

RARE, VAGRANT AND INTRODUCED BIRDS AT AMSTERDAM AND SAINT PAUL  
ISLANDS, SOUTHERN INDIAN OCEAN

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INTRODUCTION

Amsterdam Island (37 50S, 77 35E) and Saint Paul Island (38 43S, 77 32E) lie in the centre of the southern Indian Ocean. They are amongst the most isolated islands in the world, 3 200 km from Australia, 3 000 km from Madagascar, 4 200 km from South Africa and 3 300 km from the Antarctic Continent. The nearest land is Kerguelen Island, some 1 450 km to the southwest (Fig. 1a). These two volcanic islands are very small in area: 55 sq. km and 8,1 sq. km for Amsterdam and Saint Paul respectively.

The climate is temperate with a mean annual temperature of 13,7°C and a small seasonal variation. The sea water temperature varies from 12 to 17°C, according to the season. On Amsterdam Island the mean yearly rainfall is 1 120 mm and snow is rare and occurs on the summit of the island (881 m) only in winter. Westerly winds are predominant (Fig. 1b). These two islands lie in the subtropical water zone of the Indian Ocean, some 500 km north of the Subtropical Convergence.

Despite the presence of a permanent station (La Roche Godon) on Amsterdam Island since 1950, the avifauna of these islands remained poorly known until recent years (Segonzac 1972, Jouventin *et al.* 1983, Roux *et al.* 1983, Jouventin *et al.* 1984, Tollu 1984). Nowadays the most abundant species breeding on these islands (total population estimates combined for both islands) are: Northern Rockhopper Penguin *Eudyptes chrysocome moseleyi* with approximately 55 000 pairs (Jouventin *et al.* 1984); Indian Ocean Yellownosed Albatross *Diomedea chlororhynchos bassi* with 37 000 pairs (Jouventin *et al.* 1983); Sooty Albatross *Phoebastria fusca* with approximately 250 pairs breeding each year (unpubl. data); Fleshfooted Shearwater *Puffinus carneipes* with about 600 pairs (Roux 1985); and Antarctic Tern *Sterna vittata* with about 400 pairs (Segonzac 1972, unpubl. data). These abundant species are not discussed further in this paper.

METHODS

Bird observations have been carried out regularly on Amsterdam Island the whole year round in 1973, 1978, 1979 and from September 1981 to December 1985 by one to three observers each year. Four short visits were made to Saint Paul Island during summer 1979, January 1981, December 1984 and February 1985. At-sea observations from ships in the vicinity of the two

