

# BIRDS OF SOUTH GEORGIA: NEW RECORDS AND RE-EVALUATIONS OF STATUS

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**ABSTRACT.** A check list of South Georgia birds is presented, giving details of all new records from 31 January 1977 to 30 April 1982 and summarizing revised information on the status of many of the breeding species. In this period, 22 visiting or vagrant species have been recorded, seven for the first time at South Georgia, including the first species of Palaearctic origin, little stint and European house martin, and substantial numbers of cattle egrets. One new breeding species, fairy prion, was discovered. The total avifauna now consists of 30 breeding species and 36 visitors and vagrants.

The status of all birds recorded at South Georgia and within the waters of its continental shelf was reviewed by Prince and Payne (1979) who summarized all records up to 31 January 1977. They reported a total of 29 breeding species and 19 visitors or vagrants.

Since 1977 there have been many fewer field parties around South Georgia in summer and nearly all records have come either from the permanent station at Grytviken in King Edward Cove, Cumberland Bay or from the summer field station at Bird Island, which has been occupied in every season.

Despite this reduced coverage, one new breeding species has been discovered and 22 visitors and vagrants reported of which seven are first records for South Georgia. This paper presents the details of these records and lists all other species recorded at South Georgia up to 30 April 1982 together with summaries of fresh information on their status and distribution that has accumulated in the course of recent research. For species marked \* no new information, relevant to this account, is available since Prince and Payne (1979). Localities referred to in the text are shown in Fig. 1.

## SPECIES LIST

### Emperor penguin (*Aptenodytes forsteri*)

There are two new records, making a total of seven. Both concern immatures, the first at Middle Head, Cumberland Bay, on 16 February 1977, the second on 4-5 April 1977 when a bird was photographed among the king penguins at Elsehul (Jehl and others, 1978). A single bird appeared at Thule Island, South Sandwich Islands in April 1979 (Cordier and others, 1981), the first record for the group.

### King penguin (*Aptenodytes patagonicus*)

Smith and Tallwin (1980) reviewed all numerical data on king penguins at South Georgia and reported a total count of 57 000 adults (breeding and non-breeding) and chicks at 31 breeding sites. This involved the assumption that all birds breed twice in three years and that breeding success is 86% (Stonehouse, 1960). On this basis the total breeding population would be c. 22 000 pairs. However, Stonehouse's (1960) figure for breeding success was not derived from a study of marked birds and is very high for any penguin, especially a species in which the chicks of late breeders are known to have low survival. Barrat (1976), working at Îles Crozet, recorded

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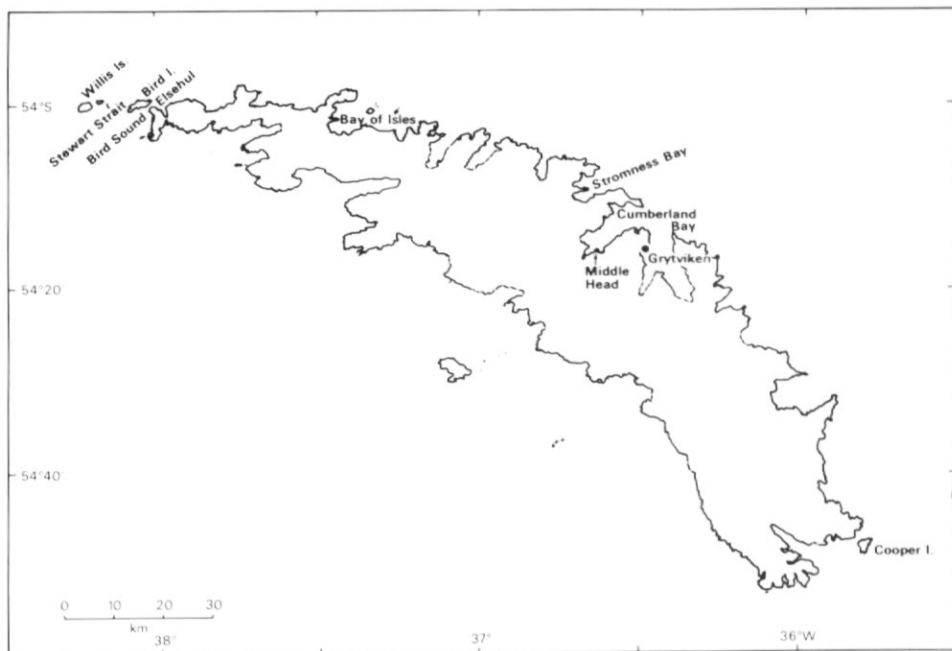


Fig. 1. Map of South Georgia, showing place-names mentioned in the text.

breeding success to be 57%, which seems much more realistic. Re-analysing Smith and Tallwin's (1980) data on this basis gives a total breeding population of 34 000 pairs.

