Short Communications

POST-BREEDING DISPERSAL OF NORTHERN GIANT PETRELS MACRONECTES HALLI FROM MARION TO BOUVET ISLANDS

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Bouvet Island or Bouvetøya (54°25'S, 3°21'E) is the most isolated island in the world. Nyrøysa is a rocky platform on the west coast of Bouvetøya, formed by a landslide sometime between 1955 and 1958 (Prestvik & Winsnes 1981). Approximately five Northern Giant Petrels were observed at Nyrøysa during the 2000/01 austral summer. Two of these were colour-banded, seen feeding on dead Antarctic Fur Seal Arctocephalus gazella pups. The first, a male (SAFRING No. 9-73306 and orange alphanumeric plastic band 09A), seen on 16 February, was banded as a chick on Marion Island on 29 January 1991. It bred there in 2000/01 and was last seen incubating on 29 August 2000. This breeding attempt had failed by 12 September 2000, and the bird was not recorded at Marion again that season (D.C. Nel pers. comm.). This bird had been previously recorded at Bouvet Island on 2 February 1999 (Isaksen et al. 2000). It had bred at Marion Island in 1998/99 and was last seen at its the breeding site that season with a large chick on 12 January 1999 (Isaksen et al. 2000).

The second banded Northern Giant Petrel was recorded at Nyrøysa on 21 February 2001. This bird, a male (SAFRING No. 9-59291, previously 9-52523 and black alphanumeric plastic band 323) was banded as a breeding male on 3 November 1984 on Marion Island, and last reported breeding on 16 September 1991 (D.C. Nel pers. comm.). Its breeding site on the west coast of Marion Island means that the round-island breeding census (Cooper *et al.* 2001) can easily miss one of the breeding partners. It is therefore possible that this bird bred in 2000/01 (D.C. Nel pers. comm.).

These records suggest a regular post-breeding dispersal of male Northern Giant Petrels from Marion Island to Bouvet Island. Earlier recoveries and recaptures of Northern Giant Petrels banded at Marion Island indicate dispersal of fledglings to waters close to the New Zealand mainland and Tasmania, Australia, as well as an adult male movement to South Africa (Gartshore *et al.* 1988). Including a banded Southern Giant Petrel *M. giganteus* seen at Nyrøysa in February 1999 when the band number was not recorded (Isaksen *et al.* 2000), these are the only records from Bouvet of birds of any species banded elsewhere.

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AT-SEA RECORDS OF THREE RARELY REPORTED PETREL SPECIES IN THE SOUTH-WESTERN ATLANTIC OCEAN

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During the austral summer of 1999/2000 I observed birds at sea between Ushuaia, Argentina and the Antarctic Peninsula on four occasions, visiting several sub-Antarctic islands and also covering the Falkland Islands–Buenos Aires transect aboard the R.V. *Akademik Shuleykin* and R.V. *Akademik Ioffe*. I report here on observations of three rarely recorded species.

SPECIES OBSERVED

Spectacled Petrel Procellaria conspicillata

I observed this species three times. The first observation took place on 13 March 2000, 15h00 local time, at 46°14'S, 59°11'W. At 18h40 the same day, a different bird, based on markings, was seen at 45°28'S, 58°54'W. The third record is of two birds on 14 March 2000, at 41°44'S, 57°36'W. This last record was made close to the edge of Argentine territorial waters, and I presume the petrel extends its range into this zone and will prove to be a new addition to the Argentinean avifauna. Many other birds breeding in the Tristan da Cunha Group (for examples see Dabbene 1921, 1922, 1923), show the same pattern.

The pelagic distribution of the Spectacled Petrel outside its breeding grounds at Inaccessible Island is becoming better known and has been estimated to cover an area extending from the coasts of South America to South Africa between 25°S and 41°S (Enticott & O'Connell 1985, Olmos 1997, Ryan 1999, Camphuysen & Van Deer Meer 2000). The last authors also suggest there is a nonbreeding population over deep oceanic waters, far from their breeding grounds, that the records presented here seem to confirm. The petrel seems to be associated with warmer waters north of the Sub-tropical Convergence, although a few wander farther south (Rumboll & Jehl 1977). There are also some records made by Gould in the 19th century who stated that he saw spectacled birds in considerable numbers near the Falkland Islands, suggesting a wider range (Rowan *et al.* 1951). However, there have been no subsequent records from latitudes south of 41°S.

Georgian Diving Petrel Pelecanoides georgicus

One bird was found freshly dead aboard the vessel on 16 January 2000 when our position was halfway from the Antarctic Peninsula to the Cape Horn area, at 58°09'S, 61°08'W. The bird was identified using Harrison's (1985) sketches of the bills of the different diving petrels. Unfortunately, the specimen could not be preserved but was photographed. There is of course a difference between the

position at the time when the bird actually reached the ship and the coordinates that were taken the next morning, but as the ship's course was direct from the Antarctic Peninsula to Cape Horn, the diving petrel had wandered about 1500 km from its closest known breeding grounds at South Georgia. Other diving petrels are capable of a similar dispersion as confirmed by the record of Magellanic Diving Petrel *P. magellani* in the Drake Passage (Blendinger 1998) and the sighting of several unidentified diving petrels on 8 March 2000 between 59°42'S, 59°42'W and 59°32'S, 59°41'W (pers. obs.).

The Georgian Diving Petrel is almost impossible to identify at sea, given its close similarity to the Common Diving Petrel *P. urinatrix* (Harrison 1985, Enticott & Tipling 1998). The known range of the Georgian Diving Petrel is confined to the sub-Antarctic zone where it breeds at a number of islands. It is probably sedentary and spreads only into seas surrounding the breeding sites, although some members of colonies seem to wander farther away (Harrison 1985, Carboneras 1992, Enticott & Tipling 1998).

Leach's Storm Petrel Oceanodroma leucorhoa

On 14 March 2000 at 40°20'S, 57°07'W, a mixed flock of about 20 storm petrels was flushed from the water, providing good views for several minutes. Two Leach's Storm Petrels were identified among the majority of Wilson's Storm Petrels *Oceanites oceanicus* that formed the group. The Leach Storm Petrels looked larger and somewhat browner than the Wilson Storm Petrels, showing a characteristic white band on the upper wings, with longer and more slender wings bent at the carpal joint. The flight involved less flapping than Wilson's, gliding most of the time, with the wings held below the body. Looking down on the birds I could see the white rump divided by a greyish central line towards the forked tail.

