

# OBSERVATIONS OF BIRDS AND SEALS AT ANVERS ISLAND, PALMER ARCHIPELAGO, IN 1955-57\*

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THE Falkland Islands Dependencies Survey established a station at Arthur Harbour (lat. 64°46'S., long. 64°05'W.) on the south coast of Anvers Island on 28 February 1955 and evacuated it on 10 January 1958. The station was primarily concerned with topographic survey and geology, but from the date of landing until 28 November 1957 a diary of natural history observations was kept by the resident personnel, and a small series of specimens was collected. The majority of observations were made in the immediate vicinity of the station and the adjacent small islets, but occasional notes record species seen by sledge parties farther afield. From this diary it is possible to compile a check list of the birds and seals known to breed in and visit the region, and to indicate the approximate chronology of the life cycles of some of them. The results of this compilation are presented here in the hope that they will provide a working basis for future, more thorough investigations.

Anvers Island, the largest of the Palmer Archipelago, is rectangular in shape, with its long axis trending from north-east to south-west. It is about 40 miles (64 km.) long and 30 miles (48 km.) wide, and most of the island is covered by permanent snow and ice. The eastern half of the island is a complex of mountain ranges which culminate in Mount Français (9,060 ft.; 2,761 m.), while the western half is covered by an ice piedmont rising from coastal ice cliffs to a height of about 2,000-3,000 ft. (610-914 m.) where it flanks the mountains. Much of the coastline is made up of ice cliffs, but there are numerous rocky promontories and small offlying rocky islets. On some of these yellow, reddish and green moss carpets are fairly prominent and grass (probably *Deschampsia antarctica* Desv.) has been recorded as growing and flowering on Litchfield and Humble Islands. The topography, history of scientific study, and geology of the island are reviewed by Hooper (1962).

## AVIFAUNA OF THE ARTHUR HARBOUR REGION

### 1. *Pygoscelis papua* (Forster); gentoo penguin

Gentoo penguins have not been recorded as breeding anywhere on Anvers Island; the nearest known colony is at Port Lockroy, Wiencke Island. Individuals and small groups of gentoos, however, were commonly sighted at Arthur Harbour especially during spring and autumn. Over the three years of observations the months of December, January and February passed without gentoos being recorded. Birds were seen fairly regularly in March, April and May (the period of dispersal from the breeding grounds), and less commonly in June, July, August and September. These winter records probably always occurred when there was open water nearby. Regular records of gentoos were made in October and November, probably during their return to the colonies to the eastward.

### 2. *Pygoscelis adeliae* (Hombron & Jacquinot); Adélie penguin

The Adélie penguin is the only abundant breeding species on the islands in Arthur Harbour. Approximately 12,000 to 15,000 pairs were estimated to breed here in 1955, while large colonies were also noted on Dream Island and the Joubin Islands to the west. The main return of the species to its breeding grounds seems to occur in mid-October (before 21 October 1955; on 15-16 October 1956), but occasional birds were sighted around the station during August and September and in 1957 about 50 had already returned to the nesting area by 4 October. The colonies were estimated to be at full strength by 24 October 1956, and on 4 November 1957 they had paired and showed strong territorial behaviour and nest-building

\* Compiled by the author from observations made by personnel resident at the Arthur Harbour station, Anvers Island, in 1955-58.

activity. Several attempts at copulation were observed. Eggs were seen first on 23 November 1955, 20 November 1956 and 12 November 1957. These dates, recorded after casual visits rather than as a result of careful studies, are probably all later than the actual time of commencement of laying. About 25 per cent of the eggs had hatched on 23 December 1955. On 6 January 1956 the chicks were well grown but had not begun to gather in crèches, and a few eggs were still being incubated. The exodus from the colonies occurred on 13–14 February 1957 and in that year most birds had gone by 16 February. However, in this area penguins do not totally disappear during autumn and winter. One Adélie penguin was seen on 25 June 1956 and “quite a few” on 31 July 1956. Similarly, in 1957, 70 to 80 Adélie penguins were ashore on an islet in the harbour on 27 March and several were seen feeding in the area. About 1,000 were seen ashore on 2 April and many birds remained until 22 April. Only a few were present on 8 May but by 19 May numbers had risen again to 300 or 400 and parties of 30 or 40 were fishing about the islands. During this period the sea was largely clear of ice, apart from a little brash; when sea ice formed numbers sharply declined.

