

Ross's Gull *Rhodostethia rosea* breeding in Disko Bay, West Greenland, 1979

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(Med et dansk resumé: Rosenmågen *Rhodostethia rosea* fundet ynglende i Disko Bugt, Vestgrønland, 1979)

Publications from the Danish Arctic Station, No. 79

INTRODUCTION

Ross's Gull *Rhodostethia rosea* was first described from two specimens shot by Sir James Clark Ross in June 1823 at the Melville Peninsula, arctic Canada, though an earlier bird is known, from West Greenland about 1810 (Winge 1898). Until it was observed in large numbers from the ill-fated *Jeanette* in the pack ice off NE Siberia in 1879, practically nothing was known about the species and very few specimens existed, about half of these from West Greenland. No one had seen a nest or an egg. About 1880 an eskimo hunter from Christianshåb District in the Disko Bay sold a male bird in breeding condition to E. C. Fencker, but no eggs were preserved - the hunter admitted to have eaten them. The incident was not reported until much later (Fencker & Scheel 1929). Then, 15 June 1885, the often quoted breeding attempt at Ikamiut, also Christianshåb District, was discovered. Both birds were shot and together with one of the two eggs sent to Copenhagen. The male was acquired by H. Seebohm, who exhibited it with a photo of the egg at a meeting of the Zoological Society in London (Seebohm 1886; Helms 1933).

What is still the only known regular breeding area of Ross's Gull was discovered in 1905 by Buturlin at 67°-71° N, 145° - 160° E, at the lower reaches of Indigirka and Kolyma rivers in NE Siberia (Buturlin 1906). Here, mostly associated with colonies of Arctic Terns *Sterna paradisaea*, small groups of 2-15 pairs breed on marshy places among birch and alder scrub, preferably on lake borders,

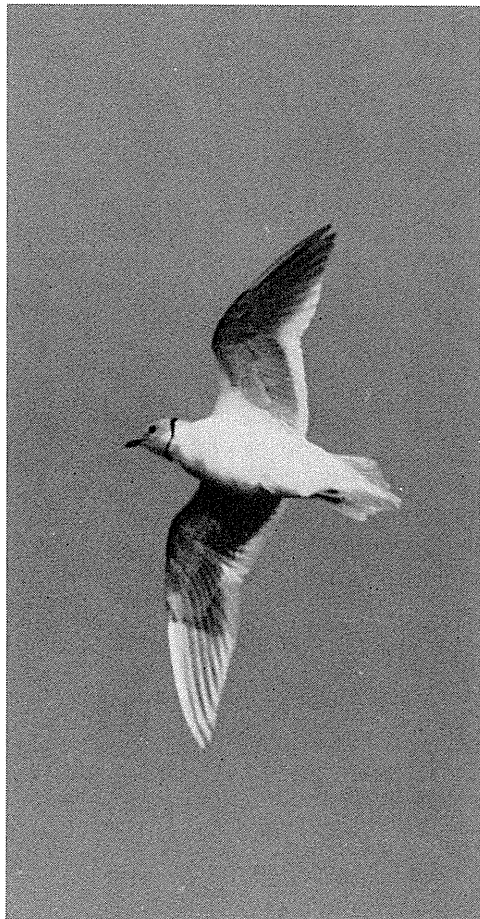


Fig. 1. Ross's Gull in flight. The under wing surface appears too dark due to the light conditions.

Rosenmågen i flugt. Undervingen fremtræder mørkere end i virkeligheden på grund af lysforholdene.

or sometimes on moist tundra. The birds arrive to this area in late May/early June, and disappear northwards to the Arctic Ocean as soon as the young are fledged in late July.

Buturlin's discovery made the Greenland breeding case seem very peculiar. It has even been regarded with some doubt, as the egg resembles that of Sabine's Gull *Larus sabini* too much to allow a definitive identification. The presence of the birds, however, ought to make the case indebatable.

The species has not been found breeding in West Greenland since then, although it has turned up several times and breeding has been suspected (Petersen 1928). In 1979, however, we found a pair breeding at Grønne Ejland, Disko Bay. The nest, containing a single egg, was placed on the easternmost island in the group, Angissat (68°50'N, 51°50'W), which we visited on 13 June and again the following morning. When we returned on 26 June the birds had disappeared, the breeding attempt probably having been unsuccessful.

THE LOCALITY

Grønne Ejland (Kitsigsúnguít) is a small basaltic archipelago situated in the southeastern part of the Disko Bay. It consists of four islands and many islets and skerries all of which are low, nowhere exceeding 30 m.