This species occurs mainly in the North Pacific and Atlantic Oceans but it has also been rarely reported in the Southern Ocean (Biermann & Vous 1950, Veit *et al.* 1996, Arballo & Cravino 1999) as far south as the South Shetland Islands in Antarctica (Hahn & Quillfeldt 1998) as well as breeding off the coast of South Africa (Whittington *et al.* 1999). Although it is common and often observed over the Equatorial Counter-current (Harris & Hansen 1974, Bourne & Curtis 1984) it has not been previously reported by most authors working off South America (Cooke & Mills 1972, Jehl 1974, Rumboll & Jehl 1977, Jehl *et al.* 1979, Veit 1995, Orgeira 1997).

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EVIDENCE FOR ROCK SHAGS *PHALACROCORAX MAGELLANICUS* AND IMPERIAL CORMORANTS *P. ATRICEPS* LEAVING THEIR NESTS AT NIGHT

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Imperial Cormorants Phalacrocorax atriceps and Rock Shags P. magellanicus are foot-propelled pursuit divers usually described as visual feeders (Johnsgard 1993). Previous studies describing Imperial Cormorant and Rock Shag feeding behaviour show that birds forage from dawn to dusk (Croxall et al. 1991, Quintana 1999, 2001). Studies showing evidence for nocturnal foraging are not common. As part of a broader study of the foraging ecology of cormorants at Caleta Malaspina (45°11'S, 66°30'W), Bahía Bustamante, Chubut, Argentina we recorded the nest attendance of 24 adult Rock Shags and nine Imperial Cormorants equipped with VHF radio transmitters (Standard model, Advanced Telemetry Systems, Betel, MN) during 1998 and 1999 (see details in Quintana 1999). Both species of cormorants nest together on two rocky islands (0.3 and 6 ha) on flat areas, with no surrounding vegetation and close to the water (0-15 m). Nest/colony attendance was automatically registered every ten minutes by a data logger (DCCII model, ATS, Inc.) connected to a scanning receiver (R2000 model, ATS, Inc). The equipment was located 2-5 m from the nests of the studied birds. We were able to record any instrumented bird within a radius of 20 m, which represented the maximum distance between the equipment and the water's edge. Trip duration was calculated as the time difference between departure from and arrival at the nest.

We recorded only three (12.5%) Rock Shags (one in 1998 and two in 1999) and three (33%) Imperial Cormorants (one in 1998 and two in 1999) leaving the colony at night. These absences represented 6 to 25% of the number of trips recorded for each bird.

Rock Shags left their nests at night for periods ranging from 0.4 to 1.33 h (mean 0.7 ± 0.3 h, n = 7) whereas Imperial Cormorants' nocturnal absences lasted 0.85 to 8.6 h (mean = 4.7 ± 3.9 , n = 3) (Table 1). Ninety percent of the nocturnal absences were within the range of diurnal foraging trips recorded for Rock Shags (mean = 1.8 ± 1.2 h, range = 0.33-8.16 h, n = 198) and Imperial Cormorants (mean = 4.3 ± 2.4 h, range = 2.25-9.92 h, n = 58) in the area (A. Sapoznikow & F. Quintana unpubl. data).

Unfortunately, the islands were not easy to gain access to and we were unable to record independent evidence of birds actually foraging at night. However, seven of ten registered absences occurred during a half moon or a nearly full moon, suggesting the existence of suitable light conditions for night-time foraging. Recent measurements of foraging illumination conditions for European Shags P. aristotelis and Imperial Cormorants showed that minimum light requirements are equivalent to the light levels at ground level produced by a half moon and a full moon under clear skies, respectively (Wanless et al. 1999). Other species such as King Penguins Aptenodytes patagonicus are able to feed under much lower light conditions (Martin 1999). Our studies in the area suggest that these birds are feeding at depths ranging from 4 to 20 m (F. Quintana unpubl. data). Because light levels diminish with depth, the question is to what extent do visual cues play a role in detecting prey at greater depths. According to depth distribution of prey it seems reasonable to suggest that cormorants may locate prey by touch (Voslamber et al. 1995). This technique could be successful when prey are relatively immobile. In fact, Rock Shags and Imperial

TABLE 1

Species	Bird	Absence duration (h)	Number of recorded nocturnal absences	Total recorded trips	% of the moon illuminated	
Imperial Cormorant	1	8.67	1	7	35	
Imperial Cormorant	2	4.50	1	16	98	
Imperial Cormorant	3	0.83	1	4	100	
Rock Shag	4	0.5^{1}	2	20	5/5	
Rock Shag	5	0.75	1	14	63	
Rock Shag	6	0.83 ²	4	16	63/73/73/82	

Summary statistics of nocturnal absences from the colony by Rock Shags and Imperial Cormorants

^{1 & 2} Means calculated from the total nocturnal absences performed by the bird (sd: 0.0 and 0.4 for birds 4 and 6, respectively).

Cormorants at Caleta Malaspina have been previously shown to be bottom foragers feeding mainly upon small benthic fish and invertebrates (F. Quintana unpubl. data).

In our study there were only a few individuals showing nocturnal absences from the colony. The duration of these absences was similar to that of diurnal foraging trips and occurred mainly during illuminated nights. Our observations are the first indirect evidences for nocturnal foraging in these species of cormorants. However, future studies using light-level sensors and time-depth recorders should be undertaken to address further this question.

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FIRST ATLANTIC RECORDS OF THE RED-FOOTED BOOBY SULA SULA AND BROWN BOOBY S. LEUCOGASTER IN SOUTHERN AFRICA

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The Red-footed Booby *Sula sula* and the Brown Booby *S. leucogaster* occur in most tropical seas (Harrison 1983). Both species have been recorded previously in the southern African region (Maclean 1993, Hockey *et al.* 1992, 1996). Three additional records are reported here for the Red-footed Booby and one (the third) for the Brown Booby in southern Africa, all from the Atlantic coast.

RED-FOOTED BOOBY

A white-morph Red-footed Booby was observed at Ichaboe Island $(26^{\circ}17'S, 14^{\circ}56'E)$ by Y.C., *c*. 30 km north of Lüderitz, Namibia on 16 January 1990. It was found asleep on the sea-wall which surrounds the island. The most diagnostic feature was its bright red feet. In flight its plumage looked worn and it had a white tail. A second white-morph Red-footed Booby was photographed by Y.C. at Mercury Island $(25^{\circ}43'S, 14^{\circ}50'E)$, *c*. 60 km north of Lüderitz on 12 December 1994, perched on top of a rundown jetty. The nearest Atlantic Ocean breeding colony of Red-footed Boobies is at Ascension Island $(7^{\circ}55'S, 14^{\circ}50'E)$ (Stonehouse 1960, Ashmole *et al.* 1994).