#### Adélie penguin (*Pygoscelis adeliae*)

An immature was photographed among gentoo penguins at Prion Island in the Bay of Isles on 11 April 1977 (Jehl and others, 1978). An adult was present at Bird Island on 31 October and 1 November 1981. There are only two previous records. In view of its abundance in the southern Scotia Sea this is surprising and suggests that even immatures seldom move far north of the pack-ice regions in autumn and winter.

#### \* Chinstrap penguin (*Pygoscelis antarctica*)

#### Gentoo penguin (*Pygoscelis papua*)

The South Georgia distribution of this species was shown in Croxall and Prince (1979; fig. 6). About 180 colonies are now known; we have counts, totalling 55 000 pairs, for c. 120 of these. If the remaining colonies have a similar average size (c. 470 pairs) then the total population is at least 83 000 pairs but probably does not exceed 100 000 pairs.

#### \* Macaroni penguin (*Eudyptes chrysolophus*)

The location and size of all the known colonies at South Georgia was summarised by Croxall and Prince (1979; table 5 and fig. 7). Their estimate for the total breeding population of c. 5.4 million pairs depends almost entirely on the size of the population on the Willis Islands which still have not been satisfactorily surveyed.

\* Rockhopper penguin (*Eudyptes chrysocome*)

Magellanic penguin (*Spheniscus magellanicus*)

A bird in advanced moult was standing amongst moulting macaroni penguins at Bird Island on 28 February 1982. It was last seen on 6 March when moult was almost complete. There are two previous records for South Georgia, both from Bird Island (Prince and Payne, 1979).

\* Wandering albatross (*Diomedea exulans*)

Its distribution and abundance at South Georgia was recorded in detail in Croxall (1979) and summarised in Croxall and Prince (1979).

\* Black-browed albatross (*Diomedea melanophrys*)

\* Grey-headed albatross (*Diomedea chrysostoma*)

White-capped albatross (*Diomedea cauta*)

An individual of the white-capped albatross *Diomedea cauta* species group was captured at Bird Island in a *D. chrysostoma* colony on 28 February 1982. The bird was photographed (Fig. 2) and the following measurements taken: wing length 565 mm, exposed culmen 129.7, tarsus 90.0 mm. From the darkness of the bill, pale back and measurements, we identified the bird as a member of the race (or species) *D. (c.) salvini* and this has been confirmed, on examination of the photographs, by Dr W. R. P. Bourne and Mr C. J. R. Robertson. This taxon breeds on the Snares and Bounty Islands, New Zealand and ranges east to the coasts of Peru and Chile but occasionally west to South Africa and the coast of Argentina (Jouanin and Mougín, 1979). This is the first definite record for South Georgia but Prince and Payne (1979) overlooked the report of an adult *D. (c.) cauta* at Liverpool Museum apparently collected in the Indo-Atlantic sector of the Southern Ocean and labelled "*D. melanophrys* South Georgia 16 November 1926" (Bourne, 1977).

