CURRENT STATUS OF BIRDS AT SOUTH GEORGIA

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ABSTRACT. The status of all bird species recorded at South Georgia is reviewed in the light of field work and observations since 1971. Two new breeding species, blue petrel and rockhopper penguin, have been discovered, two storm petrels found breeding for only the second and third times and 11 species, mainly vagrants from South America, have been added to the South Georgia list.

RECENTLY a considerable amount of information has been produced summarizing in detail the occurrence and distribution of Antarctic and sub-Antarctic birds (Watson, 1975; Watson and others, 1971). In the light of this and also of recent work at South Georgia, it seems appropriate to present a number of recent records and observations which emend the status of certain species, provide fresh sightings of some vagrants and constitute the first records of a number of other species for South Georgia and, in four cases, for the Antarctic and sub-Antarctic regions.

It seems useful at the same time briefly to review the status of all bird species recorded at South Georgia so that this paper will constitute an up-to-date check list for the island. Most of these new records were made, since 1970–71, by scientists at the British Antarctic Survey field station at Bird Island, north-west South Georgia. This and most other localities mentioned in the text are shown in Fig. 1.

The records have been divided into two categories: breeding species, and non-breeding visitors and vagrants recorded on land or in coastal waters up to the limit of the continental shelf.

The specimens and details of the records on which the information is based are lodged in the specimen collection and data files of the Life Sciences Division, British Antarctic Survey.

BREEDING SPECIES

King penguin (*Aptenodytes patagonica*)

The world-wide breeding status of this species was reviewed by Conroy and White (1973), who also demonstrated likely recent population increases and listed a maximum of 12 colonies and *c.* 10,000 pairs breeding each year at South Georgia. King penguin populations there have continued to increase and a more detailed investigation of its distribution at South Georgia is being prepared by R. I. L. Smith and J. R. B. Tallowin. Up-to-date information on some colonies is, however, still lacking and Fig. 2 shows the position of the known breeding colonies with an indication of their size.

Chinstrap penguin (*Pygoscelis antarctica*)

This species is at the northern limit of its breeding range at South Georgia where it has always been uncommon and local. In recent decades there has been a marked extension of range and increase in numbers of chinstrap penguin in the vicinity of its breeding strongholds on the Antarctic Peninsula and at the South Orkney and South Shetland Islands (Sladen, 1964; Conroy, 1974). Stonehouse (1967) summarized records for the colony at Cooper Bay, South Georgia, demonstrating an increase from 30 pairs in 1929 to the equivalent of 912 pairs in 1955. No subsequent counts are available for this colony, so more recent trends cannot be evaluated. However, the small colony at Bird Island has not increased much since it was discovered in 1957 (personal communication from W. N. Bonner) although it did reach 16 pairs in 1971. It seems likely, though, that the species has extended its distribution at South Georgia, at least since Rankin's (1951) survey of penguin colonies in 1947, as the colonies at Cape Disappointment, Pickersgill Islands and Cooper Bay have been discovered since that date.

The most recent information for all known colonies of the species at South Georgia is set out in Table I, from which it is likely that at present there are in excess of 1,800 breeding pairs.

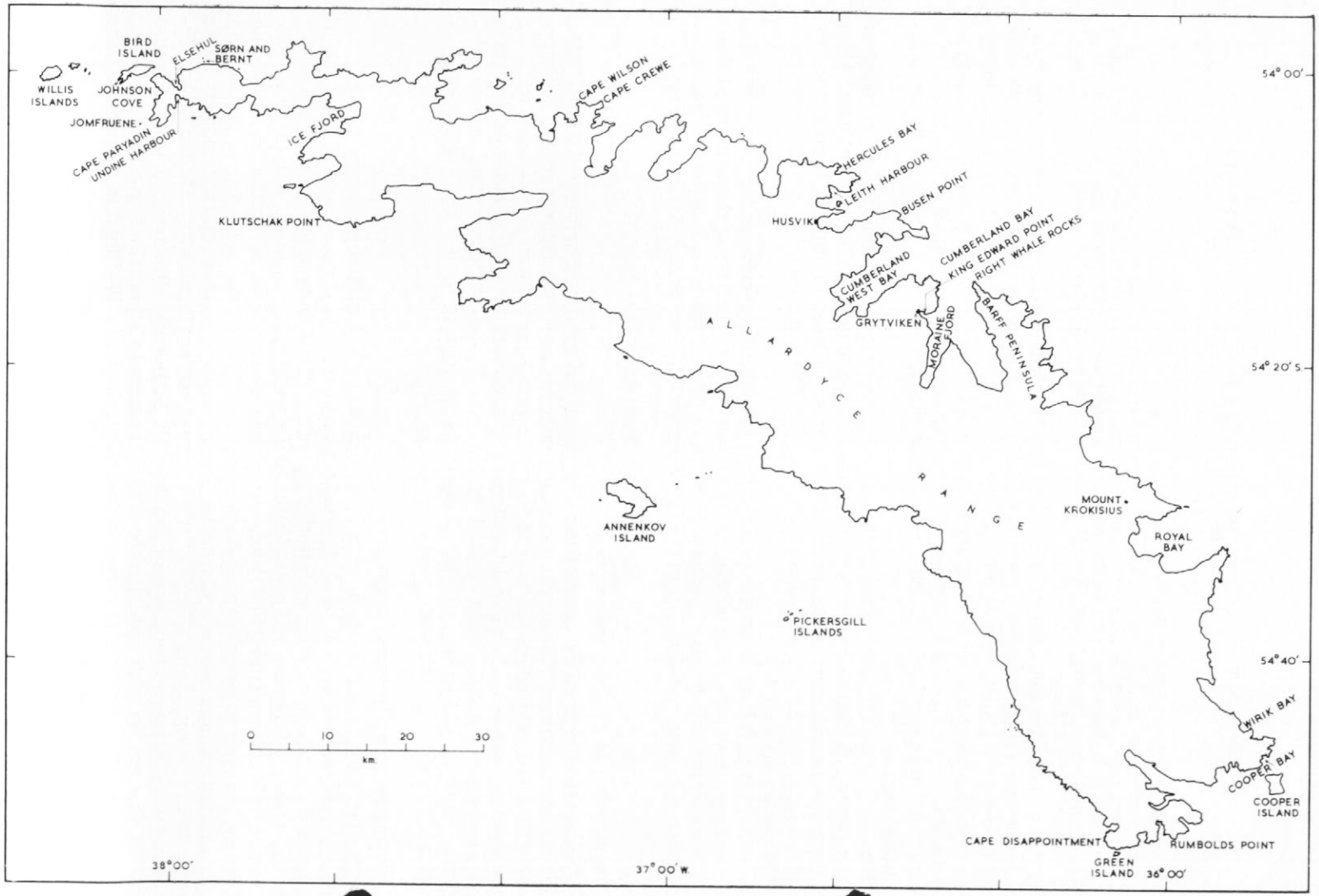


Fig. 1. Map of South Georgia showing the place-names mentioned in text.