A juvenile Red-footed Booby was found alive at Observatory (33°57'S, 18°28'E), Cape Town, South Africa on 28 February 1993 (Fig. 1), some three kilometres from the nearest sea. It is the first record of the species ashore in South Africa. The booby was



Fig. 1. Red-footed Booby *Sula sula*, Observatory, South Africa, 28 February 1992. (Photo: B. Greeff)

taken to the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) rescue station for treatment, but died three days later. The corpse was then sent for necropsy to the Regional Veterinary Laboratory, Stellenbosch. *Enterobacter coli* and other Enterobacteriae were identified but were considered unlikely to have caused death. The stomach was empty. The specimen (the first for South Africa) is in the South African Museum (SAM ZO58494). Morphometric details are culmen 79.9 mm, tarsus 237.5 mm, wing 372 mm, and tail 192 mm.

The three records published here are the first for the Atlantic coast of southern Africa although several records exist for the eastern coast, all from Mozambique (Hockey *et al.* 1992, 1996). It would be of interest in future reports for observers to record the colour morphs of the boobies seen.



Fig. 2. Brown Booby *Sula leucogaster*, Mercury Island, Namibia, 12 January 1993. (Photo: Y. Chesselet)

BROWN BOOBY

A juvenile Brown Booby was photographed by Y.C. at Mercury Island on 12 January 1993 (Fig. 2). It was seen at the edge of the largest Cape Gannet *Morus capensis* colony on the island. It remained in the area for two consecutive days, and was seen again on 16 January 1993. Its plumage differed from published accounts of juvenile Brown Boobies (Nelson 1978, Harrison 1983). There was a noticeable contrast in the shade of the brown showing as a line across the breast. The belly region was a paler brown than the upper region. The lighter brown on the belly presumably moults into the white plumage of adults. The nearest breeding colonies of this species to southern Africa are at St Helena Island (15°75'S, 5°43'W) to the west in the Atlantic Ocean (Rowlands *et al.* 1998, and the Seychelles (3°48'–6°35'S, 53°57'–57°10'E) to the east in the Indian Ocean (Harrison 1983).

A beached bird at Beira, Mozambique in 1954 and an observation off Durban, South Africa in 1985 are the only previous records for southern Africa (Harrison 1983, Maclean 1993). The record published here is therefore the first southern African record for the species from the Atlantic coast.

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VAGRANT BIRDS AT POSSESSION ISLAND, CROZET ISLANDS AND KERGUELEN ISLAND FROM DECEMBER 1995 TO DECEMBER 1997

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The Sub-Antarctic Crozet and Kerguelen Achipelagos are situated in the southern Indian Ocean, approximately 2500 km from Africa and 1500 km from Antarctica. Observations of vagrant birds were made on Possession Island (46°25'S, 51°45'E; 145 km²), Crozet Archipelago and on Grande Terre (48°35'S, 68°43'E; 7215 km²), Kerguelen Archipelago. We observed 10 vagrant species from December 1995 to December 1996 on Kerguelen and to December 1997 on Crozet.

SPECIES LIST

Cattle Egret Bubulcus ibis

One adult, harassed by a Subantarctic Skua *Catharacta antarctica*, landed in a King Penguin *Aptenodytes patagonicus* colony at Baie du Marin, Crozets, on 6 March 1997.

Curlew Sandpiper Calidris ferruginea

Eleven individuals were observed at Pointe Charlotte, Kerguelen, on 4 February 1996. They were still present on 17 April 1996. Twelve individuals in breeding plumage were seen from 25 to 27 April 1996 at the same locality. All these observations are thought to refer to the same group of birds (Fig. 1). Four individuals were present at the same locality on 18 November 1996.

Sanderling Calidris alba

Nine individuals were observed at Pointe Charlotte, Kerguelen, on 21 and 22 December 1995 (Fig. 2). They were still present on 4 February 1996. One individual was seen between Pointe Charlotte and Pointe Morne on 16 October 1996 and one at Pointe Charlotte on 18 November 1996.

Turnstone Arenaria interpres

One individual was seen at Pointe de l'Etang, Kerguelen, on 4 February 1996 and one, probably the same bird, on 17 April 1996 at Pointe Charlotte.

Greenshank Tringa nebularia

Seven Greenshanks were observed at Pointe Charlotte, Kerguelen, on 21 and 22 December 1995, and one was found dead south of Cap Rouge, Kerguelen, on 2 February 1996. Two birds were seen at Hallage des Naufragés, Kerguelen, on 3 November 1996, and three at Pointe Charlotte on 18 November 1996. Three birds were seen in flight on 28 September 1996 at Baie du Marin, Crozets. They tried to land on the beach among King Penguins but continued to fly inland. Five birds were present from 29 October to 2 November 1996, six from 20 to 30 November 1996, and five on 17 January 1997 at Baie Américaine. Three birds were observed on 14 November 1996 and seven on 21 January 1997 at La Hébé. The birds at Baie Américaine and La Hébé were probably of the same group.

Terek Sandpiper Xenus cinereus

One adult in breeding plumage was present from 9–17 December 1996 at Baie du Marin, Crozets (Fig. 3).

Yellow-legged Gull Larus cachinnans

A first-winter bird was seen on 5 November 1996 with Kelp Gulls *L. dominicanus* at Alfred Faure Station, Crozets. The plumage (Fig. 4) suggests a bird of the central Asian steppes forms (e.g. Baraba Gull *L. (cachinnans) barabensis*).

Arctic Tern Sterna paradisaea

One on 28 and two on 29 December 1995 in winter plumage rested on the coast with Kerguelen Terns *S. virgata* at Baie du Marin, Crozets.

Brown Noddy Anous stolidus

One was seen on 15 and 22 March 1996, one on 19 November 1996, and one from 20–26 December 1996 in flight with Kerguelen Terns. All were seen at Baie du Marin, Crozets.

Barn Swallow Hirundo rustica

Singletons were observed from 20–30 April 1996 and on 23 May 1997 at Baie du Marin, Crozets. The latter bird died the following day. Both birds roosted at night in sheds.