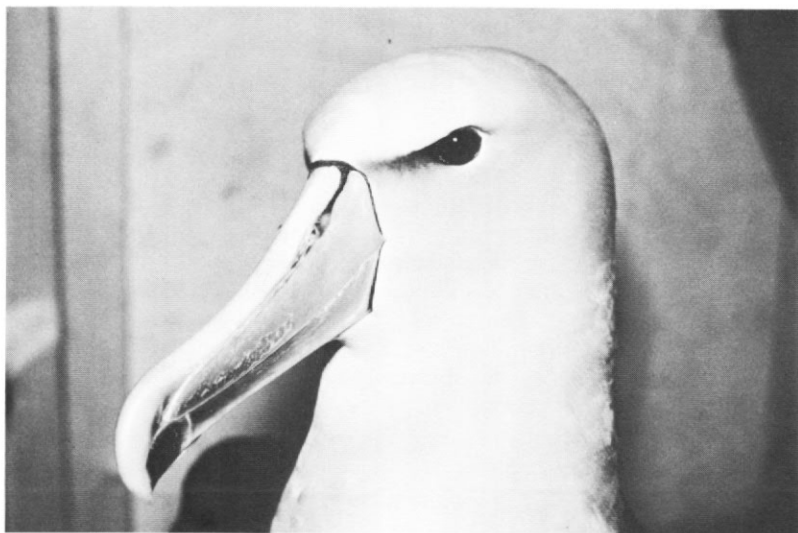


Fig. 2. White-capped albatross *Diomedea cauta salvini* caught at Bird Island.

We have been unable to trace any additional information that would verify the provenance of this specimen but with the recognition that *D. c. cauta* may be the more common race in South African waters (Bourne, 1977; Clancey, 1978) it is plausible that two of the three members of this species-group may occasionally occur in South Georgia waters.

Light-mantled sooty albatross (*Phoebastria palpebrata*)

The South Georgia distribution of this species is mapped and its abundance reviewed by Thomas and others (1983) where the total annual breeding population is estimated to be 5000 pairs.

Sooty albatross (*Phoebastria fusca*)

A sighting at Bird Island during February 1977 was probably the bird previously reported from Elsehul on 5 January 1977.

Southern giant petrel (*Macronectes giganteus*)

Northern giant petrel (*Macronectes halli*)

Since Prince and Payne (1979) recorded the existence of several breeding sites of each species, considerable additional information has accumulated. Both species are now known to be widely distributed around most of the South Georgia coastline. In many areas, however, one species predominates, e.g. *M. giganteus* around Cumberland Bay and *M. halli* at Bird Island. Present numerical data indicate minimum breeding populations of 2500 pairs of *M. halli* and 5000–6000 pairs of *M. giganteus*. As we lack counts for some important areas it is possible that the actual breeding populations are considerably higher than the estimates above.

Antarctic fulmar (*Fulmarus glacialisoides*)

This species is frequently seen between October and December in inshore waters at South Georgia. There is no evidence that it breeds at South Georgia.

\* Antarctic petrel (*Thalassoica antarctica*)

Cape pigeon (*Daption capense*)

Prince and Payne (1979) regarded this as a rare and local breeding species although they noted that there were recent reports of breeding in several areas. It is now clear that the species is widely distributed around South Georgia, although there are no really large colonies. Breeding has been recorded in over 60 of c. 160 5-km grid squares containing coastline. The population on Bird Island, where breeding was first recorded in 1956 and a population of 50–100 pairs estimated in the early 1970s, was censused in 1980 and a total of 350 pairs recorded (I. Hunter, unpublished). The South Georgia population is probably of the order of 20000 pairs.

Snow petrel (*Pagodroma nivea*)

There are only a few additional breeding records to add to the summary provided by Payne and Prince (1979) and the total breeding population is unlikely to exceed 3000 pairs.

*Dove prion (Pachyptila desolata)*

An intensive survey of the distribution and abundance of this species at Bird Island (Hunter and others, 1982 and unpublished) has revealed an estimated breeding population of just over 500 000 pairs. On the basis of its distribution all around the island, the extent of suitable habitat and the proportion of this also inhabited by brown rats *Rattus norvegicus*, a revised estimate for the South Georgia breeding population of 22 million pairs has been derived. We believe this to be more realistic than the preliminary estimate used by Croxall and Prince (1982).

*Narrow-billed prion (Pachyptila belcheri)*

There are two previous records, both relating to corpses found on Bird Island. Between 1979 and 1981 the remains of specimens have been found in regurgitations from *M. giganteus* breeding at Bird Island (Hunter, in press). However, there is still no evidence that this prion breeds at South Georgia and the occurrence of this species in the diet of *M. giganteus* is thought to be a result of predation at sea. Harper (1972) reported seeing birds at sea in the vicinity of South Georgia and since then two specimens have been found on the deck of RRS *John Biscoe*. The first of these was of a bird in primary moult taken near Cooper Island at the south-east end of South Georgia. The second record was of a bird found alive at first light on 3 March 1982, when the ship was approaching Bird Island.