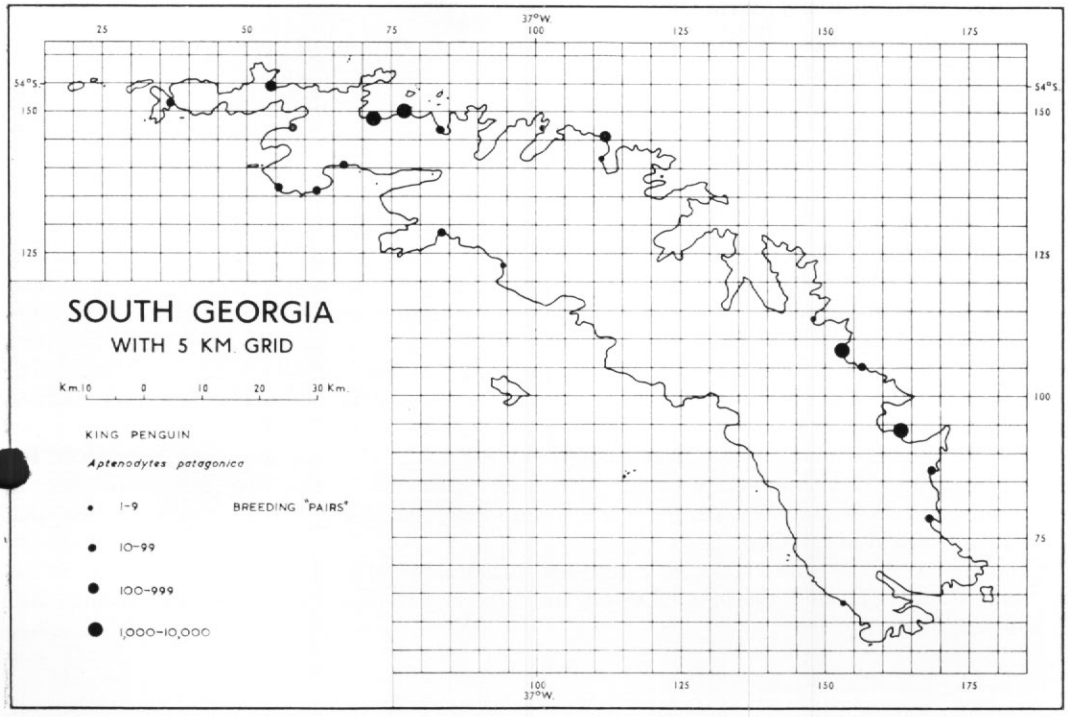


Fig. 2. King penguin breeding colonies, recorded in at least one summer between 1969 and 1975.

TABLE I. CHINSTRAP PENGUIN BREEDING COLONIES AT SOUTH GEORGIA

Locality	*Date*	*Number of nests*	*Reference*
Cooper Bay	January 1955	912*	Brown (*in* Stonehouse, 1967)
Cooper Island	December 1971	200	B.A.S. records
Cape Disappointment	December 1972	300†	B.A.S. records
Pickersgill Islands	December 1972	30+	B.A.S. records
Annenkov Island	January 1973	442	B.A.S. records
Bird Island	January 1976	7	B.A.S. records
Wirik Bay	December 1971	50	B.A.S. records
Royal Bay	1936	A few pairs‡	B. B. Roberts (in litt.)

* Estimate derived from count of chicks.
† Four small rookeries.
‡ Report from sealers, considered reliable.

Gentoo penguin (*Pygoscelis papua*)

Widely distributed and abundant, breeding in small colonies in bays and fjords all around the island.

Macaroni penguin (*Eudyptes chrysolophus*)

The most abundant penguin at South Georgia. In contrast to gentoo penguins, it is locally distributed and breeds in vast colonies on steep, exposed coastal slopes. There is no precise information on its numerical status and only a few colonies have been found since Rankin (1951) reported the existence of at least 19 colonies, noting its absence from the south-west coast. A small colony is now known from Pickersgill Islands.

Rockhopper penguin (*Eudyptes crestatus*)

On 20 December 1975, a pair of rockhopper penguins was photographed (Fig. 3a) incubating in the midst of the macaroni penguin colony on Pickersgill Islands (D. Orchard and C. Johnson; B.A.S. records). A second pair was found in a similar situation at Elsehul on 21 November 1976 (L. Kearsley and G. Thomas; B.A.S. records). An adult and sub-adult were seen amongst a group of non-breeding macaroni penguins on Bird Island on 28 December 1976, and another sub-adult on 8 January 1977 (J. P. Croxall, B. Pearson and P. A. Prince; B.A.S. records). These are not only the first breeding records for South Georgia but apparently the first authentic records for its occurrence there, as earlier records are in error as observed by Murphy (1936). It is probable, however, that individuals have previously been overlooked in the huge colonies of macaroni penguins but it is unlikely that more than a very few rockhopper penguins breed at South Georgia.

The source of the South Georgia birds, and presumably also of the straggler to the South Orkney Islands (Tickell, 1960), is probably the large populations of the Falkland Islands and Tierra del Fuego.

Wandering albatross (*Diomedea exulans*)

As a breeding bird at South Georgia, this is nowadays chiefly confined to offshore islands of which Bird Island is the most important. The population here was studied in detail by Tickell (1968) and he estimated that there were probably fewer than 5,000 pairs throughout South Georgia. The numbers of breeding birds at Bird Island have been monitored since 1971–72 and it is hoped shortly to complete a survey of the other important colonies, particularly those in the Bay of Isles and at Annenkov Island, to enable a more accurate total population estimate to be prepared.

