

BIRDS OF THE INLAND MOUNTAINS OF WESTERN DRONNING MAUD LAND, ANTARCTICA

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SUMMARY

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Observations of birds visiting some of the inland mountains and nunataks of western Dronning Maud Land during the austral summer are presented. Four species occur in the area, Antarctic Petrels *Thalassoica antarctica*, Snow Petrels *Pagodroma nivea*, Wilson's Stormpetrels *Oceanites oceanicus* and South Polar Skuas *Catharacta maccormicki*. Two species have been seen as far south as 74 05S, almost at the southern limit of exposed rock. Known breeding sites are reviewed and the first evidence of breeding by Antarctic Petrels in the area is presented.

INTRODUCTION

Little has been reported on the birds visiting inland mountains and nunataks of western Dronning Maud Land, Antarctica. Here we consider the birds of four main mountain ranges, the Ahlmannryggen (including the Giaeveryggen), Borgmassivet, Kirwanveggen and the H.U. Sverdrupfjella, between 6W and 2E and 71 and 74S (Fig. 1). Snow Petrels *Pagodroma nivea* have been reported breeding at several localities in the northern Ahlmannryggen (Dalenius & Wilson 1957, La Grange 1962, Krynauw *et al.* 1983) and the H.U. Sverdrupfjella (Dalenius & Wilson 1957, Mehlum *et al.* in press). Incidental observations of other birds in the area include Wilson's Stormpetrels *Oceanites oceanicus* and South Polar Skuas *Catharacta maccormicki* from the northern Ahlmannryggen (La Grange 1962, Krynauw *et al.* 1983), and Antarctic Petrels *Thalassoica antarctica* and skuas from the H.U. Sverdrupfjella (Roots 1954).

The status of birds visiting the mountains to the east and west of the area considered here has been

recorded in more detail. To the west, the occurrence of birds in the Vestfjella (Sømme 1977), Heimefrontfjella and Tottanfjella (Ards 1964, Bowra *et al.* 1966) and the Theron Mountains (Brook & Beck 1972) has been described. Birds found farther east in Dronning Maud Land have been reported by Lvenskiold (1960), van Autenboer (1962), Konovalov (1964), Richter (1983), Mehlum *et al.* (1985, in press) and Simonov *et al.* (1985).

We report on birds seen at various sites in the Ahlmannryggen during the summer of 1987-88, and collate some of the observations made since 1984 by geological field parties to the H.U. Sverdrupfjella and Kirwanveggen.

STUDY AREA AND METHODS

The region of interest incorporates four main mountain ranges, the Ahlmannryggen, Borgmassivet and Kirwanveggen running from north to south in the west, and the H.U. Sverdrupfjella in the east, separated from the other ranges by a large glacier, the Jutulstraumen

(Fig. 1). To the north the Jelbart and Fimbul Ice-shelves extend some 130 km from the most northerly nunataks to the sea. The most southerly nunataks of the Kirwanveggen are more than 420 km from the sea. We visited the Ahlmannryggen between 14 December 1987 and 25 January 1988. Between 14 and 22 December we were based at the Sarie Marais field station at Grunehogna (72 02S, 2 22W) and Midbresrabben (72 44S, 2 06W) an isolated nunatak at the junction of the Pencksokket and Jutulstraumen glaciers. From 22 December to 27 January we camped between Ice Axe Peak and Peaceful Hill, two nunataks in the Robertskollen group (71 28S, 3 15W). During this period, day trips were made to all other nunataks in the group. With the exception of Snow Petrels at Robertskollen, all birds seen were counted and the time and weather conditions recorded.

Several geologists that worked in the area during the last five summer seasons provided observations from additional localities.

RESULTS AND DISCUSSION

Four bird species were observed at the inland nunataks: Antarctic Petrels, Snow Petrels, Wilson's Stormpetrels and South Polar Skuas. The distribution patterns and breeding records of these species are considered separately below.

Antarctic Petrel

This species has been reported from the northwestern H.U. Sverdrupfjella, where a large flock was seen during a period of strong wind on 3 February (Roots 1954), and La Grange (1962) frequently observed large flocks over the Fimbul Ice-shelf to the north of the area. We found the species to be fairly common in the Ahlmannryggen during the early part of the summer season, observing it around Grunehogna (four sightings involving 102 birds), Istind (one sighting, four birds) and Robertskollen (seven sightings, 111 birds). No Antarctic Petrel was observed after 2

January, the period prior to egg-hatching at the large Svarthamaren colony (71 53S, 5 10E) in the Mühlig-Hofmannfjella, approximately 300 km farther east (Kononov 1964, Mehlum *et al.* 1985).