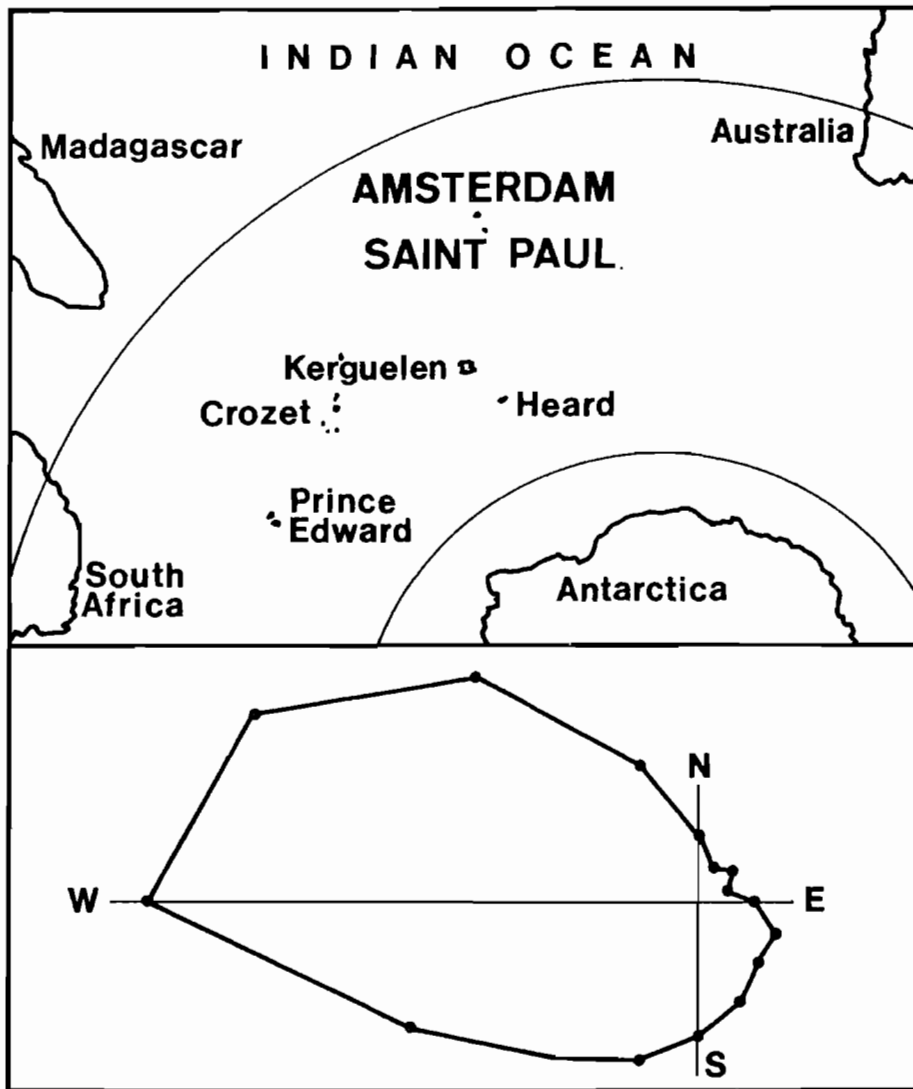


Figure 1

Geographical position of Amsterdam and Saint Paul Islands and wind direction frequency diagram for Amsterdam Island.

islands (within 100 km offshore) were made between 1979 and 1985 (Jouventin *et al.* 1982, Stahl *et al.* in press).

#### RARE BREEDING SPECIES

##### Amsterdam Island Albatross *Diomedea amsterdamensis*

Since 1978 an average of 4,25 chicks per year have fledged (Table 1) and 13 different pairs (identified by means of monel metal bands, numbered Darvic bands and photographs) have bred at least once since 1981. At present the total population is estimated at 50 individuals including immatures. Our results confirm the minute population size already suspected by others (Roux *et al.* 1983, Jouventin & Roux 1984).

##### Broadbilled Prion *Pachyptila vittata macgillivrayi*

Once extremely abundant on both islands (Jouanin & Paulian 1960, Segonzac 1972), this endemic prion was supposed to be extinct, except possibly on Roche Quille (Ninepin Rock) off Saint Paul Island, which is the last site free from rats *Rattus* spp. where Paulian observed prions in flight in January 1956 (Segonzac 1972) and where Tollu (1984) has recently found a small breeding population (less than 150 pairs). This prion has not been recorded since 1951 on Amsterdam Island (Paulian 1953) where a few birds have been observed landing on a vegetated cliff in October and December 1981. A few pairs (less than 10) might still breed at this site on Amsterdam Island.

These birds, observed on Amsterdam Island in 1981 and around Roche Quille in December 1984 and February 1985, were very similar in appearance to Salvin's Prion *P. salvini* with a distinct wide blue bill and therefore easily recognized from the nominate Broadbilled Prion *P. v. vittata* with its steel grey bill (Roux *et al.* in press).

##### Fairy Prion *Pachyptila turtur*

This species was recently found breeding on Roche Quille off Saint Paul Island (Tollu 1984). It seems to be restricted to this site, the last free from predators. The remnant population found is minute, probably less than 10 pairs (after Tollu 1984).