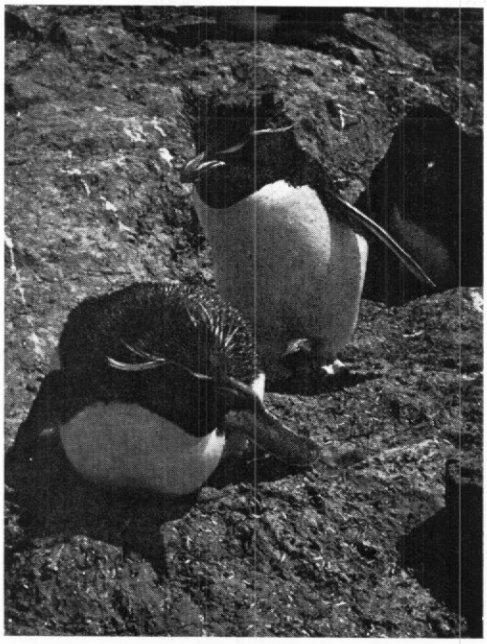
Black-browed albatross (*Diomedea melanophrys*)

Grey-headed albatross (*D. chrysostoma*)

Tickell (1976), in his review of the world status and distribution of these two mollymauks, has provided a fairly comprehensive summary of the situation at South Georgia. Recent and current field parties are providing supplementary information for many of the known colonies and it should soon be possible to re-appraise in detail the status of these species. Information recently to hand, additional to that communicated to Tickell, indicates the presence of large colonies of black-browed albatross at Annenkov Island and grey-headed albatross at Cape Paryadin, and that no colony is known of the latter species south of there. Table II gives current details of the numbers and distribution of the two species showing that black-browed albatross (at least 50,000 breeding pairs) is more widely distributed and probably more abundant than grey-headed albatross (at least 38,000 breeding pairs). No allowance has been made for the fact that at least part of the population of *D. chrysostoma* breeds successfully only biennially.

Light-mantled sooty albatross (*Phoebetria palpebrata*)

Widespread throughout the island in small numbers; rarely aggregated into small loose colonies.



a

b

Fig. 3. a. Rockhopper penguin breeding at Pickersgill Islands, 20 December 1975.
b. Fledgling blue petrel, removed from burrow at Bird Island, 6 February 1972.

TABLE II. NUMBERS AND DISTRIBUTION OF BLACK-BROWED AND GREY-HEADED ALBATROSSES

Locality	*Number of nests*		*Reference*
	D. melanophrys	*D. chrysostoma*	
Willis Island	10,000+	5,000	B.A.S. records
Bird Island	12,600*	9,150*	B.A.S. records
Elsehul	1,500	5,600	B.A.S. records
Near Sørn and Bernt islands	1,000	A few	B.A.S. records
Mainland north-west	3,000	17,000	B.A.S. records
Jomfruene islands	250	1,200	Morris, 1962 (*in* Tickell, 1976); Tickell, 1976
Klutschak Point	1,200	—	B.A.S. records (*in* Tickell, 1976)
Welcome Islands	20	—	B.A.S. records
Cape Buller	2,500	—	B.A.S. records
Cape Wilson	250	—	B.A.S. records
Cape Crewe	11	—	B.A S. records
Hercules Bay	1,000	—	B.A.S. records
Rumbolds Point	2,000+	—	B.A.S. records
Green Island	5,000	—	B.A.S. records
Cooper Island	5–10,000	—	B.A.S. records (*in* Tickell, 1976)
Annenkov Island	15–20,000	—	B.A.S. records

* Derived from count of chicks.

Southern giant petrel (*Macronectes giganteus*)

Northern giant petrel (*M. halli*)

The presence of both species as breeding birds was not recognized until 1971 at Bird Island but, although the relative abundance of each species is poorly known for the island as a whole, it is clear that, in contrast to the statement by Watson (1975), there is a substantial population of northern giant petrel. Thus at Bird Island, of the 677 chicks (probably over 95 per cent of the season's production) ringed in 1972–73, 328 were *M. halli* and 349 *M. giganteus*. Elsewhere on South Georgia, *M. giganteus* seems the more abundant species (e.g. 400 pairs breed on Barff Peninsula where *M. halli* is absent) but both species breed commonly at Annenkov Island to the south of the main island, so there can be no suggestion that the northern species is confined to the north and north-west parts of South Georgia.

As at Macquarie Island (Bourne and Warham, 1966) and Iles Crozet (Voisin, 1968), there is a distinct difference in the timing of the breeding season of these two species; *M. halli*, whose first chicks hatch *c.* 23 November, breeds about 6 weeks earlier than *M. giganteus*.

Cape pigeon (*Daption capensis*)

Recorded by all expeditions and naturalists to visit the island (e.g. Pagenstecher, 1884; Lönnberg, 1906; Matthews, 1929; Holgerson, 1945). Breeding was first demonstrated when three pairs, seen courting on ledges in St. Andrews Bay on 28 October 1936 by B. B. Roberts

and J. R. Strong, were later found with eggs (B. B. Roberts, in litt.). Another pair was found breeding near Leith Harbour the following year ("Bonxie", 1950). ["Bonxie" is a pseudonym for a Shetland whaler, stationed at South Georgia for several years, whose records were considered reliable by ornithologists of the time.] There was no subsequent breeding record until W. N. Bonner discovered nesting birds at Bird Island in 1956 (Tickell, 1960). Today there are 50–100 breeding pairs there and other colonies have been discovered at Royal Bay and Annenkov Island. Although the species is present year-round in large numbers in inshore and offshore waters alike, it is at the northern limit of its breeding range and appears to be a rare and local breeding species.

Snow petrel (*Pagadroma nivea*)

Although discovered breeding on Mount Krokisius, Royal Bay, by the German expedition of 1882–83 (von den Steinen, 1890) and on Coronda Peak, Leith Harbour, in 1937 or 1939 ("Bonxie", 1951), no subsequent breeding record was reported until 1960, but most naturalists had observed it frequently offshore and occasionally inshore. Since then about 30 occupied nests have been discovered by British Antarctic Survey field workers, and by the Combined Services Expedition in 1964 (Down, 1967). All have been in rock crevices in steep cliffs and above an altitude of 300 m. Parties of birds have been seen wheeling high above other suitable but inaccessible sites. In winter, we have regularly observed small flocks feeding inshore in Cumberland Bay.

Dove prion (*Pachyptila desolata*)

Probably the commonest breeding species at South Georgia. Large numbers breed on offshore islands, especially Bird Island, Cooper Island, Annenkov Island and in the Bay of Isles, but it seems likely that predation by rats has somewhat reduced numbers on the mainland.

Blue petrel (*Halobaena caerulea*)

First discovered breeding at Bird Island in 1972, this not uncommon species of cold sub-Antarctic and Antarctic waters was previously only known to breed on Prince Edward and Marion Islands, Iles Crozet (Ile de l'Est) and Iles Kerguelen. Occasional birds have been found elsewhere in areas thought suitable for breeding and thus it has been suggested to breed at Macquarie Island (Merilees, 1971), Signy Island (Ardley, 1936) and the Falkland Islands (Bennett, 1926). The situation at Macquarie Island is still uncertain but the long occupation of Signy Island as a British Antarctic Survey biological station makes it certain that it does not breed there and Cawkell and Hamilton (1961) could find no evidence for it breeding in the Falkland Islands.