### 3. *Pygoscelis antarctica* (Forster); chinstrap penguin

Chinstrap penguins were recorded in small numbers around Arthur Harbour during November, December and January, and in January 1956 some were present among the Adélie penguin colonies on the nearby islands. There are no definite records of their breeding there. Two chinstrap penguin nests were found in an Adélie colony on Dream Island on 5 January 1957 and on 4 November 1957 a sledge party reported about 30 birds on an islet off the west coast. It is suggested that small colonies of the species occur in several places along that coast (where they are said to be the only breeding penguins), but there are no detailed supporting notes.

### 4. *Eudyptes chrysolophus* (Brandt); macaroni penguin

On 6 January 1956 a party visiting Humble Island in Arthur Harbour recorded, in addition to breeding Adélie penguins and “quite a few chinstraps”, “one rockhopper penguin with the bright yellow eye lashes”. It is most improbable that this bird was in fact a rockhopper penguin (*Eudyptes crestatus*), since this sub-Antarctic species is not known to breed south of Isla Diego Ramirez (lat. 56°30'S., long. 68°44'W.) (Murphy, 1936). In contrast, there is a macaroni penguin colony on Deception Island and occasional pairs and individuals are known to occur in colonies of other species in the South Orkney and South Shetland Islands. The macaroni penguin is unquestionably the most likely crested penguin to reach Anvers Island.

### 5. *Diomedea* sp.; albatross

On 27 January 1957 “two albatrosses” were seen just north of the Joubin Islands. Confusion with the white-plumaged form of giant petrel, with which the observers were familiar, is unlikely but identification of the bird seen is impossible on the information given.

### 6. *Macronectes giganteus* (Gmelin); giant petrel

The giant petrel breeds in considerable numbers on the rocky peninsulas and islets along the south coast of Anvers Island. There are notes of apparent activity at the nest site even in mid-winter; on 30 July 1955 a bird was seen digging a nest clear of snow and on 13 August two birds beside a nest were noted as calling to one flying overhead. On 15 August 1955 several apparent pairs were present at nest sites; however, a fresh fall of snow caused their disappearance on 18 August. On the 29 August, however, birds were back in the breeding area and on 3 September there was “considerable activity”. In 1956 the return to the colonies occurred later, the birds being described as “numerous” in the area on 14 September; a few were near nests on 16 October and pairs were in occupation of nests on 20 October. Mating was observed on sea ice, away from the nests, on about 15 October 1957. Eggs were seen first on 25 November 1955 and 20 November 1956, and were general in the colony on the peninsula by the station on 24 November 1957. At least some of the birds sat very tight on

the nest, and one, on 25 November 1955, was not disturbed even when pushed off the nest by a boot. Predation of eggs by skuas was noted on 28 November 1955.

The first chicks were seen on 17 January 1956 and 8 January 1957 (the latter in a colony on an island in Biscoe Bay). Chicks were "sizeable" by 16 April 1956 and many of them were banded between 8 and 20 March 1957. In 1956 the main exodus of chicks occurred at Norsel Point by 3 May, but a few still remained on the north side of the peninsula by the station on 10 May. These dates are earlier than those recorded in 1955, when it was noted on 16 May that most young giant petrels could waddle down to the sea but not fly. In 1957 giant petrels were present in greatly reduced numbers on 14 May.

This species remained around the station throughout autumn and winter, although the numbers fluctuated widely. About six were seen on 4 June 1957; one only on 12 June, one again on 24 June, two on 26 June (feeding on kitchen refuse from the station), three on 29 June, "a few" on 1 July and four on 8 July. In this winter (1957) they were commoner in August and by late September there were many birds in the area. A similar pattern of diminished numbers but of a small residual population in winter was recorded in the other years.

7. *Fulmarus glacialis* (Smith); silver-grey fulmar

This species was seen in the neighbourhood of the station once only, on 20 March 1956, when a single bird was feeding on seal blubber in the bay. In December 1956 a sledge party saw several flying off the north-west coast of Anvers Island.

8. *Daption capensis* (L.); cape pigeon

The cape pigeon is also an uncommon species near Arthur Harbour, although individuals and small flocks have been seen periodically in spring, autumn and winter. There is only one record for the period between November and April, of a single bird in the bay on 18 February 1957.