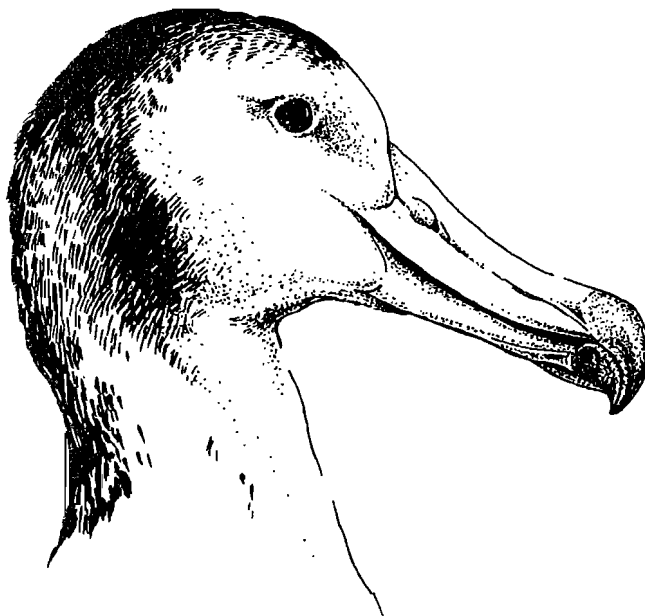
##### Softplumaged Petrel *Pterodroma mollis*

The Softplumaged Petrel is present at sea all year round in the vicinity of Amsterdam and Saint Paul Islands. It has been seen on land 11 times between July and December in 1981, 1982 and 1983, mainly on the slopes of Mont du Fernand (at 650 m) on Amsterdam Island. Aerial displays were heard at night in the same area in 1981, 1983 and 1984 on eight occasions between October and January. Furthermore, wings and heads of Softplumaged Petrels freshly killed by feral cats *Felis catus* were found on five occasions between December 1981 and December 1984 at the same site and on the northwestern sector of Amsterdam Island.

TABLE 1

BREEDING PRODUCTION OF THE  
 AMSTERDAM ISLAND ALBATROSS,  
 1978 - 1985

Year	Number of fledglings
1978	5
1979	3
1980	0
1981	8
1982	1
1983	5
1984	5
1985	7
1978-1985	34



*D. amsterdamensis*  
 (after Roux et al 1983)

by McMahon 1986

Although no occupied burrow could be found, this species is believed to breed in small numbers on Amsterdam Island.

Grey Petrel *Procellaria cinerea*

Regularly seen at sea in April and September, this species has been observed on land on Amsterdam Island twice in February and March 1982 and 14 times during 1983, particularly between March and June. Grey Petrels have been seen landing on vegetated cliffs on the east coast of this island during the breeding season in 1982 and 1983. Grey Petrels have been previously recorded at sea in the area (Velain 1877) and on land on Amsterdam Island (Paulian 1953) and are suspected to breed in small numbers of this island.

Little Shearwater *Puffinus assimilis*

This species, observed in flight off Saint Paul Island in January 1956 (Segonzac 1972), April 1964 (Gill 1967) and April 1979 (Jouventin *et al.* 1984), has been found breeding in small numbers on Roche Quille by Tollu (1984).

Whitebellied Stormpetrel *Fregetta grallaria*

Observed twice off Amsterdam Island since 1973 in May and November, and a few times previously (Gill 1967, Segonzac 1972), this species has been found breeding in very small numbers (probably less than 10 pairs) on Roche Quille in 1972 (Tollu 1984).

Subantarctic Skua *Catharacta antarctica*

Hunting activities by man were responsible for the extreme reduction of the Amsterdam Island population of skuas which numbered only a few pairs in 1970 (Segonzac 1972). Officially protected since 1972, an increase of the population has been noted recently with about 16 pairs nesting in 1983. In February 1985, a few skuas were present on Saint Paul Island, but breeding could not be proved.