DISCUSSION

Eight of the ten vagrant species observed belong to the Palaearctic avifauna. Most birds were charadriid waders. They probably arrived at the sub-Antarctic islands following tropical storms. To our knowledge, the observation of a Yellow-legged Gull is the first at a sub-Antarctic island in the Indian Ocean. A Terek Sandpiper has been reported previously at the Prince Edward Islands



Fig. 1. Curlew Sandpipers *Calidris ferruginea* at Pointe Charlotte, Kerguelen Island, April 1996.



Fig. 3. Adult Terek Sandpiper *Xenus cinereus* in breeding plumage at Possession Island, Crozet Archipelago, December 1996.

(Berruti & Schramm 1981). The other species have been observed previously at the Crozet and Kerguelen Archipelagos (Prévost & Mougin 1970, Barrat 1974, Thomas 1983, Stahl et al. 1984, Ausilio & Zotier 1989). Cattle Egrets have been observed on Possession Island during April 1982 (Stahl et al. 1984) and in 2000 (S. Descamps pers. comm.). This species is also known to be common in the South Atlantic Ocean (Orgeira 1996) and at the Prince Edward Islands (Berruti & Schramm 1981). The most regular and numerous wader was the Greenshank, which has previously been observed in 1971, 1979, 1980, 1988 and also in 2001 (Barrat 1974, Thomas 1983, Stahl et al. 1984, Ausilio & Zotier 1989, pers. obs.). Arctic Terns have been previously observed in 1978 and 1979 (Stahl et al. 1984) and could be regular during the austral summer when migrating to Antarctica. However, this species in winter plumage is often hard to differentiate from the local tern species. Brown Noddies were observed each austral summer at Possession Island from 1995 to 2001 (S. Descamps pers. comm., pers. obs.). Each observation was of a single bird. A previous observation of a Barn Swallow occurred on 12 May 1971 on Possession Island (Barrat 1974). Our observations occurred at similar dates, which correspond to the spring migration of the species.



Fig. 2. Sanderlings *Calidris alba* at Pointe Charlotte, Kerguelen Island, December 1995.



Fig. 4. Immature Yellow-legged Gull *Larus cachinnans* at Alfred Faure Station, Possession Island, Crozet Archipelago, November 1996.

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ROCKHOPPER EUDYPTES CHRYSOCOME CHRYSOCOME × MACARONI E. CHRYSOLOPHUS PENGUIN HYBRIDS APPARENTLY BREEDING IN THE FALKLAND ISLANDS

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Two species of crested penguins, the nominate subspecies of the Rockhopper Penguin Eudyptes chrysocome chrysocome and the Macaroni Penguin E. chrysolophus, breed at the Falkland Islands. The Rockhopper Penguin population decreased by about 75% in the last century to its current level of 272 000 pairs (Clausen 2001) but it still far outnumbers the Macaroni Penguin population of about 50 pairs (Woods & Woods 1997). This frequently results in the presence of lone adult Macaroni Penguins in Rockhopper Penguin colonies and mixed pairs have been observed on Kidney Island in 1998/99 and 1999/2000 (pers. obs.). Presumed hybrid adult Rockhopper × Macaroni Penguins have also been reported in the Falkland Islands at Seal Bay (M. & S. Morrison pers. comm.) and on New Island (I. Strange pers. comm.) but never before described. This paper records the occurrence of at least six apparent hybrid adults that were located in the Falkland Islands in the austral summers of 1999/00 and 2000/01. The birds were typically paired with Rockhopper Penguins, and in two cases appeared to be raising chicks. It is likely that higher than usual levels of fieldwork, including a census of all Rockhopper Penguin colonies in the Falkland Islands in 2000/01 (Clausen 2001), resulted in a greater likelihood of detecting these hybrids.

During routine fieldwork around the Falkland Islands in 1999/ 2000, Falklands Conservation staff located three apparent hybrid penguins in Rockhopper Penguin colonies. Of two of these, seen at Seal Bay on 18 November 1999 (Clausen 2001), one was paired with a Rockhopper Penguin and had one egg and one chick, and the second was also paired with a Rockhopper Penguin but could not be accessed to identify its breeding status and was not relocated on subsequent visits. The third, seen on Saunders Island on 15 January 2000 (Clausen 2001), was paired with a Rockhopper Penguin and had a single chick. During the 2000/01 field season, Falklands Conservation staff located a further three apparent hybrid penguins in Rockhopper Penguin colonies. One bird at Port Stephens seen in November 2000 was paired with a Rockhopper Penguin but no eggs were present at the time of observation. Two birds seen on Beauchêne Island in December 2000 appeared to be non-breeders. All birds, except the second Seal Bay bird, were photographed (Figs 1-5). Subsequent enquiries revealed that apparent hybrid adults had been recorded previously at Seal Bay, where a bird was photographed in 1996 (Fig. 6, M. & S. Morrison pers. comm.) and on New Island (Woods & Woods 1997).

All birds were quite distinctive in their appearance and easy to distinguish from the Rockhopper Penguins with which they were

associating. Their general appearance can best be described as intermediate between nominate Rockhopper and Macaroni Penguins. However, the birds showed individual variations broadly categorized into two types, with the main difference being the presence or absence of yellow crown feathers. It is not known whether these differences are gender related. The Saunders bird and the Beauchêne birds (Figs 1, 2 & 4) all exhibited yellow crown feathering. The Seal Bay and Port Stephens birds (Figs 3, 5 & 6) lacked this feature. All birds were distinguished from nominate Rockhopper Penguins due to the presence of some or all of the following characters: larger size, a prominent pink fleshy gape, pink skin at the bill margins, a golden superciliary crest, shorter plumes behind the eye, limited yellow crown feathering, and a reduced occipital crest.

All the birds showed striking differences from both nominate Rockhopper and Macaroni Penguins with which all observers were familiar. The possibility that the birds were aberrant Rockhopper or Macaroni Penguins cannot be excluded, but seems unlikely. Some of the characters, such as the pink bill margins, are exhibited by the Australasian subspecies of the Rockhopper Penguin *E. c. filholi*. The possibility that that the birds from Seal Bay and Stephen's Peak are *filholi* Rockhopper Penguins cannot be completely ruled out. However, other features, such as the yellow crown feathering, are not a feature of this subspecies (Marchant & Higgins 1990, Williams, 1995). Whether considering size, the fleshy pink bill margin, the golden-yellow colour of the superciliary crest, or, perhaps most strikingly, the golden feathers in the crown, all these features can be considered indicative of Macaroni Penguin parentage.