*Fairy prion (Pachyptila turtur)*

This species was first recorded at South Georgia between 30 March and 10 April 1977 when four specimens were captured aboard the RV *Hero* while at anchor at Elsehul (Jehl and others, 1978). In the same year unidentified prions were seen flying and behaving in a manner unlike dove prions below the north-facing cliffs on Bird Island. In 1981 breeding was confirmed when a small population was found by P. A. Prince in Prince Cove, Bird Island (Fig. 3). The birds breed under large



Fig. 3. Breeding fairy prion *Pachyptila turtur* caught at Bird Island.

Table I. Fresh measurements of breeding fairy prions at Bird Island. Values are mean  $\pm$  one S.D.; weights in g, other measurements in mm.

Location	Sample size	Length	Bill width	Depth	Wing	Tarsus	Weight
Beauchêne Island, Falkland Islands	13	21.4 $\pm$ 0.6	10.0 $\pm$ 0.6	6.7 $\pm$ 0.5	183.8 $\pm$ 3.5	32.3 $\pm$ 0.5	135.8 $\pm$ 15.8
Bird Island, South Georgia	21	22.1 $\pm$ 1.8	10.6 $\pm$ 0.5	7.2 $\pm$ 0.5	186.0 $\pm$ 3.0	33.1 $\pm$ 1.7	145.0 $\pm$ 14.0

boulders and in deep rock crevices usually at the bottom of steep cliffs. It is presumably for this reason that they have remained undiscovered for so long and there is no reason to believe that they do not breed elsewhere on South Georgia in suitable habitats.

South Georgia birds are very similar to those discovered by Strange (1968) at Beauchêne Island, Falkland Islands. Comparison of measurements (Table I) suggests that both populations represent the same taxon. These two sites are rather isolated from other breeding localities of the species which is locally common at most sub-Antarctic islands in the Indian Ocean and abundant in the New Zealand region, where there is considerable variation in measurements and particularly in bill dimensions.

Falkland Island birds are not entirely typical of other populations of *P. turtur* and it has been suggested that they might even be referable to the fulmar prion *P. crassirostris* (Watson, 1975). Although this species, which breeds only in the New Zealand region (and at Heard Island), is sometimes combined with *P. turtur* (e.g. Cox, 1980), Harper (1980) has reviewed their characteristics and shown that most specimens may be distinguished without difficulty.

However, there is a race of the fulmar prion, *P. c. eatoni*, breeding at Heard and Auckland Islands, which is smaller in all dimensions than the nominate race and whose measurements overlap substantially with those of *P. turtur*. Harper (1980) showed that the width of the unguis is an excellent character for distinguishing *P. c. eatoni* from *P. turtur*. In the former it is 4.6–5.2 mm wide at its widest point, in the latter 3.3–4.4 mm. In 21 fresh specimens from South Georgia unguis width was 4.3  $\pm$  0.3 mm. As there is a 6–16% shrinkage in bill measurements of prions when comparing fresh and dry material (Kinsky and Harper, 1968) this would imply an unguis width of c. 3.9 mm for dry specimens. In any case the South Georgia (and Beauchêne Island) specimens are clearly referable to fairy prion *P. turtur*.

This identification was confirmed when P. C. Harper, W. R. P. Bourne and P. A. Prince jointly examined all available specimens from South Georgia and the Falkland Islands, including those in the United States National Museum and the Smithsonian Institution. On plumage characters (see Harper, 1980) it was agreed that the specimens were all probably referable to *P. t. antarctica*, a pale-coloured race breeding off southern New Zealand at Antipodes, Snares and Big South Cape Islands, and possibly at Macquarie Island.

#### Broad-billed prion (*Pachyptila vittata*)

An individual of this species was seen by M. Whitehouse from RRS *John Biscoe* near the entrance of Cumberland Bay, on 24 November 1982. Field identification of the species in this difficult genus has been greatly assisted by the extensive experience obtained by Whitehouse and others during the collection of data on pelagic seabirds as part of the BAS Offshore Biological Programme. This is the first record for South

Georgia. In the South Atlantic the species breeds at Tristan da Cunha and Gough Island and we have sometimes encountered it on voyages between South Georgia and Brazil.

Blue petrel (*Halobaena caerulea*)

Since Prince and Payne (1979) reported the discovery that this species breeds at several sites on South Georgia, additional records have indicated that it is widespread and breeds in many parts of the mainland as well as on the offshore islands.