Sooty Tern *Sterna fuscata*

Three sightings of Sooty Terns were made from the coast of Amsterdam Island in November 1983. This species was observed in December 1972 and found nesting in December 1982 (one nest) on Roche Quille (Tollu 1984). On 21 December 1985 one pair of Sooty Terns, presumably nesting, was observed at this same site off Saint Paul Island.

## SEABIRD VISITORS

### Wandering Albatross *Diomedea exulans*

This species is regularly observed from the coast and from ships in the vicinity of the two islands all year round (Jouventin *et al.* 1982, Stahl *et al.* in press).

### Blackbrowed Albatross *Diomedea melanophris*

Twentyfive coastal observations of Blackbrowed Albatrosses have been noted since 1979 during all months of the year except November, December and January. This species is rare in these waters except during April, July and August, when it becomes fairly common. Gill (1967) and Segonzac (1972) have previously recorded this species during February, March and April.

### Shy Albatross *Diomedea e. cauta*

Since 1979, 13 coastal observations of this species have been noted between March and October. This species is a regular visitor, although rare during summer (only two observations in December). Segonzac (1972) recorded this species in March around Saint Paul Island:

### Atlantic Ocean Yellownosed Albatross *Diomedea e. chlororhynchos*

A Yellownosed Albatross of the Atlantic Ocean race was observed on Amsterdam Island amongst a large *D. e. bassi* colony on 31 January and 4 February 1985. This bird was easily recognized by its grey hind-neck, nape and lores and a well marked black eyebrow. This is the first record of this subspecies from these islands.

### Giant petrels *Macronektes giganteus* and *M. halli*

Giant petrels *Macronektes* spp. are regular but uncommon visitors from January to June (with a minimum in February-March), and are common from July to December. Fiftyseven coastal observations of between one and 54 individuals of both species were noted during the two-year period 1982-1983 (the Northern Giant Petrel *M. halli* being more frequent). Two observations of the white phase of the Southern Giant Petrel *M. giganteus* were noted in July.

November and December observations refer to large groups of birds (usually more than 20 individuals) and from one to five individuals for the rest of the year. Both species are occasionally seen on land but have never been recorded breeding.

Antarctic Fulmar *Fulmarus glacialisoides*

In October 1973 one individual was observed off Saint Paul Island, feeding among a group of Whitechinned Petrels *Procellaria aequinoctialis*, this being the only record of this species in this area.

Pintado Petrel *Daption capense*

Small numbers of Pintado Petrels were regularly observed between July and October. Only one observation (in October 1973) refers to more than two birds, when a group of more than 13 individuals was present off Saint Paul Island. Harris (1982) also recorded this species off the same island on 26 November 1980.

Greatwinged Petrel *Pterodroma macroptera*

This species has been seen regularly offshore from February to April and between July and September, although only in small numbers (Stahl *et al.* in press).

Whiteheaded Petrel *Pterodroma lessoni*

Although never recorded in coastal observations, this rare visitor (less than 10 records during this study) has been seen offshore in April, September (Stahl *et al.* in press) and November (Harris 1982).

Whitechinned Petrel *Pterodroma aequinoctialis*

Whitechinned Petrels were common around Amsterdam and Saint Paul Islands during summer (from September to April) and occasionally recorded in large numbers (50 - 100 individuals at a time). No bird of the spectacled Atlantic Ocean race *P. a. conspicillata* was recorded during this study.

Cory's Shearwater *Calonectris diomedea*

A single Cory's Shearwater was observed at sea between Saint Paul and Amsterdam Islands on 21 December 1985, the only record for the species in this area (Harrison 1978).

Sooty Shearwater *Puffinus griseus*

This species has been regularly observed from the coast in small numbers (one to five individuals) from July to August. It has also been regularly recorded offshore in April (Stahl *et al.* in

press).

Wilson's Stormpetrel *Oceanites oceanicus*

Wilson's Stormpetrel was regularly seen offshore during February, March and April. A few records were noted in December (1973 and 1983). A specimen (*O. o. parvus*) was collected on Amsterdam Island in December 1951 (Paulian 1953). Paulian also observed this species in April 1956 (Segonzac 1972), Gill (1967) in April 1964 and Harris (1982) in November 1980.