These are the first records of assumed hybrid crested penguins forming pairs and apparently breeding successfully. Breeding appears to have been successful in some cases, at least to the early chick stage, although none of the hybrid birds was proven to be a parent. DNA testing of the chicks might reveal their parentage and shed light on the apparent fertility of the hybrid birds.

Hybrid pairs of crested penguins have been recorded previously from a number of localities and for several species (Table 1). Although relatively infrequent in occurrence, it seems that crested penguins will readily form mixed-species pairs, sometimes even in the presence of conspecifics. There are as yet no records of successful breeding by mixed-species pairs, although the presence of apparent hybrids is evidence that such pairings are, on occasion, successful (Hull & Wiltshire 1999).



Fig. 1. Rockhopper × Macaroni Penguin hybrid with chick. Fleshy gape and yellow crown feathers. Saunders Island, January 2000. (S. Mahood)



Fig. 2. Rockhopper × Macaroni Penguin hybrid. Fleshy gape and yellow crown feathers. Beauchêne Island, December 2000. (N. Huin)



Fig. 3. Rockhopper \times Macaroni Penguin hybrid. Fleshy gape. Seal Bay, December 1999. (R.W.White)



Fig. 4. Rockhopper \times Macaroni Penguin hybrid. Fleshy gape and yellow crown feathers. Beauchêne Island, December 2000. (N. Huin)



Fig. 5. Rockhopper \times Macaroni Penguin hybrid (right) with nominate Rockhopper Penguin. Fleshy gape. Port Stephens, November 2000. (R.W. White)



Fig. 6. Rockhopper \times Macaroni Penguin hybrid (left) with nominate Rockhopper Penguin. Fleshy gape. Seal Bay, October 1996. (M. & S. Morrison)

TABLE 1

Locality	Penguin species	Source	
Falkland Islands	Rockhopper \times Erect-crested <i>E. sclateri</i>	Napier (1968)	
Falkland Islands	Rockhopper × Macaroni	pers. obs. (1999 & 2000)	
Campbell Island	Erect-crested × Rockhopper	P. Moore in Hull & Wiltshire (1999)	
Campbell Island	Royal E. schlegeli × Rockhopper	Hull & Wiltshire (1999)	
South Georgia	Macaroni × Royal	K. Reid pers. comm.	
Heard and Marion Islands	Macaroni \times Rockhopper	Woehler & Gilbert (1990)	
Macquarie Island Royal × Rockhopper		Hull & Wiltshire (1999)	

Locality and species composition of crested penguin Eudyptes spp. hybrid pairs

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PSEUDO-EGGS OF BROWN *SULA LEUCOGASTER* AND BLUE-FOOTED *S. NEBOUXII* BOOBIES IN THE GULF OF CALIFORNIA, MEXICO

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Pseudo-eggs, foreign round objects, notably eggs of other species or pebbles, are common in some ground-nesting species, and have been reported especially in larids (Sugden 1947, Twomey 1948, Coulter 1980, Conover 1985). As many as 10% of Ring-billed Gull *Larus delawarensis* nests in Washington, USA included pseudo-eggs (Conover 1985). The nests of some larids that usually lay three eggs sometimes have a pebble and two eggs. Pebbles could be an important stimulus for incubation in gulls and terns (Coulter 1980). However, there is other evidence to suggest that pseudo-eggs are adopted because they are mistaken for real eggs (Conover 1985). Pseudo-eggs seem not to have been previously reported from sulids (Nelson 1978, and a literature search through *Zoological Review*). Here, I report on seven nests containing such objects in the Gulf of California, Mexico.

Between 8 January and 8 March 2001 I discovered six Brown Booby *Sula leucogaster* nests containing pseudo-eggs, on a flat area of Isla San Jorge (31°01'N, 113°15'W), in the northern Gulf of California, Mexico (Table 1). Three nests contained two rounded rocks each; the others contained a large rounded rock, an irregular piece of rock, and an irregular piece of guano, respectively. Except for the nest with the piece of guano, which also had one egg, these nests did not contain eggs. On Isla Isabel, in the southern Gulf of California, in addition to rocks in nests, B. Contreras (pers. comm.) witnessed a Brown Booby repeatedly pulling an escaping hermit crab into the nest. One 1 March 2001 I examined 111 Brown Booby nests on Isla San Jorge. Nest contents were as follows: one egg, 63 nests; two eggs, 28; three eggs, 1; one chick, 7; one chick and one egg, 7; one egg and one pseudo-egg, 1; one pseudo-egg, 1; two pseudo-eggs, 3. I measured 50 real eggs: length was 52.6-70.0 mm (mean $59.82\pm$ 3.1 mm, s.d.) and width 38.0-43.0 mm (mean 41.1 ± 1.36 mm). Seven of the nine pseudo-eggs were longer than the mean of real eggs and wider than the widest real egg measured; five were longer than the longest egg measured (Table 1). By 1 May all nests with pseudo-eggs had been abandoned.

The only nest with pseudo-eggs found on 8 January was tended by both a male and a female. The male was still tending the nest on 8 March (both adults were marked). Four of the nests with rocks were placed near the edge of the above mentioned flat, and the other one below it, where pebbles were abundant. The nest containing the piece of guano was situated away from the edge.

On Farallón de San Ignacio ($25^{\circ}26'N$, $109^{\circ}23'W$), in the southern Gulf of California, I examined 10 Brown Booby nests on 6 March 2001. They contained only real eggs. On this island I also examined 61 nests of Blue-footed Boobies *S. nebouxii*. One of those contained a single rock that was being 'incubated' by a male. The length of eleven Blue-footed Booby eggs in this colony was 56.3–69.0 mm (mean 62.69 ± 4.22 mm, n = 11), and the width was 40.6-44.4 (mean 42.51 ± 1.22 mm). The pseudo-egg was thus almost

TABLE 1

Nest	Species	Size of objects (mm)	Overall shape, material, eggs	8 January	1 March	6 March	8 March
1	Brown Booby	$77.0 \times 49.5 \times 23.2$	Rounded pebbles, no eggs	Active	Active		Active
	-	$78.8 \times 55.7 \times 29.0$					
2 Brown Booby		$76.0 \times 55.7 \times 55.5$	Rounded pebbles, no eggs		Active		Active
	-	$61.6 \times 45.5 \times 32.5$					
3	Brown Booby	$77.5 \times 48.5 \times 38.6$	Rounded pebbles, no eggs		Active		Active
	-	$61.3 \times 56.6 \times 52.2$					
4	Brown Booby	$49.4 \times 40.9 \times 21.3$	Very irregular rock, no eggs		Active		Deserted
5	Brown Booby	$49.7 \times 27.0 \times 25.9$	Irregular piece of guano, one egg		Active		Not checked
6	Brown Booby	$83.9 \times 51.1 \times 37.1$	Long pebble, no eggs	-			Active
7	Blue-footed Booby	$136.8 \times 48.1 \times 41.9$	Very irregular rock, no eggs			Active	

Pseudo-eggs of Brown Boobies *Sula leucogaster* on Isla San Jorge and Blue-footed Boobies *S. nebouxii* on Farallón de San Ignacio, Gulf of California, Mexico, 2001

twice the length of the longest egg measured, but only slightly wider than the widest egg (Table 1).