Survey work at Bird Island has estimated the breeding population there to be 13000–17000 pairs. Using the mean breeding density at Bird Island together with present information on its South Georgia distribution, a total population of at least 70000 pairs is indicated.

Kerguelen petrel (*Pterodroma brevirostris*)

This species is now frequently seen in the vicinity of South Georgia in late summer and autumn. In addition four birds were captured on RV *Hero* at Elsehul between 8 and 12 April 1977 (Jehl and others, 1978) and two dazzled by the lights on RRS *Bransfield* while at anchor in Bird Sound on 10 April 1981. There is still no evidence of breeding.

Soft-plumaged petrel (*Pterodroma mollis*)

Commonly reported between the Falkland Islands and South Georgia (e.g. Jehl and others, 1979), there are now a few records of birds within the continental shelf and the species probably occurs regularly in small numbers in South Georgia waters, particularly in late summer.

White-chinned petrel (*Procellaria aequinoctialis*)

Surveys have revealed that this is much more abundant than previously recognized at Bird Island, where its breeding population is 23000–36000 pairs. Taking into account its extensive distribution around South Georgia, its relative resistance to depredations by rats and the considerable extent of suitable habitat, a total breeding population of c. 2 million pairs is probably not unrealistic.

Great shearwater (*Puffinus gravis*)

With the increasing number of seabird observations being made from BAS ships this species is now frequently seen over the continental shelf around South Georgia. Sightings of note are of a single bird within the Bay of Isles seen from RV *Eltanin* on 7 February 1965 (Harper, 1966), a small group in the same locality on 27 February 1982 and a single bird in Stewart Strait near Bird Island on 6 March 1982.

Wilson's storm petrel (*Oceanites oceanicus*)

Our records indicate that while the species is extremely widespread there are relatively few positive records of breeding from the north coast. Like all storm petrels its abundance is very difficult to assess. For Bird Island, using breeding densities of one pair per 21 m<sup>2</sup>, from studies at Signy Island, South Orkney Islands (Beck and Brown, 1972), and knowing the extent of suitable coarse scree habitat (Hunter and others, 1982), a breeding population of c. 15000 pairs can be calculated.

For South Georgia the breeding population might be in the region of 600000 pairs. This is considerably less than the population of some other burrowing species, which

would conflict with suggestions that Wilson's storm petrel is one of the most abundant of all seabirds, but is entirely in line with our field experience at South Georgia.

Black-bellied storm petrel (*Fregetta tropica*)

Prior to 1977 the species was regarded as very scarce at South Georgia with breeding only recorded at two sites. Three new breeding sites have been discovered, two on the mainland south coast and one in Cumberland Bay. At Bird Island it has been found to be a widespread breeder in small numbers in moss banks, stable boulder scree and other habitats outside pure tussock grassland. Nevertheless its Bird Island population does not exceed 500 pairs and it is unlikely that there are more than 10000 pairs in the South Georgia population.

\* Grey-backed storm petrel (*Garrodia nereis*)

South Georgia diving petrel (*Pelecanoides georgicus*)

Payne and Prince (1979) reviewed the biology and ecology of this species based on detailed studies at Bird Island. A recent survey of its breeding areas at Bird Island revealed a population of c. 4520 pairs (Croxall and Hunter, 1982) and suggested that, if this is typical of South Georgia as a whole, there might be a total population of about 2 million pairs.

Common diving petrel (*Pelecanoides urinatrix exsul*)

The biology and ecology of this species was described in detail by Payne and Prince (1979). At Bird Island it is restricted to very steep tussock slopes where it is abundant and its breeding population is c. 90000 pairs. We have evidence of breeding at only two other sites around South Georgia but it is likely to be widespread where its breeding habitat occurs and if breeding densities match those at Bird Island the extent of suitable habitat at South Georgia indicates a breeding population of 3.8 million pairs.

Blue-eyed shag (*Phalacrocorax atriceps*)

This species breeds all round South Georgia in small colonies, mostly of less than 100 pairs and its total breeding population may be less than 5000 pairs. At Shag Rocks (53°33' S, 42°02' W), however, there is a notable colony which exceeds 1000 pairs.

Great egret (*Casmerodius albus*)

A bird of this species was seen at Grytviken, Cumberland Bay on 14 April 1979. There are three previous records, two from Cumberland Bay.