In view of the frequency of reports of the species in the Scotia Sea, and particularly off South Georgia, it was surprising that no breeding site had been discovered in this area. Tickell (1960) reported two corpses among the many dove prions at skua middens on Bird Island but he found no evidence of breeding. Between December 1971 and February 1972, 173 corpses were collected from skua middens at Pearson Point (near Johnson Cove), Bird Island, indicating the existence of a substantial population and finally, on 6 February 1972, two fledglings were found in their burrows (Fig. 3b). In succeeding seasons more information has accumulated and the species' distribution at South Georgia, and the breeding and feeding biology of the Pearson Point colony has been studied (Prince, 1973, paper in preparation).

Concerning the distribution, it will suffice here to note that breeding has been demonstrated at Cooper Bay and is strongly suspected at Right Whale Rocks and Annenkov Island. Indeed, this last site is probably the species' stronghold at South Georgia as 40 per cent of several hundred skua-killed corpses examined on the island in 1972–73 were blue petrel (personal communication from E. Lawther). Annenkov Island is a little larger than Bird Island but with a

similar population of *c.* 200 pairs of brown skua. Tickell (1962) estimated that 10,000 prions are taken during the breeding season by skuas at Bird Island and, if a similar situation prevails at Annenkov Island, the total blue petrel population which could sustain a comparable predation must be considerable.

White-chinned petrel (*Procellaria aequinoctialis*)

Widespread and abundant, even on the mainland, where its larger size perhaps renders it less vulnerable than the small petrels to large-scale predation by rats.

Wilson's storm petrel (*Oceanites oceanicus*)

Widespread and abundant and presumably breeds throughout the island in suitable habitats; may occur in large numbers in inshore waters. It migrates to the Northern Hemisphere from March to November.

Black-bellied storm petrel (*Fregetta tropica*)

There was no report of this species breeding at South Georgia since the German expedition of 1882–83 which collected an adult and an egg from Royal Bay (Pagenstecher, 1884) until 21 January 1976, when a downy chick was found in a stream-bank burrow close to the station hut on Bird Island, near where two adults with large brood patches had been caught 2 months earlier. The same nest burrow was occupied by the species in the two subsequent years but not in 1975–76. Birds are not infrequently seen coming in to Bird Island at night but observations elsewhere on South Georgia are very scarce; 14 birds were caught after being dazzled by the station lights at King Edward Point on 6 February 1973 (personal communication from A. Clarke). Largely absent from sub-Antarctic waters between April and November.

Grey-backed storm petrel (*Garrodia nereis*)

This is a local or uncommon species throughout its wide breeding range, of which South Georgia is at the southern limit. It was discovered there by the German expedition of 1882–83 which collected single specimens in Royal Bay on 5 November 1882 and 12 January 1883, the latter with an egg in a narrow crevice on the south side of Mount Krokisius (von den Steinen, 1890). On 27 November 1904, Sörling shot a specimen in Moraine Fjord, Cumberland Bay, and later, at Grytviken, he found the dried-up remains of a half-fledged young of the previous season (Lönnberg, 1906).

There was no further evidence of breeding until the authors mist-netted an adult bird near the Bird Island station hut on 14 January 1972. New feathers were just appearing over its distinct brood patch and, close to where this bird was captured, a fledgling, with flight feathers still in sheath, was found dead in a stream on 1 February 1972. It is probable that a few pairs breed in the vicinity of the station, although subsequent attempts to locate nests or mist-net adults failed. An egg, probably belonging to this species, was found on 18 January 1974 about 800 m. from the station hut, lying at the base of a tussock clump. No burrow was located but a small nest of dried tussock was found attached to the skirt of a tussock clump. The egg weighed 7·5 g. and measured 33·2 mm. by 23·4 mm. These measurements are well within the range of 31·5–37·0 mm. by 22·7–27·0 mm. for the species (Watson, 1975) and very similar to the 33 mm. by 25 mm. for the egg collected in 1883 (Pagenstecher, 1884). On egg measurements, confusion is possible only with Wilson's storm petrel but all other circumstances relating to the record make it likely to have referred to the grey-backed storm petrel.

The timing of events in the breeding cycle of this species is very poorly known. At South Georgia, from the information above, it appears probable that eggs are laid early to mid-December, hatch mid to late January and chicks fledge by late March–early April. Matthews

(1929) implied a fledging date near the end of April but this was based on a misinterpretation of Pagenstecher's (1884) summary of Will's remarks that both adults and young of the two small storm petrels (i.e. *Fregetta tropica* and *Garrodia nereis*) had left the island by the end of April (Mosthaff and Will, 1884). Distribution in the non-breeding season is virtually unknown but it is likely that adults return to South Georgia in November.

South Georgia diving petrel (*Pelecanoides georgicus*)

Common diving petrel (*P. urinatrix*)

Both species breed on Bird Island where a study of their comparative breeding biology has recently been completed (paper in preparation by M. R. Payne and P. A. Prince). Here, and throughout South Georgia, *P. georgicus* breeds on scree slopes, usually above the tussock line. *P. urinatrix*, however, prefers tussock slopes, generally overlooking the sea.

Apart from Bird Island, there are no other breeding records for South Georgia for *P. urinatrix*, although P. A. Prince has collected fresh corpses from skua middens above the steep tussock slopes of Barff Point, overlooking Right Whale Rocks.

Blue-eyed shag (*Phalacrocorax atriceps*)

Breeds in small colonies in most parts of South Georgia.

South Georgia pintail (*Anas georgica*)

Widespread in small numbers, frequenting most bays and coastal areas of South Georgia.

Speckled teal (*Anas flavirostris*)

Apparently restricted to Cumberland East Bay, where a breeding population of 40–50 birds was discovered in 1971 (Weller and Howard, 1972). Its preference for larger and more permanent water areas and glacier ponds, which are mainly confined to the Moraine Fjord area, may prevent expansion to other areas of the island.

Sheathbill (*Chionis alba*)

Widespread in small numbers throughout the year; particularly associated with seal pupping beaches and penguin colonies.

Brown skua (*Catharacta lonnbergi*)

Widespread but commonest on offshore islands, where there are higher densities of small burrowing petrels. Most individuals leave on northward migration in April and return in September but a very few are present at the northern end of South Georgia in winter (personal communication from W. L. N. Tickell).

Dominican gull (*Larus dominicanus*)

Common throughout the year.

Antarctic tern (*Sterna vittata*)

Common throughout the year.