Flocks of between 25 and 75 Antarctic Petrels were observed both at Grunehogna and Robertskollen, usually during or immediately after periods of strong wind. These flocks tended to move rapidly from west to east, often flying in excess of 100 m above the ground. This suggests that the flocks were comprised of birds from farther east (presumably the Svarthamaren or Jutulsessen colonies, see below) that were displaced by the prevailing easterly winds. Smaller numbers of Antarctic Petrels (one to three) were seen circling nunataks during calm weather, where they sometimes remained for several hours. Time of day had no apparent influence on numbers of birds seen.

Two adult carcasses were found at Ice Axe Peak, but no evidence of breeding was found. One old egg from this species (measuring 66 X 51 mm) was collected at Snarbynuten (72 02S, 1 38E) in the eastern H.U. Sverdrupfjella during January 1988 by B. Corner, representing the first breeding record for the area. However, three colonies involving approximately two thousand pairs of Antarctic Petrels were found during the 1984-85 summer at Jutulsessen, the western end of the Gjelsvikfjella, less than 40 km to the east of Snarbynuten (Mehlum *et al.* in press). There were no other signs of breeding at Snarbynuten, and no birds were in attendance.

Antarctic Petrels probably do not regularly breed in the area in any numbers, because colonies of this surface-nesting petrel are conspicuous and are unlikely to have been overlooked by the geologists and surveyors who have mapped the area. The single egg found at Snarbynuten may represent an isolated breeding attempt similar to those reported from Vestfjella (Sømme 1977, Mehlum *et al.* in press).