9. *Pagodroma nivea* (Forster); snow petrel

Like the cape pigeon, this bird is not known to breed near Arthur Harbour and it has not been recorded there during the summer. Between 27 March and 5 November there are fairly frequent records of individuals and small groups in the area and in winter the species is one of the more prominent components of the avifauna. There is no evidence of breeding colonies on Anvers Island, apart from the sighting of two birds on 1 December 1956 flying above Mount Français. This suggests that small numbers may breed high up in the eastern ranges of the island.

10. *Thalassoica antarctica* (Gmelin); Antarctic petrel

Another rarely seen species recorded only in winter. A small flock was observed feeding in Arthur Harbour on 14 September 1957 and by 19 September numbers had increased; other birds at this period were observed flying north.

11. *Oceanites oceanicus* Kuhl.; Wilson's petrel

Wilson's petrel is a summer visitor to the southern coast of Anvers Island, where it breeds on the slopes above the station, around Bonaparte Point, and in other localities. In 1955 the first returning bird was seen on 23 November, in 1956 on 16 November and in 1957 on 25 November. In each year the species was fairly numerous by early December. Eggs have been seen rarely, but there is a record of one found in a nest near the station on 1 January 1957. In 1956 the birds left the area soon after 16 April but in 1957 they were still seen regularly until 3 May and the last was recorded as late as 8 May.

12. *Phalacrocorax atriceps* King; blue-eyed shag

Shags breed in numbers on Cormorant Island in Biscoe Bay and have been sighted around Arthur Harbour throughout much of the year. Because the colony lies at some distance from the station there are no useful data on breeding cycles; eggs (averaging three per nest) were

observed on 24 November 1956 and most of the young had left their nests by the time of a visit on 24 April 1955. The diary is, however, most valuable in its record of winter activities and movements.

In 1955 very large flocks were observed around Arthur Harbour between 24 March and 9 April, and in May and June the birds were seen feeding in flocks at sea nearby. In 1957 large flocks were seen passing northwards along the coast on 24 June, and on 25 June two birds came in from the direction of the Wauwermans Islands and passed over the station in the same direction. This northward movement occurred at a time when the sea in the area had lately frozen. After this movement, shags were not seen in 1957 until 4 July, when a group of four were observed, flying westwards. By 7 July open water had appeared near the station and on that date a flock of shags was seen feeding there. Many birds were also seen on 12 July 1957. This pattern of movement may be compared with that noted on 9 August 1956, when shags were said to be making a regular diurnal flight from east to west in the mornings, in huge V-shaped flocks, returning in the evening at about dusk. Both patterns of movement would appear most likely to be short-range migrations to open-water feeding grounds, and the variations in sea ice distribution are likely to have a profound influence on the winter distribution of this species. In 1957 many birds were seen flying towards Cape Monaco on 3 September and a considerable southward migration occurred between then and 9 September only to be partly reversed on 12 September when about 100 shags were seen going north.

### 13. *Chionis alba* (Gmelin); sheathbill

Sheathbills are probably year-round residents in the neighbourhood of Arthur Harbour, but the diary does not record their breeding, or even the presence of pairs, around any of the penguin colonies visited. They are, however, well documented as winter visitors to the station, scavenging on kitchen refuse. In 1955 the first to be seen appeared on 27 May, in 1956 on 20 April and in 1957 on 22 April. The latter two dates are probably the more reliable and the figures for the populations over those two winters are more extensive. In 1956 eight or nine appeared by 27 May, twelve were present on 14 June, and a peak of about 24 was reached on 30 June. In 1957 numbers remained below five until after 30 April, had reached thirteen on 1 May, and totalled 30 on 24 and 27 June. In both years numbers tended to drop subsequently; there were twelve only on 3 August 1957 and six by 30 September. From 1 to 5 October 1957 the number was between nine and five, dropping to one on 7 November. In 1956 two remained on 16 October and one on 31 October. After early November the birds were not seen about the station and had presumably dispersed to the penguin colonies to breed. On 16 October 1956, when the numbers at the station had declined, many were seen on the small islets in the bay. The general seasonal fluctuations recorded are in good agreement with those described by Jones (1963) for Signy Island, South Orkney Islands.