South Georgia pipit (*Anthus antarcticus*)

Matthews (1929) regarded this as common on low ground throughout the island. Today it is rather local on the mainland, probably due in part to predation by rats, but it is much commoner on offshore islands, such as Bird Island where 150–200 pairs breed.

NON-BREEDING SPECIES

Emperor penguin (*Aptenodytes forsteri*)

The first record we have been able to trace is of a bird of unknown age photographed at King Edward Point in 1929 by members of the Discovery Committee's marine biological station (B. B. Roberts, in litt.). An immature bird was found on 7 April 1937 ("Bonxie", 1953; B. B. Roberts, in litt.) near Leith Harbour, where it was kept with the intention of sending it to a European zoo.

There have been three recent records, all involving immature birds. In March 1974, one was seen on the beach at Husvik by R. Pratt and T. Wincott (B.A.S. records). The second sighting was at Elsehul on 25 March 1976 by T. S. McCann and A. Stewart (McCann, 1976). Another bird was photographed by station members on 13 July 1976 whilst it stood on the beach at King Edward Point. Immatures in moult occasionally visit Tierra del Fuego (Humphrey and others, 1970) and there are two records for the Falkland Islands (Cawkell and Hamilton, 1961). The species breeds at more than 25 localities around the Antarctic continent (Watson, 1975).

Adélie penguin (*Pygoscelis adeliae*)

Although usually reported as an occasional visitor to South Georgia (e.g. Matthews, 1929; Holgerson, 1945), all such statements appear to have been based on the statement of Bennett (1926), which the author admits was founded on hearsay only (personal communication from B. B. Roberts). There are two definite recent records: one at Annenkov Island on 24 November 1972 (personal communication from E. Lawther) and another photographed at Elsehul on 23 February 1976 (McCann, 1976).

This penguin breeds predominantly on the Antarctic continent and Antarctic Peninsula, has its nearest known colony on the South Orkney Islands and has been recorded once in the Falkland Islands (Woods, 1975).

Magellanic penguin (*Spheniscus magellanicus*)

Murphy (1936) considered that all records for South Georgia were based upon errors of identification and interpretation. The first fully acceptable record was made on 3 February 1961 at Elsehul by R. O. Morris, who observed an individual just offshore (Tickell, 1965). On 26 February 1961, Tickell saw presumably the same bird in the final stages of moult in Johnson Cove, Bird Island. On 9 March 1972, again on Bird Island, we captured an injured Magellanic penguin whose double breast band indicated it was at least 1 year old.

This species appears to be an irregular straggler across the Antarctic Convergence to South Georgia, presumably from the large breeding colonies in the Falkland Islands.

Sooty albatross (*Phoebetria fusca*)

One individual was observed closely while flying with several light-mantled sooty albatross at Elsehul on 5 January 1977 (G. Thomas; B.A.S. records). The bird was an adult, having light shafts to the primaries (Watson, 1975). The species breeds on islands north of the Antarctic Convergence and ranges to lat. 50°S. with occasional records to lat. 60°S. (Watson, 1975).

Antarctic fulmar (*Fulmarus glacialoides*)

This species is frequently seen in inshore waters at South Georgia, except between June and August when most birds from the Scotia Sea have presumably entered their wintering grounds in the warmer waters of the South American continental shelf (Jehl, 1974). There is still no

evidence to suggest that it breeds at South Georgia and the nearest known breeding locality of the widespread species is the South Sandwich Islands.

Antarctic petrel (*Thalassoica antarctica*)

This species was observed, and one specimen collected by Sörling, 6 miles (10 km.) off the north-east coast of South Georgia on 1 August 1905 (Lönnberg, 1906). There have been no reports since the erroneous reference to a record in Wilkins (1923) by Watson and others (1971), but the species may occur offshore occasionally in the winter when it disperses widely from its breeding localities on the Antarctic continent (Watson, 1975). At sea it has a wide circum-polar distribution to lat. 53°N. and has occurred once in the Falkland Islands (Tickell and Woods, 1972).

Narrow-billed prion (*Pachyptila belcheri*)

There are two records from Bird Island and both refer to corpses collected from skua middens. The first specimen was found in December 1958 (Tickell, 1960). The second record was not until January 1972, when R. W. Burton discovered a corpse, with wings, bill and legs still attached. The following measurements were recorded: culmen length 29·0 mm., culmen width 9·0 mm., culmen depth 6·4 mm., wing length 195·0 mm. Like Tickell, we have searched Bird Island extensively without success for more corpses and can only assume it is a rare visitor from the Falkland Islands where it breeds commonly. It is otherwise known to breed only on Iles Crozet (Ile de l'Est only) and Iles Kerguelen (Watson, 1975). There are a few records at sea in the vicinity of South Georgia (Harper, 1972) but none within the limits of the continental shelf.

Kerguelen petrel (*Pterodroma brevirostris*)

There are only two records of this species at South Georgia. It was first recorded on 7 April 1974 at Rosita Harbour, Bay of Isles, when two birds were dazzled in the lights of R.R.S. *Bransfield* and captured on deck. Later that year, a skull, almost certainly belonging to this species, was found on Barff Peninsula, Cumberland Bay, by I. Hogg and P. A. Prince. A specimen was also found dead on Signy Island, South Orkney Islands, on 11 March 1975 by J. Fenton (B.A.S. records). Watson and others (1971) gave many records of sightings to the east of the South Sandwich Islands and recently it has been recorded in Drake Passage (Harper and others, 1972; Lathbury, 1972). Also, observations made between South Georgia and Ururguay in May 1974 and April 1976 (see Fig. 4) show that it occurs in this area in autumn. These records may refer to post-breeding dispersal from Gough Island.

Great shearwater (*Puffinus gravis*)

A single bird of this species was seen by A. Clarke (personal communication) from R.R.S. *John Biscoe* on 21 March 1972 at lat. 54°05′S., long. 35°45′W. close to the edge of the South Georgia continental shelf. Watson and others (1971) reported two records further offshore, as well as one from near the South Sandwich Islands. The species breeds in the Tristan da Cunha group (Watson, 1975) and a very small colony exists on the Falkland Islands (Woods, 1970). The species is frequently observed north of the Antarctic Convergence on journeys between the Falkland Islands and South Georgia.