In no case was there any evidence or suspicion that the rocks had been put in the nest by anyone but the parent boobies. Few visitors landed on Isla San Jorge during the 2000/01 breeding season: local tourists to observe California Sea Lions *Zalophus californicus* and the breeding seabirds, and sport fishermen for brief sanitary stops. Farallón de San Ignacio is visited occasionally by fishermen, but they rarely reach the area where the Blue-footed Boobies nest. The only known visitors to the colony during the 2000/01 booby breeding season were a group of biologists, who did not place the rock in the Blue-footed Booby nest (M.A. González-Bernal pers. comm.).

Unlike pseudo-eggs in Ring-billed and California *L. californicus* Gulls that are similar in size and shape to real eggs (Conover 1985), most of those documented here were larger than eggs. Unlike gulls, boobies adopted not only rounded rocks, but also irregular objects. Rocks of the type used as pseudo-eggs were within reach of birds sitting on the nest (less than 15–20 cm) in the areas where pseudo-eggs were found on both islands. On Isla San Jorge, areas away from the plateau edge had fewer loose rocks. The nest containing the piece of guano had no rocks nearby, but pieces of guano were within reach of the sitting bird.

Pseudo-egg adoption in these species seems rare: 2.7% and 1.6% for Brown and Blue-footed Boobies, respectively, in my samples. Moreover, one Brown Booby nest with two pseudo-eggs was incubated for over 60 days, and was long 'overdue', as normal incubation lasts about 42 days (Tershy & Breese 2000). Not ceasing to incubate within the normal period could cause an over-representation of pseudo-eggs in the sample.

As in gulls (Conover 1985), it seems likely pseudo-egg adoption by boobies results from behaviour intended to recover eggs rolled out of the nest. However, contrary to what has been observed for gulls, all but one booby nest with pseudo-eggs contained no real eggs. Hence, the adoption of pseudo-eggs may have caused a loss in reproductive output for the pairs involved. The benefits of such retrieval behaviour must balance the gain in fitness through the recovery of displaced eggs against the potential loss of fitness brought about by incubating infertile objects.

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FIRST SPECIMEN RECORD OF THE GREY-HEADED ALBATROSS DIOMEDEA CHRYSOSTOMA FOR NAMIBIA

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The Grey-headed Albatross *Diomedea chrysotoma* breeds on sub-Antarctic islands between 46° and 56°S, and on Diego Ramirez Island, Chile. Sightings and recoveries suggest that the oceanic distribution of the species is circumpolar, generally between 46° and 64°S during summer, and between 39° and 51°S during winter (Marchant & Higgins 1990). Grey-headed Albatrosses are rare visitors to the southern part of southern Africa (Ryan 1997). Off Namibia only three sightings, all of juveniles, in the months of May, August and November have been reported (Lambert 1968, Williams 1987, Komen *et al.* 1988, Lambert 2001). Most birds in southern African waters are immatures (Ryan 1997).

On 20 November 1993 the fresh carcass of an adult Grey-headed Albatross was found at $22^{\circ}29$ 'S, $14^{\circ}28$ 'E on the beach 20 km north of Swakopmund, Namibia (Figs 1 & 2). The only obvious injury was a broken neck.

This record represents the first specimen record of a Grey-headed Albatross (and the first record of an adult bird) and the fourth



brd of an adult bird) and the fourth documented occurrence of the species for Namibia. The frozen carcass is stored at the State Museum, Windhoek (accession number NM 4383).

Fig. 1. Head and bill of the adult Greyheaded Albatross *Diomedea chrysostoma* found in Namibia.

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Fig. 2. Underwing pattern of the adult Grey-headed Albatross Diomedea chrysostoma found in Namibia.

INFLUENCE OF DATE AND BODY MASS AT FLEDGING ON LONG-TERM SURVIVAL OF SOOTY TERNS STERNA FUSCATA

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The Sooty Tern Sterna fuscata is a pan-tropical seabird that nests typically on isolated oceanic islands. Sooty Terns nest always on the ground, generally amongst sparse herb vegetation and often in large dense colonies, sometimes numbering hundreds of thousands of pairs (Gochfeld & Burger 1996, Schreiber at al. 2002). In most colonies, laying is highly synchronised; e.g. on Bird Island, Seychelles, in 1973, 90% of eggs in a colony estimated at 395 000 pairs were laid in a nine-day period early in the laying season (Feare 1976) although the remaining eggs were laid over an approximate six-week period. In that study, time of laying appeared to be critical in terms of fledging success. Eggs laid during peak laying produced more chicks of fledging age, and chicks that were heavier at fledging and which fledged earlier, than chicks from later eggs. Despite being perhaps the world's most numerous tropical seabird (Schreiber et al. 2002), few aspects of its life history have been quantified (Hamer et al. 2001). Here, I analyse data from birds ringed as chicks on Bird Island, Sevchelles in 1972-1973 and recaptured during searches for ringed birds in 1994-2001, in order to examine the relationship between long-term survival and (1) body mass at fledging, and (2) date of fledging.

In August–October 1972 and 1973, chicks on the point of fledging were ringed with monel rings in the colony on Bird Island, Seychelles (4°53'S, 55°12'E). In 1972, between 30 August and 20 September a cohort of 806 chicks on the point of fledging was ringed and weighed to the nearest g using a 300-g Pesola balance. In 1973 a similar cohort, of 321 chicks, was ringed and weighed between 13 August and 3 September. In addition, in 1973, 4430 chicks on the point of fledging were ringed, but not weighed, between 13 August and 11 October. Chicks were considered to be on the point of fledging on the basis of their plumage. Feare (1976) described stage of plumage development in chicks and the birds ringed for this study were 'short tail' or 'tail forked'. At these stages they had attained their asymptotic body mass and were acquiring flight capability.