Blackbellied Stormpetrel *Fregetta tropica*

A few records of this species were made from ships in this area during April (Stahl *et al.* in press).

Common Divingpetrel *Pelecanoides urinatrix*

A dead Common Divingpetrel was found on land in December 1984, the second record of this species on Amsterdam Island (Segonzac 1972). Divingpetrels have never been observed at sea in the vicinity of the two islands during this study and these records possibly refer to ship-assisted birds. On numerous occasions, injured as well as healthy divingpetrels were found lodged in lifeboats of the M.S. *Marion-Dufresne* from one to four days after departure from Kerguelen Island.

Unidentified skua *Stercorarius* sp.

A skua seen at sea between the two islands on 21 December 1985 was either an Arctic Skua *Stercorarius parasiticus* or a Pomarine Skua *P. pomarinus*.

Arctic Tern *Sterna paradisaea*

A specimen which was collected on 29 November 1951 on Amsterdam Island (Paulian 1952, 1953), is the only record of this species around Amsterdam and Saint Paul Islands.

Cape Gannet *Sula capensis*

Since the observation of an unidentified gannet on Amsterdam Island on 7 March 1970 (Segonzac 1972), another 13 records of Cape Gannets were noted between mid-October and the beginning of February in 1979, 1981, 1984 and 1985 (Fig. 2). At least two different individuals were observed in February 1984 and three in December 1985. These records refer to adult birds with black tails and long gular stripes and therefore are of Cape



Gannets. Harris (1982) also noted this species between the two islands on 26 November 1980. These records are believed to be the most easterly regular sightings of this species.

#### LAND AND SHORE BIRD VAGRANTS

##### Cattle Egret *Bubulcus ibis*

White herons which were seen twice in 1950 and again in 1951 on Amsterdam Island (Paulian 1953) might have been Cattle Egrets (Jouanin & Paulian 1954, Prévost & Mouglin 1971, Segonzac 1972). No further records of this vagrant are available for Saint Paul and Amsterdam Islands.

##### Blackcrowned Night Heron *Nycticorax nycticorax*

In October 1969, a Blackcrowned Night Heron was observed and photographed near the station on Amsterdam Island. Another two herons in flight, seen in April 1956, might have been of the same species (Segonzac 1972). This species has not been subsequently recorded on these islands.

##### Eleonora's Falcon *Falco eleonora*

On 7 January 1982 on Amsterdam Island a single male Eleonora's Falcon was observed flying, then sitting on the roof of one of the buildings of the station. It was seen again one hour later flying above the chicken-run near the station. This species was again observed perched on the M.S. *Marion-Dufresne* en route from Amsterdam Island to Reunion Island on 24 January 1982 at 30S, 67E (Beaux & Voisin 1983, A.D. Hes pers. comm.).

##### Turnstone *Arenaria interpres*

During the study period, Turnstones were recorded on Amsterdam Island (13 observations) between the beginning of October and mid-November (Fig. 2), and up to seven individuals were seen together. This species was also observed on Saint Paul Island at the beginning of February 1974 (nine individuals), in March 1971 (Segonzac 1972) and in November 1980 (Harris 1982).

##### Whimbrel *Numenius phaeopus*

One individual was seen twice in October 1979 and once on 1 December 1979 on Amsterdam Island. Segonzac (1972) observed two individuals of this species on Saint Paul Island at the beginning of February 1970. Velain (1877) saw a "curlew" on this same island in November 1874 and this record is believed to be of a Whimbrel (Segonzac 1972).