Great egret (*Casmerodius albus*)

The first confirmed record for this species at South Georgia was on 31 March 1964 at Royal Bay (Jefferies, 1965). In 1960, a bird, possibly belonging to this species, had been seen at King Edward Point (Tickell, 1965). More recently, on 29 May 1972 and again at King Edward

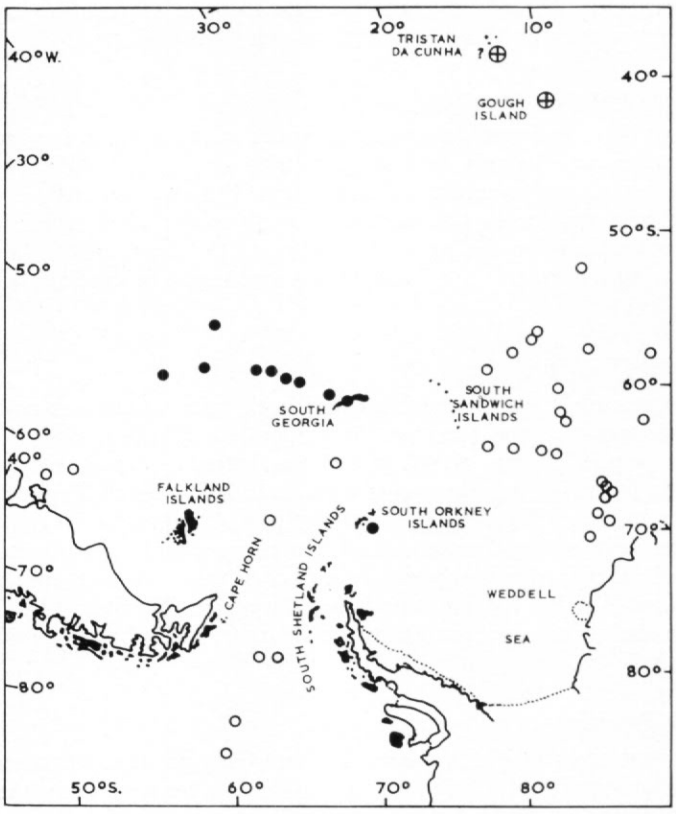


Fig. 4. Records of the Kerguelen petrel at sea in the south-west Atlantic Ocean.

Point, P. A. Prince and other members of the British Antarctic Survey station there saw a single bird flying over the sea, heading towards the beach in front of the station, when it quite suddenly plummeted into the sea about 50 m. from the beach. The bird was recovered approximately 10 min. later and found to be already dead, presumably from exhaustion.

The species is widespread in South America southward to the Straits of Magellan and has occurred as a vagrant on Tierra del Fuego (Humphrey and others, 1970). This cosmopolitan species is also known to have occurred twice on Macquarie Island (Watson, 1975), although these records presumably refer to the Australasian subspecies.

Blue-winged teal (*Anas discors*)

A male in good condition was collected in Cumberland Bay on 20 June 1972. It was observed in mid-April by J. R. B. Tallowin, who subsequently saw it feeding with *A. georgica* and *A. flavirostris* in the Moraine Fjord area. This species breeds in North America, migrating in winter to Central and South America, south to about lat.35°S. in the east (Mayer de Schauensee, 1971). A number of duck species have been reported as vagrants on sub-Antarctic islands but this is the first known record of blue-winged teal.

Chiloe wigeon (*Anas sibilatrix*)

A bird of this species was seen by M. R. Payne swimming with a flock of *A. georgica* on a small pond on Bird Island on 6 January 1972. After observation for a short period, it was

collected as a specimen. There are no other records from South Georgia but at Signy Island, South Orkney Islands, an emaciated male was found dead in mid-October 1966 (Beck, 1968).

The species breeds in the Falkland Islands (Woods, 1975), Chile (where it is one of the commonest ducks), Argentina south to Tierra del Fuego, Brazil, Uruguay and Paraguay (Mayer de Schauensee, 1971).

[*Note added in proof.* A flock of three was photographed at King Edward Cove in the winter of 1974 (C. Stephens; B.A.S. records).]

Purple gallinule (*Porphyrula martinica*)

During a period of bad weather in mid-June 1943 an immature male flew at night into a lighted window at Grytviken and was killed. The specimen was preserved by a member of the Compañia Argentina de Pesca and subsequently became the type of a new species *Porphyrula georgica* (Pereyra, 1944). This differs in no respect from the tropical American species *P. martinica* (Mayr, 1957), which breeds from the south-eastern United States southward to northern Chile and to lat. 35°S. in Argentina (Mayer de Schauensee, 1971). Two vagrants (at least one immature and in June) have been collected in the Falkland Islands (Woods, 1975) and numerous individuals, mainly immatures, have been recorded at Tristan da Cunha between March and July (Watson, 1975).

White-rumped sandpiper (*Calidris fuscicollis*)

There are four records of this species at South Georgia. Tickell (1965) saw one in Undine Harbour on 10 November 1958. The second occurrence was at Cooper Island on 19 December 1971 (J. R. B. Tallowin and M. W. Weller; B.A.S. records) and a third sighting was at Bird Island on 2 December 1975, when P. A Prince saw a bird feeding in a dry stream bed. The fourth record was of a bird seen at Elsehul on 16 November 1976 and at Bird Island on 19 November 1976 (L. Kearsley, B. Pearson, G. Thomas and P. A. Prince). The species breeds on the Arctic coasts of North America and winters chiefly in Paraguay, Uruguay, southern Brazil, Argentina and the Falkland Island (Woods, 1975).

Solitary sandpiper (*Tringa solitaria*)

On 11 November 1975, B. Pearson and P. A. Prince found this species feeding in a stream close to the Bird Island station hut. Attempts to capture the bird failed but a full field description was obtained, and from this A. Prater (British Trust for Ornithology) confirmed the identification.

The species breeds in Alaska and Canada, wintering chiefly in west Peru, Bolivia and Argentina (Mayer de Schauensee, 1971). It has not previously been recorded in sub-Antarctic regions nor even on the Falkland Islands.

Pectoral sandpiper (*Calidris melanotos*)

A bird of this species was seen on Bird Island on 26 December 1971. It was collected as a specimen and compared with skins in the British Museum (Nat. Hist.) collection to confirm the identification. The bird was in primary moult and the severe feather abrasion suggested that it was at least 1 year old. A second individual was seen on Bird Island on 27 October 1976 (R. I. L. Smith and P. A. Prince).

The species breeds in Arctic America and Siberia, wintering in Peru, southern Brazil, Argentina and Chile (Mayer de Schauensee, 1971). It has not previously been recorded from the sub-Antarctic. M. R. Payne photographed two birds near Port Stanley, Falkland Islands, in early November 1971 (B.A.S. records) and this observation appears to be the first report for these islands.

Band-tailed gull (*Larus belcheri*)

This species breeds in Peru, northern Chile and north and central Argentina (Mayer de Schauensee, 1971). It has been recorded once in Tierra del Fuego (Watson, 1975) and an immature of the Atlantic Ocean subspecies *L. b. atlanticus* was collected on South Georgia in January 1949 (C. C. Olrog *in* Watson, 1975).