Each year from 1994 to 2002, ringed Sooty Terns have been searched for on Bird Island during incubation by teams of two to four people who walked slowly through the colony. Ringed birds were caught using hand nets and ring numbers were recorded (Feare & Lesperance 2002). Recaptures during the 1990s and early 2000s show that the rings used have not deteriorated during the course of this study, indicating that no birds would have lost rings.

The fledging masses of birds that were recaptured in 1994–2002 did not differ significantly from the masses of chicks that were not found. For the birds ringed in 1972, the mean mass of chicks ringed but not found was 183.3 ± 0.9 g (standard error), n = 794,

whereas the mean fledging mass of birds that were recaptured was 191.5±5.7 g , n = 12 (t_{804} = 1.14, P = 0.26). For the 1973 cohort the mean mass of chicks ringed but not found was 178.9±1.4 g, n = 313, whereas the fledging mass of birds that were recaptured was 188.3±6.2 g, n = 8 (t_{319} = 1.48, P = 0.18).

The sample of chicks ringed, but not weighed, in August–October 1973 was broken down into four 15-day periods for analysis; this division was used in order to provide adequate numbers (n > 5) of the sub-sample of these birds recaptured in 1994–2002 in a contingency table. The proportions of birds recaptured from each period differed from the pattern of ringing in these periods ($\chi_3^2 = 11.7$, P = 0.009). Paired comparisons between the time periods of ringing indicated that significantly more birds were recaptured from the 12–26 September cohort than from the first and last cohorts (Table 1).

In the two years, 1972 and 1973, for which samples of ringed Sooty Terns were available, subsequent recaptures of birds between 22 and 29 years later indicated that body mass at fledging did not influence post-fledging survival. On the other hand, the ringed birds recaptured in 1994–2002 suggested that birds that fledged in the middle of the fledging period in 1973 survived better than those that fledged earlier or later (Table 1).

These findings supplement the pre-fledging survival information reported by Feare (1976), where in 1973 more chicks fledged from eggs laid at the peak of laying in the colony, which occurred very early during the laying season, and chicks that fledged early in the season did so at a greater body mass and in a shorter time than did birds that fledged later. Higher survival of peak-season eggs and chicks was attributed to reduced predation and to reduced aggression/interference between neighbours that were all at the same stage of the breeding cycle. These factors would not apply once the birds had left the colony.

The greater body mass and early fledging of peak-season chicks was at least partly due to these birds experiencing better feeding conditions than did later-fledged birds in 1973, as was demonstrated by seasonal variations in growth rates (Feare 1976). Parents may have been more efficient when foraging at times when most other adults from the colony were also foraging, benefiting from local enhancement (Feare 1981).

Little is known about the life of juvenile Sooty Terns in the months after fledging or in the 4–10 years before they return to the colony to breed (Harrington 1974, Schreiber *et al.* 2002, C.J. Feare unpubl. data). They leave the colony, probably with only one

TABLE 1

Dates ringed	No. ringed	No. recaptured	Proportion recaptured	Significant differences
13–27 August	3136	45	0.014	a
28 August–11 September	341	8	0.023	
12–26 September	457	15	0.033	a,b
27 September–11 October	443	3	0.007	b

The re-sighting of Sooty Tern fledglings in their natal colony from four cohorts ringed at different stages of the fledging period on Bird Island, Seychelles, in 1973. Significant differences: pairs of rows sharing the same letters indicate χ^2 tests showing P < 0.05

parent (Schreiber et al. 2002), and the duration of parental care is unknown. During this time they are sometimes fed, in the air, by the parent (Feare 1975) and must learn to feed themselves. On leaving the colony, Sooty Tern fledglings are gull-like, with shorter wings and tails than adults, and they are also very different in colour. Their flight is less powerful and agile and they may feed in a different way from their parents (Feare 1975), but recentlyfledged juveniles do not appear to have been seen feeding. At sea, the problems facing juveniles are food location and procurement, kleptoparasitism by frigatebirds *Fregata* spp., predation by birds (e.g. skuas Catharacta spp.) and predatory fish (Feare 1976), and storms. Without knowing how and where juvenile Sooty Terns from the Seychelles feed, it is not possible to speculate how their survival might be influenced in ways that produced the observed pattern of survival. Steinen & Brenninkmeijer (2002), however, reported that body-condition factors involved in pre-fledging mortality of Sandwich Terns Sterna sandvicensis similarly had no influence on post-fledging survival. They attributed the absence of a post-fledging effect of earlier poor growth to the parents' ability to take juveniles to rich food supplies, enabling these juveniles to overcome potential earlier disadvantages.

Few studies of seabirds have been sufficiently long term to determine the effects of chick condition at fledging on post-fledging survival. Steinen & Brenninkmeijer (2002) reviewed seven such studies and concluded that species with post-fledging parental care showed no relationship between these parameters, whereas chick body condition did influence subsequent survival in species in which parents did not care for young after fledging. This study of Sooty Terns supports Steinen & Brenninkmeijer's (2002) hypothesis that parental provisioning after fledging buffers juveniles against growth disadvantages that they experienced prior to leaving their colonies.

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THE SCIENTIFIC NAME OF THE INDIAN YELLOW-NOSED ALBATROSS THALASSARCHE CARTERI

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Peter's checklist of the birds of the world (Mayr & Cottrell 1979) lists only Diomedea chlororhynchos Gmelin 1789 (based on Latham, 1785, and locality Cape of Good Hope) for all the Yellownosed Albatross breeding locations and provided no synonyms. However, two taxa had previously been described, long regarded as representing a subspecies of D. chlororhynchos, distinct from the nominate race. The first was Thalassogeron carteri Rothschild 1903 from Point Cloates, North-west Australia, whilst the second was Diomedea bassi Mathews 1912 (Mathews, 1912a) from East Australia. Godman (1910) illustrates chlororhynchos and carteri noting that the specimen of chlororhynchos was no longer available, and that (having viewed the type), carteri might not be adult. Mathews (1912b) provided illustrations and a discussion for both bassi and carteri, while Hartert (1926) discussed carteri and remarked that it had not been recognised as a juvenile when described. However, Mathews (1912b) had tentatively reached that conclusion in his discussion.

Like many of the early taxonomic descriptions for albatross taxa, this brief summary illustrates the principal factors which bedevil the acceptable naming of some taxa today – namely the absence of a type specimen (*chlororhynchos*); type localities which are not breeding sites, and a past lack of knowledge of plumage variation according to age.