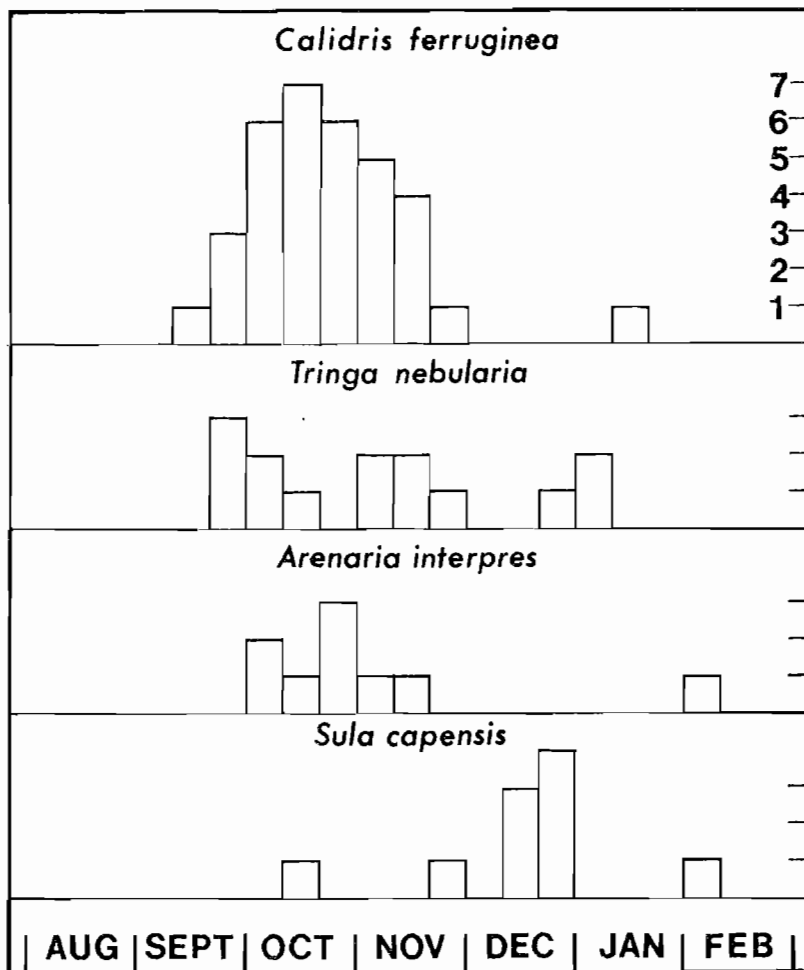


Figure 2

Seasonal occurrence of some regular visitors during a seven-year survey (1978, 1979 and 1981-1985). Numbers of years (out of seven) when the species were present on Amsterdam and/or Saint Paul Island per 10-day block.

Bartailed Godwit *Limosa lapponica*

One individual remained on Amsterdam Island between 14 and 20 November 1973. This is the first record of this species from these islands.

Greenshank *Tringa nebularia*

Greenshanks have been observed regularly on Amsterdam Island (16 records since 1978) from the end of October to the beginning of January (Fig. 2) in small numbers (one to five individuals). Greenshanks have been recorded a few times previously on Amsterdam Island (Jouanin & Paulian 1954) and once in March 1971 on Saint Paul Island (Segonzac 1972).

Common Sandpiper *Tringa hypoleucos*

Single Common Sandpipers were observed on Amsterdam Island in September and October 1973 and in August 1983. One specimen was collected in December 1953 and two in October 1956 (Segonzac 1972).

Greytailed Tattler *Tringa brevipes*

Three individuals were present from 25 October to 20 November 1973 on Amsterdam Island. This is the first record on these islands for this regular migrant to Australia (Pizzey & Doyle 1980).

Knot *Calidris canutus*

This species was recorded in 1979 (one individual) during summer and identified from photographs taken in November 1973 (two individuals). These are the first records of this species on Amsterdam Island.

Sanderling *Calidris alba*

The only record of this vagrant is a series of photographs taken in October 1973 of a single bird on Amsterdam Island.

Curlew Sandpiper *Calidris ferruginea*

This species is the most regular visiting shorebird. It has been observed on Amsterdam Island every year since 1973 between mid-September and the end of November with one record in January (Fig. 2), sometimes in fairly large numbers e.g. 29 individuals

in October 1979 and 20 in October 1982. Segonzac (1972) also recorded this species in October 1969 (five individuals) on Amsterdam Island.