Swallow (*Hirundo rustica*)

A bird of this species was captured by P. A. Prince on 10 November 1971 aboard R.R.S. *Bransfield* off north-west South Georgia at lat. 52°20′S., long. 40°10′W. This species has been recorded at sea in the Antarctic on two previous occasions: in May 1934 at lat. 55°20′S., long. 44°50′E. and in November 1963 at lat. 60°10′S., long. 61°15′W. (Holdgate, 1965). There are also two records from the mainland of South Georgia, both of juvenile birds. The first was captured at King Edward Point on 23 October 1972 and the second was seen at Bird Island on 18 November 1972. Of these five records, the bird captured aboard *Bransfield* and the one caught at King Edward Point refer to the race *H. r. erythrogaster*, as do two others recorded from Tristan da Cunha in March 1938 and October 1952 (Elliott, 1957). The three other records probably also belong to this race which breeds in North America and winters throughout the tropical and temperate zones of South America southward to Tierra del Fuego (Mayer de Schauensee, 1971). The European race *H. r. rustica* was collected on Marion Island in 1965–66 (van Zinderen Bakker, 1971) and on Iles Crozet in mid-May 1971 (Barrat, 1974).

Eastern kingbird (*Tyrannus tyrannus*)

A bird with the characteristics of a flycatcher was observed by I. Hogg on the fence posts behind Grytviken whaling station on 11 November 1973. Later the same day the bird was collected for identification by P. A Prince. Comparison with specimens at the British Museum (Nat. Hist.) left no doubt that it was an eastern kingbird. The following measurements were taken: wing 121 mm., culmen (to base of skull) 20·5 mm., tail 77·5 mm., weight 36·9 g. The primaries in particular were very heavily abraded, suggesting the bird was more than a year old.

The species is a widespread summer visitor to North America, particularly in the eastern United States. It winters throughout much of South America from Colombia to north-west Argentina (Mayer de Schauensee, 1971), occurring once in Chile (Philippi, 1967). It has not yet been reported from Tierra del Fuego or the Falkland Islands and this record is the first for the sub-Antarctic region.

In addition, two species have been introduced to South Georgia but failed to survive. Upland goose (*Chloephaga picta*) was introduced from the Falkland Islands in 1911. It was extirpated by 1950; a subsequent introduction in 1958 failed shortly afterwards (South Georgia Administration, no date). Watson also referred to a short-lived record of house sparrow (*Passer domesticus*). The bird apparently arrived in the late 1950s aboard a whaling vessel from South America and died soon afterwards (personal communication from W. N. Bonner).

Among the species of sea bird whose distribution pattern suggests that they pass through South Georgian waters are two which may have been previously overlooked due to their similarity to local breeding species. South polar skua (*Catharacta maccormicki*) migrates northward from its breeding areas on the Antarctic continent and Antarctic Peninsula, and has presumably been overlooked because of confusion with the brown skua.

The Arctic tern (*Sterna paradisaea*) is a well-known migrant from the Northern Hemisphere nto the Southern Ocean for the austral summer. It has probably been confused with the resident Antarctic tern (*Sterna vittata*) and Watson (1975) described the plumage characters and moult sequence, which should enable it to be distinguished.

ACKNOWLEDGEMENTS

We are most grateful to our colleagues from South Georgia who supplied field notes and observations. We also wish to thank Dr. J. P. Croxall for his help and advice at all stages of preparation of this paper. We are indebted to Mr. W. N. Bonner, A. Clarke, R. Hudson, Dr. B. B. Roberts and Dr. W. L. N. Tickell for their many helpful comments on the manuscript.

MS. received 7 December 1976

REFERENCES

ARDLEY, R. A. B. 1936. The birds of the South Orkney Islands. '*Discovery*' *Rep.*, **12,** 349–76.

BARRAT, A. 1974. Notes sur les oiseaux visiteurs de l'Ile Crozet (46°25'S, 51°45'E). *C.N.F.R.A.*, No. 33, 25–27.

BECK, J. R. 1968. Unusual birds at Signy Island, South Orkney Islands, 1966–67. *British Antarctic Survey Bulletin*, No. 18, 81–82.

BENNETT, A. G. 1926. A list of the birds of the Falkland Islands and Dependencies. *Ibis*, Ser. 12, **2,** No. 3, 306–33.

"BONXIE". 1950. Birds of South Georgia. *Birdland*, **5,** No. 3, 166–70.

———. 1951. Birds of South Georgia. *Birdland*, **5,** No. 4, 249–52.

———. 1953. Birds of South Georgia. *Birdland*, **7,** No. 4, 675–80.

BOURNE, W. R. P. *and* J. WARHAM. 1966. Geographical variation in the giant petrels of the genus *Macronectes*. *Ardea*, **54,** No. 1/2, 45–67.

CAWKELL, E. M. *and* J. E. HAMILTON. 1961. The birds of the Falkland Islands. *Ibis*, **103a,** No. 1, 1–27.

CONROY, J. W. H. 1974. Recent increases in penguin populations in the Antarctic and the sub-Antarctic. (*In* STONEHOUSE, B., *ed. The biology of penguins*. London, Macmillan, 321–36.)

———. *and* M. G. WHITE. 1973. The breeding status of the king penguin (*Aptenodytes patagonica*). *British Antarctic Survey Bulletin*, No. 32, 31–40.

DOWN, S. H. 1967. Observations on the birds of South Georgia. Ornithological report of the Combined Services Expedition to South Georgia, 1964–65, 14 pp. [Unpublished.]

ELLIOTT, H. F. I. 1957. A contribution to the ornithology of the Tristan da Cunha group. *Ibis*, **99,** No. 4, 545–86.

HARPER, P. C. 1972. The field identification and distribution of the thin-billed prion (*Pachyptila belcheri*) and the Antarctic prion (*Pachyptila desolata*). *Notornis*, **19,** No. 2, 140–75.

———., WATSON, G. E. *and* J. P. ANGLE. 1972. New records of the Kerguelen petrel (*Pterodroma brevirostris*) in the South Atlantic and Pacific Oceans. *Notornis*, **19,** No. 1, 56–60.

HOLDGATE, M. W. 1965. Occurrence of stray land birds in Drake Passage and the South Orkney Islands. *British Antarctic Survey Bulletin*, No. 6, 77.

HOLGERSON, H. 1945. Antarctic and sub-Antarctic birds. *Scient. Results Norw. Antarct. Exped.*, No. 23, 100 pp.

HUMPHREY, P. S., BRIDGE, D., REYNOLDS, P. W. *and* R. T. PETERSON. 1970. *Birds of the Isla Grande* (*Tierra del Fuego*). Washington, D.C., Smithsonian Institution.