Brooke *et al.* (1980) set out to clarify the problem of origin and naming for Yellow-nosed Albatrosses, based principally on the

plumage of various specimens. The tonal differences caused by age and feather wear can create confusion as they correctly reported. Among small albatrosses (mollymawks) the principal defining factor for determination of taxa is the configuration of the bill plates, especially at the proximal (skull) end. All fledged juveniles show the shape and skin relationships at the proximal end of the culmen plate which is retained throughout life, irrespective of changes in bill colouration as they age. Good published examples of such shape differences between taxa can be found in Murphy (1936, p. 493) and Serventy *et al.* (1971, p. 69).

Brooke *et al.* (1980) notes that '... the shape of the yellow stripe on the culmen also varies geographically. In the Indian Ocean ... the yellow stripe is pointed whereas in the Atlantic Ocean it is rounded'. They illustrate this with two black and white photos from breeding localities. Tickell (2000, plates 6 & 7) gives colour illustrations which demonstrate the same features. However, these authors concentrate on the shape of the yellow stripe at the proximal end of the culmen, which is a feature found only in adult or close to adult birds. This colour feature is of no use in juvenile birds. Further, the illustrations in Brooke *et al.* (1980) and Tickell (2000) do not show that the proximal end of the culmen of both taxa is yellow with a variable proximal margin of black. Murphy (1936, p. 493) illustrates for a *chlororhynchos* specimen (AMNH 132536) that the culmen plate widens above the nostrils and that there is a black proximal margin round the yellow.



Fig. 1. Sketch drawings of the dorsal proximal end of the bills of Yellow-nosed (mollymawks) Albatrosses: a. Thalassarche chlororhynchos (AMNH 132936).

- **b.** Thalassarche bassi (**Type** AMNH 527047).
- c. Thalassarche carteri (Type AMNH 527048).

Brooke *et al.* (1980) note that *carteri* is based on an immature specimen – white headed and with a purely black bill (AMNH 527048) and '... lacking the subspecific characters only patent in adults must be regarded as subspecifically indeterminate'. It is not clear from their text whether they viewed the types of *carteri*, or *bassi* (AMNH 527047), but I suspect not, as they refer to Mr John Farrand (*in litt.*) for a plumage description of the *bassi* specimen. Having rejected *carteri* on the basis of its immature state, they took into use *Diomedea chlororhynchos bassi* as the name for birds breeding in the Indian Ocean.

I viewed the type specimens of both *bassi* and *carteri* at the American Museum of Natural History, New York on 1 September 1982 and again in January 1988. I noted that both have a narrow non-thickened proximal end to the culmen plate above the nostrils, and that both had white heads, with a small black eyebrow for the *bassi*, and only a trace of black in front of the eye for the juvenile *carteri*.

The definitive difference in the proximal end of the culmen between *chlororhynchos* and *bassi/carteri* is the broadening of the plate above the nostrils in *chlororhynchos*. The shape of the proximal end of the adult yellow culmen stripe is not always consistently rounded in *chlororhynchos* and pointed in *bassi/carteri*, as I have seen two specimens in museums at Durban, South Africa and Edinburgh, Scotland (collected from breeding sites at Gough and Tristan Islands), where the yellow stripe proximal end is pointed rather than rounded. However, in both of these cases the culmen plate broadens above the nostrils.

My sketches in Figure 1 illustrate the differences at the proximal end of the culmen plate between *chlororhynchos, bassi* and *carteri*. Marchant & Higgins (1990) comprehensively present the situation illustrated as follows: '... Culminicorn of Indian Ocean birds tapers behind nares, and pointed at base; naricorn has straight sides. In S. Atlantic birds, culminicorn broadens behind nares, and has rounded base; naricorn has convex sides'.

So, what should the Indian Ocean taxon of the Yellow-nosed Albatross be called? Both type specimens are male and with the exception of the tail are almost identical in size (*bassi/carteri* length culmen plate 112 mm/110 mm; length culmen plate plus skin to feathers at base of bill 114/114; wing 470/465; tail 185/163; and tarsus 78/75). Given the explanations above regarding my inspections of the type specimens, both belong to the same taxon.

Nunn *et al.* (1996) re-established *Thalassarche* for the small albatrosses (mollymawks) in the southern hemisphere and this seems to have been widely accepted. Robertson & Nunn (1998) reviewed the taxonomy of albatrosses and made suggestions towards a discussion on taxa already morphologically distinguishable, with the assistance of DNA as an additional tool. Based on the determinations listed above, the scientific name used for the Yellow-nosed Albatrosses breeding in the Indian Ocean was *carteri*, which followed Turbott (1990).

Thus, *Thalassarche* (Thalassogeron) *carteri* Rothschild, 1903 according to the rules of nomenclature takes precedence by prior

determination over the synonym *Thalassarche* (Diomedea) *bassi* Mathews, 1912.

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FIRST RECORD OF THE CAPE GANNET *MORUS CAPENSIS* FOR PERU AND THE PACIFIC OCEAN

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The Cape Gannet *Morus capensis* is an endemic seabird to southern Africa, breeding on offshore islands off Namibia and South Africa (Harrison 1985). After breeding, dispersal takes place as far as Mozambique, rarely Tanzania, on the east coast of Africa, and to the Gulf of Guinea on the west (Harrison 1985). However, vagrant birds have been reported in Victoria, Australia (Venn 1982) and on the Atlantic coast of South America, in the Argentinean Patagonia and the Beagle Channel (Bergkamp 1995, Ramírez 1996) at the southern tip of South America.

On 22 July 1999, during the course of fieldwork at Macabí Island (07°48'S, 79°30'W) in northern Peru, Mariano Valverde photographed a strange sulid for the region. It was flying alone around the island for a short time but was not observed to land. The bird was later identified from the photograph (Fig. 1) as an adult Cape Gannet by its yellow head and nape, long gular stripe and its dark primary, secondary and tail feathers (Harrison 1985). This is the first record of the Cape Gannet in Peruvian waters and for the Pacific Ocean.

Macabí is an eight-hectare island, nine kilometres offshore, surrounded by the cold–upwelling waters of the Peruvian Current and supports large numbers of guano birds. Average sea surface temperature around the island during the observation was 15.8°C, below the long-term average for the locality (Moron & Crispin 1999). It is probable that the *El Niño* of 1997/98 could have influenced the dispersal of this vagrant bird in some way, although its exact route remains unknown.

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Fig. 1. The Cape Gannet Morus capensis at Macabí Island, Peru.

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