### 14. *Catharacta skua* Brünnich ssp.; skua

The considerable doubt over the subspecies of skua inhabiting the western Palmer Archipelago (Murphy, 1936) has still not been resolved (Falla, 1964), and it is consequently impossible to state which form inhabits the south coast of Anvers Island. Skuas are, however, an abundant breeding species in this area, being concentrated around the penguin and other bird colonies. The first seen near the station arrived on 20 October 1955, 19 October 1956 and 23 October 1957. In 1957 pairing was noted in birds on one small islet where penguins breed as early as 4 November, but in the same season four birds seen near the station on 10 November still showed no signs of pairing or territorial behaviour. Pairing was general by 24 November, and in 1955 "nesting" was recorded on 25 November. Pairs on Litchfield Island had eggs on 5 December 1956 and those around the station on 9 December 1956. Birds were sitting on eggs on 23 December 1955 and the first recorded chick was seen on 27 December 1956 on an island in Biscoe Bay. On 10 January 1956 a chick was seen on an island in Arthur Harbour and another was observed on 12 January, but there were still many unhatched eggs on 17 January. By 8 January 1957, on the other hand, many chicks were present on the islands in Biscoe Bay and by 13 February 1957 two out of 18 chicks on Litchfield Island were able to fly a few yards. These figures may indicate that 1956-57 was an "earlier"

season, or simply that considerable variations can occur in the timing of the skua breeding cycle from place to place and year to year. By mid-March most chicks in the area could fly, but one was observed being fed by its parents as late as 2 April 1956. Numbers declined sharply in early April and by 16–19 April 1956 only a few birds remained. Between 12 and 15 April 1957 the total was estimated as "about 6". In 1956 the last bird was seen on 26 April; in 1957 none was seen on 21 April but a single bird was present between 23 and 25 April and another on 8 May. It was suggested that the April–May group, whose numbers fluctuated irregularly, might be birds passing through the area on a northward migration.

Skuas at Arthur Harbour were primarily predators taking eggs and chicks of several species of bird, and also scavenging on offal from seals killed at the station. But they were seen several times pursuing shags in the traditional "parasitic" manner, molesting them until they disgorged their food. This particular behaviour pattern seems to be directed almost exclusively against shags in this area.

15. *Larus dominicanus* Lichtenstein; Dominican gull

Dominican gulls breed on the rocky headlands and islands off the south coast of Anvers Island and are to be seen around Arthur Harbour throughout the year. In September–October they have been observed in numbers, and on 16 October 1956 birds were seen in pairs at nest sites, giving alarm calls when approached. Eggs were noted on 28 November 1955 and 26 November 1956, and chicks on 23 December 1955 and 20 December 1956. Away from Arthur Harbour, breeding has been confirmed on islands in Biscoe Bay, Dream Island and the Joubin Islands. Young birds were fledging on 12 January 1956 and were well grown and flapping their wings on 20 January. By March a mixed population of adults and juveniles was to be seen about the station and the birds remained numerous in 1957 throughout April and May. In June 1957 about 40 gulls were counted, and these seemed to be dependent on kitchen refuse for food. Juveniles were observed moulting between mid-June and mid-July 1957. Numbers declined in August 1957, rising again in September, and it seems likely that the winter population of this species fluctuates generally according to weather, distribution of open water, and availability of food around human encampments.

16. *Sterna vittata* Gmelin; Antarctic tern

Terns nest along the south coast of Anvers Island, one colony being on Bonaparte Point near the station. Like the gulls, shags and giant petrels, they do not wholly desert the area in winter, but there is an increase in numbers in spring, probably involving southward migration. In 1955 a number were seen about Lapeyrère Bay by a sledge party between 12 and 17 September, and many had settled on the islands at Arthur Harbour on 25 September. In 1956 sea ice was present in Arthur Harbour in early and mid-September, going out on 26 September, and terns became more numerous after this last date. In 1957 two birds were seen on 19 September and numbers increased at the end of the month. What may have been a courtship display was seen on 17 November 1955; eggs were found on 25 November 1955 and 20 November 1956. On 23 December 1956 both eggs and some chicks were seen on an island in Arthur Harbour, and on 6 January 1956 many eggs had hatched although a few were still being incubated. During this period terns were noted as successfully driving off skuas which had approached their nest areas. On 6 January 1957 many young terns were seen on the Joubin Islands. By 24 January 1956 the chicks at Bonaparte Point had left their nests, which were marked only by empty egg-shells. In the autumn of 1956 numbers declined in April–May and a party of 20 was seen moving north on 23 May. However, a few terns still remained on 26 May, two were present on 30 June, and several were noted on 25 July. Many were seen around the station on 31 July 1956, when open water remained near at hand, and on 9 August the terns were in large numbers and made a considerable noise while fishing. They remained abundant on 18 August and the population was reinforced by other birds when the sea ice disappeared on 26 September. In contrast, during the 1957 winter when sea ice formed in June and remained heavy until September, the tern population was smaller. Five were seen on 14 May, and the species was not noted after that until 23 July. There were then no records until 19 September when the spring immigration began.