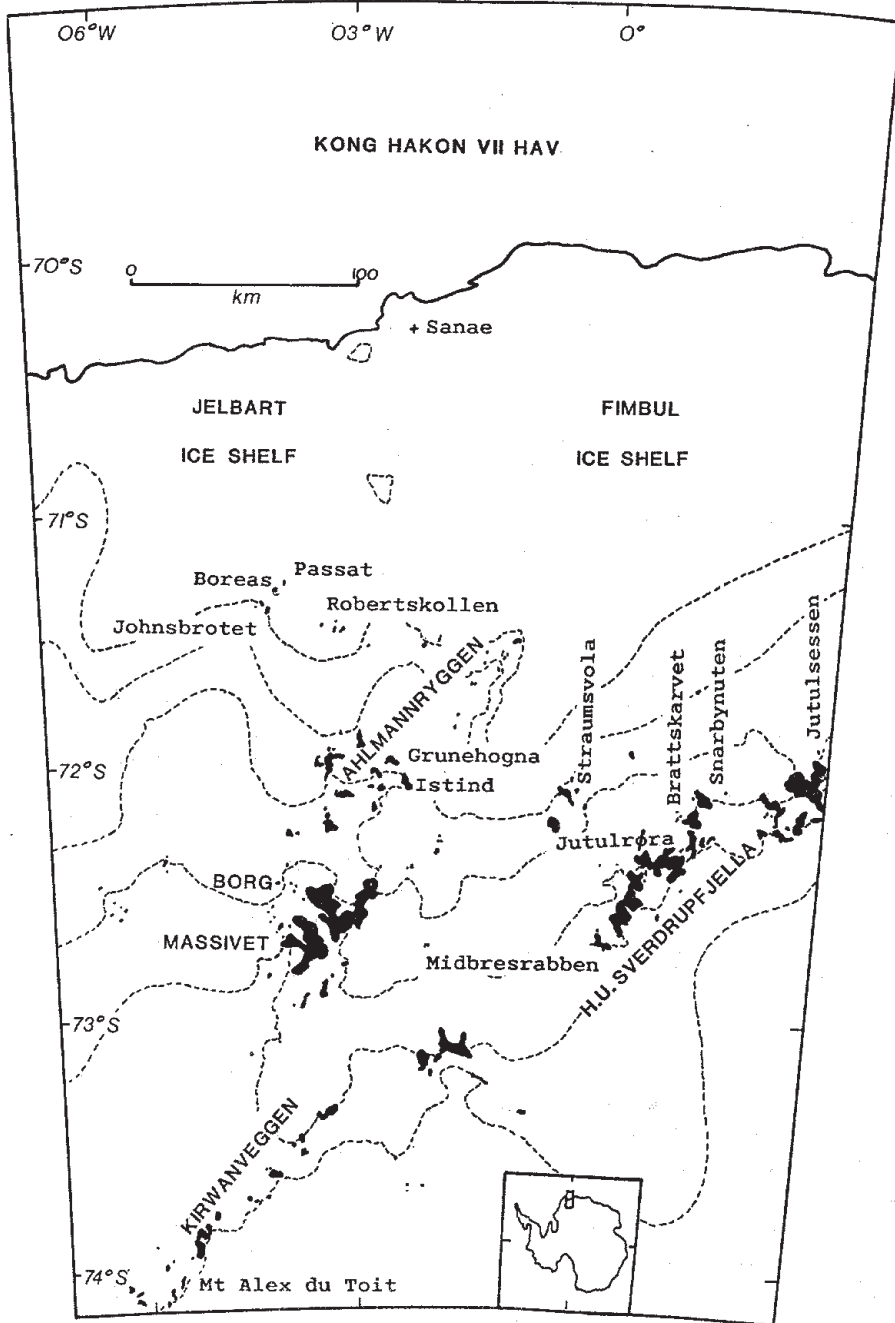


Figure 1

The study area, showing the main nunatak ranges and some of the localities mentioned in the text.

Snow Petrel

This species is the most abundant bird in the area. It frequently was encountered at nunataks away from the breeding grounds. They were seen every day at Grunehogna, usually in small groups (2-20 birds), but a flock of 180 birds was seen at midnight on 18 December 1987. They were present for long periods, with no apparent relationship to time of day or weather conditions. One bird was seen to land briefly on a snow slope. Snow Petrels were also seen at Istind (two birds) and at the very isolated Midbresrabben (four birds). Geologists reported it as being widespread, and three were seen at Mount Alex du Toit (74 05S, 6 15W), near the southern end of the Kirwanveggen and more than 400 km from the sea, during February 1985 (C. Harris pers. comm.). Large flocks of Snow and Antarctic Petrels have been seen around Jekselen (72 00S, 2 32W) and Grunehogna (J.R. Krynauw *in litt.*).

Approximately 600 pairs of Snow Petrels were found breeding at three of the large nunataks in the Robertskollen group: Ice Axe Peak, Petrel's Rest and Cave Peak (Ryan & Watkins ms). Probable breeding (birds entering cavities in the cliff face) was observed on the north face of Brattskarvet (72 07S, 1 25E) in the northeastern H.U. Sverdrupfjella during summer 1986-87 (G. Hodgkinson, B. Corner pers. comm.), and Mehlum *et al.* (in press) cite Norwegian Polar Research Institute unpublished records of Snow Petrel colonies in the H.U. Sverdrupfjella, without giving detailed localities. Breeding also occurs at Jutulsessen (72 03S, 2 45E) in the Gjelsvikfjella, just east of the H.U. Sverdrupfjella (Løvenskiold 1960, Engelskjøn 1985, P.B. Groenewald pers. comm.).

Despite extensive work at both Jutulrøra (72 15S, 0 25W) and Straumsvola (72 07S, 0 20W), no evidence of breeding has been found (Wisnes 1972, G. Grantham, C. Harris pers. comm.). This region includes Ekberget (72 17S, 0 21W), where Dalenius & Wilson (1957) reported the remains of Snow Petrel chicks. Pairs flying together around nunatak

1285, Grunehogna, were seen to perform display flights typical of birds at breeding colonies, but it is unlikely that breeding occurs there, because no nest sites were found, birds were not heard to call and all had clean plumage (incubating birds at Robertskollen typically had dirt-stained breast and belly feathers).

Snow Petrels previously have been reported breeding at Passat and Boreas (71 18S, 3 55W), Johnsbrotet (71 24S, 4 10W) and Robertskollen, all in the northern Ahlmannryggen (La Grange 1962, Krynauw *et al.* 1983). However, these observations are partly inaccurate. La Grange (1962) claims to have found chicks in nests at Johnsbrotet and Robertskollen between 10 and 15 November, some weeks before egg-laying occurs (Bowra *et al.* 1966, Brown 1966, Mougín 1968, Sømme 1977, Ryan & Watkins ms). These presumably were adults that were confused with chicks because of their reluctance to vacate their nest sites. The supposed instance of "chick-feeding" recorded on 10 November at Johnsbrotet (La Grange 1962, Krynauw *et al.* 1983) almost certainly refers to an agonistic interaction between adults.