Snowy egret (*Egretta thula*)

An egret, described as belonging to this species, was seen by B. Pearson and K-H. Kock flying alongside the West German research ship FFS *Walther Herwig*, near Clerke Rocks (55°08' S, 35°00' W) on 1 April 1978. Two days later a snowy egret was seen on Bird Island by L. Kearsley and both records may well refer to the same bird. There was a second sighting on 4 April 1979 when a bird was disturbed from amongst tussock clumps on Wanderer Ridge, Bird Island. These are the first records for South Georgia of this species which is widespread from southern North America south to



central Chile and Argentina. There is one record for the Falkland Islands, in May 1957 (Woods, 1975).

Cattle egret (*Bubulcus ibis*)

On 14 April 1977 at 53°58'S, 40°32'W, 130 km west of the Willis Islands group, three cattle egrets were seen (and one collected) flying around the research ship RV *Hero* (Jehl and others, 1978). On 25 April at least five and possibly more had arrived in the vicinity of Cumberland Bay. These records constitute the first occurrence of this species at South Georgia.

There were no sightings in 1978 but the following year between 40 and 50 birds were reported. On 31 March 1979 up to 14 were following RRS *Bransfield* as she sailed from the Falkland Islands towards South Georgia. Between 10 and 20 April at least 25 cattle egrets were seen at Bird Island and a further 12 were reported at Grytviken. The last bird was seen there on 24 April. On 17 March and 26 April 1979 birds were reported from the South Shetland Islands (Schlatter and Duarte, 1979), and in December 1979 a dead bird was found at the Argentine Islands (A. Saunders, personal communication), at 65°15'S, 64°16'W the most southerly report of the species.

There were no records in 1980 but in 1981 a single bird and possibly three were seen on 26 March at Bird Island and one bird was seen at Grytviken on 11 April. A dead bird was found at Signy Island, South Orkney Islands, on 24 February 1981 (Price, 1981). In the following year one bird was seen at Bird Island on 18 April 1982 and individuals found on board RRS *Bransfield* on 3 April at 58°33'S, 63°50'W and on 13 April at 61°30'S, 27°52'W about 150 km south of Thule Island, South Sandwich Islands.

The spread of cattle egrets from the Old World to the New World is extensively documented (e.g. Crosby, 1972). Strange (1979) has reviewed occurrences in the Falklands Islands since the first record there in 1976 and speculated that they may eventually breed. While they are unlikely to breed at South Georgia due to the harsh environment (indeed many of the birds reported were subsequently found dead) they are likely to continue to occur in March and April when they tend to irrupt from their South American breeding grounds which now extend to south-central Argentina and 39°S in Chile.

\* South Georgia pintail (*Anas georgica*)

Speckled teal (*Anas flavirostris*)

The breeding colony discovered by Weller and Howard (1972) still persists in Cumberland Bay. There have been several recent records at Bird Island and it is not clear whether they represent dispersal from Cumberland Bay or the arrival of new colonists from South America.

Chiloe wigeon (*Anas sibilatrix*)

Previous records are of one at Bird Island in January 1972 and three in King Edward Cove, Cumberland Bay in early 1974 (Prince and Payne, 1979). Further records are also from King Edward Point where one was reported in June 1977, 24 July 1978 and at intervals until the October of that year. It is possible that the bird first seen in 1977 spent the austral summer in the Cumberland Bay area, before returning to King Edward Cove at the onset of winter, when large flocks of *A. georgica* also congregate there to feed.

\* Blue-winged teal (*Anas discors*)

\* Purple gallinule (*Porphyryla martinica*)

Solitary sandpiper (*Tringa solitaria*)

A bird was seen feeding in the stream near the Bird Island field station on 8 and 9 December 1981. This is the second record of this species at South Georgia, the first being at the same site in 1975.

White-rumped sandpiper (*Calidris fuscicollis*)

There are three records to add to the four previously reported. A single bird was seen near the Bird Island field station between 19 and 24 November 1978. On 18 December 1978 a bird seen in Wanderer Valley, Bird Island was considered to be a different individual. In December 1980 a bird was flushed from tussock grassland on Bird Island. This species is the commonest wader visiting South Georgia and is an abundant wintering species in the Falkland Islands.