#### Lesser Cuckoo *Cuculus poliocephalus*

This small cuckoo was observed and photographed in November 1982 while feeding on the ground near the station on Amsterdam Island. This is the only record of this species in the area.

#### Redchested Cuckoo *Cuculus solitarius*

On Amsterdam Island a single Redchested Cuckoo was present at the station from 21 December 1984 to the first week of January 1985.

#### Unidentified vagrants

A wader seen in October 1969 (two individuals) might have been a Whitetailed Plover *Chettusia leucura* (Prévost & Mougín 1970, Segonzac 1972).

A single small wader, present in November 1973 on Amsterdam Island was either a Little Stint *Calidris minuta* or a Rednecked Stint *C. ruficollis*.

An unidentified swift *Apus* sp. was seen in December 1857 on Saint Paul Island (von Pelzeln 1861, Segonzac 1972).

A small woodpecker remained on Amsterdam Island from 9 to 16 May 1984. According to its size and colouration, it was probably an individual of the genus *Campethera*.

### INTRODUCED SPECIES

#### Kerguelen Pintail *Anas eatoni*

Kerguelen Pintails were introduced to Amsterdam Island in 1955 (one pair), 1956 (12 individuals), 1969 (five or six pairs) and 1970 (five or six pairs), and breeding has been noted in 1956 (one chick found in May), 1964 (eight chicks) and at the end of 1970 (Segonzac 1972). A few individuals were observed during winter in 1979, then two in December 1979 and two on 24 January 1980. Despite complete surveys of Amsterdam Island in 1981 and in following years this species has not been recorded subsequently.

A pair of Kerguelen Pintails was observed on Saint Paul Island in 1970, probably vagrants from Amsterdam Island (Segonzac 1972); this constitutes the only record for the species on this island. Therefore the Kerguelen Pintail disappeared from these

islands during 1980, 24 years after the first and 10 years after the last introduction and despite successful breeding. Feral cats and Norway Rats *Rattus norvegicus* have most probably played a major role in this extinction of this ground-nesting species.

#### Common Waxbill *Estrilda astrild*

A few birds were imported from Reunion Island in 1977 and released at the station on Amsterdam Island. Two dead birds were found in the vicinity of the station in 1978 during winter but breeding was suspected the same year. In 1981 and 1982 the total population was estimated to be 60 to 80 individuals and 11 unoccupied nests have been found in trees or cliff-faces in the vicinity of the station. Observations in the 1984/1985 summer showed that Common Waxbills occur in 125 ha in the northeastern sector of the island and have been noted as far as 3,6 km from the station and up to 250 m a.s.l.. The population is thought to be still increasing.

### DISCUSSION

Recent data summarized in Table 2 show that 14 species of seabirds breed on Amsterdam and Saint Paul Islands, nine of them only in small numbers. Introduced mammalian predators, particularly feral cats and Norway Rats on Amsterdam Island and Black Rats *Rattus rattus* on Saint Paul Island, are believed to have played a major role in the reduction or eradication of the smaller species from the two islands (Segonzac 1972, Jouventin *et al.* 1984, Tollu 1984). The feral cattle *Bos taurus* population of Amsterdam Island (introduced in 1871) is responsible for habitat degradation and erosion and at present no birds nest in the area occupied by the herd (more than 70 % of the island's area).

Nineteen species of seabirds have been recorded as visitors, most of them breeding in the Antarctic and Subantarctic Regions. Three species, Cory's Shearwater, a *Stercorarius* skua and the Arctic Tern, are Northern Hemisphere migrants, and another one, the Cape Gannet, an African resident.