Wilson's Stormpetrel

This species was uncommon; we saw one at Grunehogna and eight at Robertskollen. All records were of singletons, usually seen circling low over nunataks. All but two records were in the late afternoon (exceptions being one at 07h00 and one at 12h00). The only previous records of Wilson's Stormpetrels from the area are those of birds at Ice Axe Peak, Robertskollen (Krynauw *et al.* 1983, J.R. Krynauw *in litt.*), although La Grange (1962) observed the species over the Fimbul Ice-shelf. We made five sightings at Ice Axe Peak in five weeks of observations, but breeding was not suspected to occur. None of the birds remained in the area for long, and two observed during blizzards appeared displaced.

Three of the sightings at Robertskollen were from Petrel's Rest, despite our spending only three days

at the nunatak. The dried carcass of an adult bird (bones completely ossified) with some primary moult was found on the north-facing cliff of Petrel's Rest. No bird was seen to alight, but one individual repeatedly circled the same area of boulder scree below the north-facing cliff at Petrel's Rest, dangling its legs in the manner typical of petrels contemplating landing. Thus, although no nests were found, it is possible that breeding occurs at this locality. The northern cliff of Petrel's Rest had the most luxuriant vegetation of all areas visited, suggesting a warm, sheltered environment. Konovalov (1964) noted that Wilson's Stormpetrels only occurred at the more northerly, sheltered nunataks farther east in Dronning Maud Land.

South Polar Skua

We observed this species on nine occasions; three times at Grunehogna (all singletons) and six times at Robertskollen (three singletons, two groups of two birds and one group of four birds). They did not remain in one area for more than a few hours. There was no apparent relationship between sightings and the time of day, but all were seen during fine weather. The individual seen at Grunehogna on 22 December 1987 bore a metal ring on its left leg, and probably was one of 50 fledglings ringed at Svarthamaren in the Mühlig-Hofmannfjella during February 1985 (Mehlum *et al.* 1985).

South Polar Skuas are scarce but widespread in the area. They are attracted by human activity and often visit field stations and camps. Geologists report that one or more skuas usually arrive within hours of setting up a camp. Two South Polar Skuas were seen at Mt Alex du Toit at the southern end of the Kirwanveggen, more than 400 km from the sea, during February 1985 and 1986 (C. Harris pers. comm.).

There is no evidence to suggest that South Polar Skuas breed in the area. Skuas have been reported from Boreas (La Grange 1962), Johnsbrotet (Krynauw *et al.* 1983), and a midden of bones found

in the northwestern H.U. Sverdrupfjella was tentatively attributed to this species (Roots 1954), but there has been no mention of breeding. Breeding should occur near Snow Petrel colonies, because Snow Petrels are the main food source in the area (e.g. Løvenskiold 1960). Regurgitated pellets containing the remains of Snow Petrels and partially eaten carcasses of fledgling Snow Petrels were found at several nunataks at Robertskollen, but skuas were only transient visitors and no evidence of breeding activity was observed. No interactions were observed between skuas and Snow Petrels, but it is interesting that all but one skua pellet and all eaten carcasses were found at small nunataks lacking breeding Snow Petrels, suggesting that South Polar Skuas are harassed by Snow Petrels.

CONCLUSIONS

The status of birds visiting the inland nunataks of western Dronning Maud Land is similar to that in adjacent mountain ranges (Løvenskiold 1960, Konovalov 1964, Bowra *et al.* 1966, Brook & Beck 1972, Sømme 1977, Mehlum *et al.* 1985, in press). The paucity of breeding records from western Dronning Maud Land probably reflects the absence of a biological programme in the area. The northern nunataks of the Ahlmannryggen and the H.U. Sverdrupfjella are closer to the sea and, in the case of the Ahlmannryggen, lower lying (and therefore warmer) than most adjacent mountain ranges where birds have been found breeding. It is thus likely that there are several undiscovered colonies in the area. An accurate survey of known breeding sites coupled with a search for further colonies is warranted.

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