Pectoral sandpiper (*Calidris melanotos*)

Since the first record, from Bird Island in 1971, there has only been one report, from the same site, on 1 January 1982, when a specimen (an adult female) was collected. This species has been reported in the Falkland Islands (Prince and Payne, 1979) and as far south as Rothera Point, Antarctic Peninsula at 67°34'S, 68°08'W (T. W. Salmon, pers. comm.).

Little stint (*Calidris minuta*)

A specimen of this species was collected at Bird Island on 28 December 1977 by P. A. Prince and its identity confirmed by reference to skins at the British Museum and by J. Marchant of the British Trust for Ornithology. This is not only a first record for South Georgia but also the first report for South America (and we have been unable to trace any record from North America) of a species which breeds in north-central Siberia and winters mainly in India and Africa. It is therefore the first vagrant at South Georgia that is likely to have arrived from the east, against the usually prevailing winds. The bird was probably a first year immature and its weight of 30g compares well with weights of birds caught on their wintering grounds in Kenya (Pearson and others, 1970).

\* Sheathbill (*Chionis alba*)

Sub-Antarctic skua (*Catharacta lonnbergi*)

A widespread breeding species. At Bird Island the breeding population has increased from 175 pairs in 1958-59 to 350 pairs in 1976-77 (Croxall and Prince, 1980) and to over 400 pairs in 1980 (I. Hunter, unpublished). This increase has been attributed to the rapidly increasing fur seal population on Bird Island (Croxall and Prince, 1980) and we have no evidence of similar changes elsewhere on South Georgia.

Dominican gull (*Larus dominicanus*)

Widespread in small numbers but concentrated as a breeding species in the larger fjords where there are particularly extensive kelp beds.

Olrog's gull (*Larus atlanticus*)

With the recognition that the two races of *Larus belcheri* are specifically distinct (Devillers, 1977) the only South Georgia record, of an immature *L. (b.) atlanticus* in 1949, must now be referred to the endemic, and very local, Argentinian species, now known as Olrog's Gull.

Antarctic tern (*Sterna vittata*)

A widespread breeding species for which we have rather little detailed information. Forty breeding sites have been reported from all parts of South Georgia but only three colonies containing more than 25 pairs are known and the total population is unlikely to exceed 2500 pairs.

Arctic tern (*Sterna paradisaea*)

The first confirmed records for this species at South Georgia are of three specimens collected in Stromness Bay on 7 April 1977 from RV *Hero* (Jehl and others, 1978). Since then a few more sightings of this northern hemisphere breeding species have been made at sea some distance off South Georgia.

Swallow (*Hirundo rustica*)

There are three records to add to the previous two mainland reports for South Georgia. A single immature was seen flying around the Bird Island field station on 26 November 1982. Two more immatures were seen the following day alighting on the ground in the vicinity of the gentoo penguin colony at Gony Point, Bird Island. As with the previous records for South Georgia these almost certainly refer to the North American race *H. r. erythrogaster*.

European house martin (*Delichon urbica*)

Two birds of this species were seen at Schlieper Bay on 4 April 1982 by P. Martin. Good views and descriptions were obtained which exclude the possibility of confusion with superficially similar South American species, such as Chilean swallow, *Tachycineta leucopyga*. House martins are widespread in the Palaearctic region, winter abundantly throughout Africa but have not previously been recorded in South America.

South Georgia pipit (*Anthus antarcticus*)

Pye and Bonner (1980) presented a map, summarizing records compiled by the South Georgia breeding bird survey, to show that this species is nowadays virtually confined to areas free of brown rats and is thus particularly abundant on offshore islands and areas of the south coast where glaciers have formed barriers to the spread of rats.

\* Eastern kingbird (*Tyrannus tyrannus*)

The South Georgia avifauna now consists of 30 breeding species, and 36 non-breeding visitors. Most of these are rare vagrants but several species undoubtedly occur more regularly. Cattle egrets and white-rumped sandpipers can probably now be expected to occur annually. Antarctic fulmars, Kerguelen petrels and great shearwaters are certainly of regular occurrence in small numbers and the same is

probably true of narrow-billed prions, although problems of field identification will make this difficult to substantiate.

Of the two species that Payne and Prince (1979) regarded as virtually certain to pass through South Georgia waters, Arctic tern has now been recorded but acceptable records of Antarctic skua *Catharacta maccormicki* are still lacking.

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