At least 18 species of land and shore birds have been recorded on these islands, 14 of them since 1973. Most of them are Palaearctic waders (11 species), the others being African residents or migrants. Similar surveys on other oceanic islands of the Indian Ocean show the same pattern (Staub 1976, Burger *et al.* 1980, Berruti & Schramm 1981, Barre & Barau 1982, Newton *et al.* 1983, Thomas 1983, Stahl *et al.* 1984). The paucity of true land bird species visiting Amsterdam and Saint Paul Islands is noticeable and obviously related to their geographical isolation.

Despite the extreme geographical isolation of these islands, four species are regular stragglers, all of them being waders migrating from the Palaearctic (Turnstone, Greenshank, Common Sandpiper, Curlew Sandpiper).

During this eight-year survey, at least 157 individuals of

TABLE 2  
CHECKLIST OF THE BIRDS RECORDED ON AMSTERDAM AND SAINT PAUL ISLANDS

Species	Status*	Species	Status*
Northern Rockhopper Penguin	BR	Wandering Albatross	V
Amsterdam Island Albatross	br	Blackbrowed Albatross	V
Shy Albatross	V	Atlantic Ocean Yellownosed Albatross	V
Indian Ocean Yellownosed Albatross	BR	Sooty Albatross	BR
Southern Giant Petrel	V	Northern Giant Petrel	V
Antarctic Fulmar	rv	Pintado Petrel	V
Macgillivray's Broadbilled Prion	br	Fairy Prion	br
Greatwinged Petrel	V	Whiteheaded Petrel	rv
Softplumaged Petrel	br	Whitechinned Petrel	V
Grey Petrel	br	Cory's Shearwater	rv
Fleshfooted Shearwater	BR	Little Shearwater	br
Sooty Shearwater	V	Wilson's Stormpetrel	V
Blackbellied Stormpetrel	V	Whitebellied Stormpetrel	br
Common Divingpetrel	rv	Cape Gannet	V
Cattle Egret	rv	Blackcrowned Night Heron	rv
Eleonora's Falcon	rv	Turnstone	V
Whimbrel	rv	Bartailed Godwit	rv
Greenshank	V	Common Sandpiper	V
Greytailed Tattler	rv	Knot	rv
Sanderling	rv	Curlew Sandpiper	V
Unidentified wader <i>Calidris</i> sp.	V	Whitetailed Plover (?)	rv
Unidentified skua <i>Stercorarius</i> sp.	rv	Antarctic Tern	BR
Arctic Tern	rv	Sooty Tern	br
Lesser Cuckoo	rv	Redchested Cuckoo	rv
Unidentified Swift <i>Apus</i> sp.	rv	Unidentified woodpecker <i>Campethera</i> sp.(?)	rv
Kerguelen Teal Introduced, extinct since 1980		Common Waxbill Introduced and breeding	

\* BR: breeding in large numbers; br: breeding in small numbers (less than 150 pairs); V: regular visitor; rv: rare vagrant (one to ten records). After Paulian 1953, Segonzac 1972, Jouventin *et al.* 1983, Roux *et al.* 1983, Jouventin *et al.* 1984, Tollu 1984, Roux 1985, Stahl *et al.* in press, this study.

nonmarine vagrants (58 13 species) have been observed, most of them (153) being waders. These nonmarine visitors occur on Amsterdam and Saint Paul Islands principally in summer between September and March, with maximum numbers in October. A different result was found on Marion Island where maximum numbers occurred in March (Newton *et al.* 1983).

Of two introduced species, Kerguelen Teal and Common Waxbill, only the latter species survives.

All the small species of seabirds breeding on these islands (except for the cliff-nesting Antarctic Tern) are on the verge of extinction or are now restricted to Roche Quille which is the only site free of introduced predators. With only four successful breeding pairs per year and a total population of .. 50 individuals, the Amsterdam Island Albatross is the rarest seabird in the world and is considered to be extremely vulnerable. At present its breeding habitat is threatened by the feral cattle population. Therefore first priority should be given to eradicating the feral cattle and cat populations from Amsterdam Island and to halting all further introduction of alien animals.

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