## GENERAL FEATURES OF THE AVIFAUNA

Summarizing the available records, the following check list may be constructed for the south coast of Anvers Island:

a. *Breeding species resident throughout the year*

<i>Pygoscelis adeliae</i>	(Numbers reduced in winter; absent when there is no open water.)
<i>Macronectes giganteus</i>	(Numbers reduced in winter.)
<i>Phalacrocorax atriceps</i>	(Numbers reduced in winter; absent when there is no open water.)
<i>Larus dominicanus</i>	(Numbers reduced in winter.)
<i>Sterna vittata</i>	(Numbers reduced in winter; absent when there is no open water.)
? <i>Chionis alba</i>	(Breeding not proven closer than Wiencke Island; common in winter.)

b. *Breeding species absent in winter*

<i>Pygoscelis antarctica</i>	(Uncommon; mainly a non-breeder.)
<i>Oceanites oceanicus</i>	
<i>Catharacta skua</i>	

c. *Non-breeding species*

<i>Pygoscelis papua</i>	(Breeds at Wiencke Island; common in spring and autumn.)
<i>Eudyptes chrysolophus</i>	(Rare summer visitor.)
<i>Diomedea</i> sp.?	(Rare summer visitor to open sea.)
<i>Fulmarus glacialisoides</i>	(Rare.)
<i>Daption capensis</i>	(Uncommon visitor in autumn, winter and spring.)
<i>Thalassoica antarctica</i>	(Rare winter visitor.)

In general, this avifauna is much what would be expected on the oceanic fringe of the Palmer Archipelago in lat. 64°50'S. (Murphy, 1936, 1964; Falla, 1964). Among the penguins, *Pygoscelis antarctica* is here near its southern limit and it is not surprising to find it in small numbers with a low incidence of breeding. The stray record of *Eudyptes chrysolophus* is probably the southernmost available for this species and genus, but the behaviour of that one individual in accompanying Adélie penguins into their colony parallels its habits elsewhere. This area resembles many others on the maritime fringe of Graham Land in retaining during winter five species which in more inland areas disappear completely at this season. Their presence is clearly related to the extent of open water nearby and their movements evidently vary according to the changing distribution of feeding grounds. In noting this the present observations reinforce and extend those of Gain (1914) who also saw shags, gulls, giant petrels and Adélie and gentoo penguins in winter around Petermann Island, in the same vicinity.

## SEALS IN THE ARTHUR HARBOUR REGION

Four species of seal were recorded in this area during the period covered by the diary. Of these, only the Weddell seal (*Leptonychotes weddelli*) is recorded as breeding. In 1955 the first Weddell seal to haul out near the station did so on 29 August; a female shot for dog food on 17 September proved to be in an advanced state of pregnancy. The first pup was seen on 21 September and in 1955 three pups were born near the station between then and 25 September. In 1956 only one pup was born in the area, but many Weddell seals were hauled out on the north-west coast of the islands when a sledge party passed that way on 13 September. In 1957 Weddell seals were less common at Arthur Harbour and no pups were born there. This decline may have resulted from killing off the locally breeding population for dog food, although the distribution of this species in the breeding season is also affected by sea ice conditions and may vary widely from year to year (personal communication from F. W. Topliffe).

The elephant seal (*Mirounga leonina*) was commonly seen on small islets inshore from Torgersen Island, east of the station. Numbers were greatest between December and July,

but in the open winter of 1956 a few were seen throughout August and again in October. There are no records of breeding and the population is almost certainly a marginal group of feeding and moulting animals.

Crabeater seals (*Lobodon carcinophagus*) were seen rarely in this area, except in the summer of 1955-56 when an influx occurred and 27 were taken for dog food between 11 December and 11 January. In contrast, leopard seals (*Hydrurga leptonyx*) were seen frequently throughout the year, usually as single individuals or as small groups.

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