2	1981	Crawford (1983, *Koedoe* 26: 145-152)
61	Skilderkrans	34 01S,23 50E	3	1981	Crawford (1983, *Koedoe* 26: 145-152)
62	West of Cannon Rocks	33 45S,26 32E	1	22 Nov 1981	Broster (1982, *Diaz Diary* 103: 11-13)

* locality now being converted into a tug harbour and birds no longer breed

CAPE FUR SEAL *ARCTOCEPHALUS PUSILLUS* KILLS JACKASS PENGUIN *SPHENISCUS DEMERSUS* ON LAND

On 29 December 1983 I observed an adult male Cape Fur Seal *Arctocephalus pusillus* (Otariidae) attacking an adult Jackass Penguin *Spheniscus demersus* on Halifax Island (26 37S, 15 04E), S.W.A./Namibia. I made observations from a crayfish boat approximately 30 m offshore. The seal herded a flock of about 30 penguins by approaching them from the sea and trapped them against rocks at the head of the beach about 20 m from the water's edge. With a final 'sprint' the seal caught a penguin and with vigorous head shaking proceeded to beat it against the ground. After a few minutes of being beaten the blood-splattered penguin got free and ran to the sea, but was outpaced by the seal which caught it again and knocked it against rocks in the surf. After a while the penguin ceased struggling. At this stage the boat pulled away from the shore, and the incident could not be observed further. It is therefore uncertain whether the penguin was eaten.

Apparently this is the first record of a Cape Fur Seal attacking penguins on land, all previously recorded attacks on Jackass Penguins having been observed at sea (Cooper 1974, Shaughnessy 1978). However, the efficiency with which the seal executed the attack suggests that it had used the technique previously. Halifax Island does not support a seal colony and therefore it is likely the seal came ashore specifically to catch a penguin.

Boswall (1972) records the South American Sea Lion *Otaria byronia* (Otariidae) catching a Rockhopper Penguin *Eudyptes chrysocome* on land in the Falkland Islands. Interestingly, the sea lion returned to the sea with the penguin.

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