JEFFERIES, C. J. S. 1965. A vagrant American egret at South Georgia. *British Antarctic Survey Bulletin*, No. 6, 77–78.

JEHL, J. R. 1974. The distribution and ecology of marine birds over the continental shelf of Argentina in winter. *Trans. S Diego Soc. nat. Hist.*, **17,** No. 16, 217–34.

LATHBURY, G. 1972. Observations of Kerguelen petrels in the Drake Passage. *Ardea*, **60,** Pt. 3 and 4, 224–25.

LÖNNBERG, E. 1906. Contributions to the fauna of South Georgia. *K. svenska Vetensk Akad. Handl.*, **40,** No. 5, 85–90.

MCCANN, T. S. 1976. Report on the field studies carried out at Elsehul. Season 1975–76 (B.A.S. No. N7/1975–76/M), 11 pp. [Unpublished.]

MATTHEWS, L. H. 1929. The birds of South Georgia. '*Discovery*' *Rep.*, **1,** 561–92.

MAYER DE SCHAUENSEE, R. 1971. *A guide to the birds of South America*. Edinburgh, Oliver and Boyd.

MAYR, E. 1957. New species of birds described from 1941 to 1955. *J. Orn. Lpz.* **98,** Pt. 1 22–35.

MERILEES W. J. 1971. Bird observations—Macquarie Island 1967. *Notornis*, **18,** No. 1, 55–57.

MORRIS, R. O. 1962. Bird life in north-west South Georgia. *Sea Swallow*, **15,** 43–49

MOSTHAFF, VON E. *and* H. WILL. 1884. Mitteilungen von der deutschen Polarstation daselbst 1882–83. 2. Bas Excursionsgebeit der deutschen Polarstation auf Süd-Georgien in geognosticher, floristicher und faunisticher Beziehung von Dr. H. Will. *Dte geogr. Bl.*, **7,** No. 2, 116–44.

MURPHY, R. C. 1936. *Oceanic birds of South America*. New York, American Museum of Natural History.

PAGENSTECHER, H. 1884. Die Vögel Süd-Georgiens, nach der Ausbeute der deutschen Polarstation 1882 und 1883. *Jb. hamb. wiss. Anst.*, **1,** 1–27.

PEREYRA, J. A. 1944. Descriptión de un neuvo ejemplar de ralido de la Isla Georgia del Sud. *Hornero*, **8,** No. 3, 484–89.

PHILIPPI, R. A. 1967. Tres especies de aves capturadas por primera vez en Chile. *Boln Mus. nac. Hist. nat. Chile*, **19,** No. 7, 121–24.

PRINCE, P. A. 1973. Preliminary report on the blue petrel at Bird Island (B.A.S. No. N15/1972/M), 7 pp. [Unpublished.]

RANKIN, N. 1951. *Antarctic isle; wild life in South Georgia*. London, Wm. Collins, Sons & Co. Ltd.

SLADEN, W. J. L. 1964. The distribution of the Adélie and chinstrap penguins. (*In* CARRICK, R., HOLDGATE, M. *and* J. PRÉVOST, *ed. Biologie antarctique*. Paris, Hermann, 359–65.)

SOUTH GEORGIA ADMINISTRATION. (No date). File No. 661. Ornithology. [Magistrates' records in the archives of the Scott Polar Research Institute, Cambridge.]

STONEHOUSE, B. 1967. Expanding population of *Pygoscelis antarctica* on South Georgia. *Ibis*, **109,** No. 2, 277–78.

TICKELL, W. L. N. 1960. Notes from the South Orkneys and South Georgia. *Ibis*, **102,** No. 4, 612–14.

———. 1962. The dove prion, *Pachyptila desolata* Gmelin. *Falkland Islands Dependencies Survey Scientific Reports*, No. 33, 55 pp.

———. 1965. New records for South Georgia. *Ibis*, **107,** No. 3, 388–89.

———. 1968. The biology of the great albatrosses *Diomedea exulans* and *Diomedea epomophora*. (*In* AUSTIN O. L., *ed. Antarctic bird studies*. Washington, D.C., American Geophysical Union, 1–55.) [Antarctic Research Series, Vol. 12.]

———. 1976. The distribution of black-browed and grey-headed albatrosses. *Emu*, **76,** No. 2, 64–68.

———. *and* R. W. WOODS. 1972. Ornithological observations at sea in the South Atlantic Ocean, 1954–64. *British Antarctic Survey Bulletin*, No. 31, 63–84.

VAN ZINDEREN BAKKER, E. M. 1971. Comparative avian ecology. (*In* VAN ZINDEREN BAKKER, E. M., WINTERBOTTOM, J. M. *and* R. A. DYER, *ed. Marion and Prince Edward Islands. Report on the South African Biological and Geological Expedition, 1965–1966*. Cape Town, A. A. Balkema, 161–71.)

VOISIN, J. F. 1968. Les pétrels geants (*Macronectes halli* et *Macronectes giganteus*) de l'Ile de la Possession. *Oiseau Revue fr. Orn.*, **38,** Special number, 95–122.

VON DEN STEINEN, K. 1890. Allgemeines über die zoologische Shatigkeit und Beobachtungen über das Leben der Robben und Vögel auf Süd-Georgien. (*In* NEUMAYER, G., *ed. Die Internationale Polarforschung 1882–83. Die Deutsche Expedition und ihre Ergebnisse*. Berlin, U. Usher and Co., **2,** 194–279.)

WATSON G. E. 1975. *Birds of the Antarctic and Sub-Antarctic*. Washington, D.C., American Geophysical Union [Antarctic Research Series].

———., ANGLE, J. P., HARPER, P. C., BRIDGE, M. A., SCHLATTER, R. P., TICKELL, W. L. N., BOYD, J. C. *and* M. M. BOYD. 1971. Birds of the Antarctic and Subantarctic. *Antarct. Map Folio Ser.*, Folio 14, 18 pp.

WELLER, M. W. *and* R. L. HOWARD. 1972. Breeding of speckled teal *Anas flavirostris* on South Georgia. *British Antarctic Survey Bulletin*, No. 30, 65–68.

WILKINS, G. H. 1923. Report on the birds collected during the voyage of the "Quest" (Shackleton–Rowett Expedition) to the South Atlantic. *Ibis*, Ser. 11, **5,** No. 4, 474–511.

WOODS, R. W. 1970. Great shearwater *Puffinus gravis* breeding in the Falkland Islands. *Ibis*, **112,** No. 2, 259–60.

———. 1975. *The birds of the Falkland Islands*. London, Anthony Nelson.