Angissat is mostly covered by a lichen-rich heath with *Cassiope tetragona*, *Empetrum nigrum*, *Vaccinium uliginosum* and *Betula nana*. Along the north coast is a salt marsh with several lagoons and pools. The marsh vegetation is dominated by *Puccinellia phryganodes*, with *Carex* spp. and *Eriophorum scheuchzeri* along the margins of the lagoons. A sandy shore ridge partly covered with *Elymus mollis*, *Honckenya peploides*, *Mertensia maritima* and *Carex* sp. protects the salt marsh against the sea.

The spring starts early at Grønne Ejland compared with other parts of the Disko Bay area. On 13 June the islands were already free of snow apart from north facing slopes. The largest of the lagoons and a lake at the interior of Angissat were mostly ice-covered, all other lagoons and pools were totally ice-free.

The islands have a rich bird fauna, dominated by Arctic Terns, the laying of which had just started on 13 June. Phalaropes *Phalaropus*

lobatus and *fulvicarius* breed in numbers primarily at the lagoons and pools, and several duck and wader species occur as migration and summer visitors.

Potential nest predators seen at our visits were Iceland, Glaucous and Great Black-backed Gulls *Larus glaucooides*, *hyperboreus* and *marinus* (200 on 13 June, few on 26 June), Arctic and Long-tailed Skuas *Stercorarius parasiticus* and *longicaudus*, two Ravens *Corvus corax*, and an Arctic Fox *Alopex lagopus*. The major threat to the tern nests is, however, represented by man. Egg-collecting on the islands is a tradition established since old times and still kept up. Besides, the place is a popular resort for the population of the nearby towns.

APPEARANCE AND BEHAVIOUR OF THE BIRDS

We discovered the Ross's Gulls in the afternoon of 13 June and observed the birds for two periods that day. They stayed within a limited area just behind the shore ridge and for some time even in front of it on the beach. It eventually became obvious that they had a nest nearby. Not wishing to disturb more at the moment, we left the place, returning the following morning to find the nest.

The appearance of Ross's Gull is very characteristic (cf. Figs. 1-3). The rosy tinge was not conspicuous, though, and seems to be a variable feature judging from the diverging descriptions given in various sources. A correlation with age has been supposed (Buturlin 1906), but never affirmed. The colour might be influenced by the food of the birds, since it comes from the oil gland secretion. Another feature, barely visible in Figs. 2-3, was the light grey hue of the head above the collar, slightly darker than the body, suggesting that the head pattern is derived from a hood like that of Sabine's Gull. The small bill, however, made the head look strange, rather like a dove than a gull. The flight was buoyant and a little wavering, like that of the Little Gull *Larus minutus* and not, as sometimes stated, tern-like.

The birds were standing much of the time, often together, and showed a certain preference for the ice on the still covered lagoon (Fig. 3). They were rather trustful, taking



Fig. 2. The male at the beach.
Hannen stående på stranden.

flight only when we got nearer than about 25 m; if we approached slowly they preferred to retire on foot or swimming along the shoreline.

We saw only the female incubating and in

this situation the flight distance was longer, some 75 m. If we got nearer she would take wing and alight about 100 m away. At such occasions the male flew closely past or above us uttering a series of short, dry sounds,

Fig. 3. The female Ross's Gull at the ice-covered lagoon.

Hunnen ved den isdækkede lagune.





Fig. 4. The female incubating. In the foreground the lagoon, behind it the shore ridge. Note the proximity of the nest to the water.
Hunnen rugende på reden. I forgrunden lagunen, i baggrunden strandvolden.



Fig. 5. The nest and egg. The water's edge is a little beyond the top left corner.
Reden og ægget. Retningen mod lagunen er opad til venstre.

which might be the voice spelled »a-dac, a-dac, a-dac« by Buturlin (1906), although said solely to be used under disputes with other members of the species. This alarm behaviour was rather subdued and did never last more than a few minutes. On one occasion we saw, unfortunately at a long distance, parts of a courtship display, which enabled us to sex the birds. While standing close together on the ice, the male with neck extended up demonstratively presented his nape to the female, which pecked at the ice and seemed to beg. These elements are known even from other gull species. After about one minute he mounted her, apparently without successful copulation.

The relations of the Ross's Gulls to the terns were not too peaceful. Several times one or a few terns mobbed one or both gulls. When standing they seemed rather annoyed and would eventually take flight. Once the female was driven away from the nest by a tern, but on that occasion she was already nervous because of our presence. In the air the gulls seemed fully able to cope with the terns, but the gulls never initiated hostile encounters.

While we were at the place, the birds foraged on the ice, picking *Collembola* and millimeter-sized juvenile *Bivalvia*. They even took unidentified food items at the water's edge.

NEST AND EGG

The nest of the Ross's Gulls (Figs. 4-5) was placed on the inner side of the shore ridge, at the margin of a lagoon, which was salt but cut off from the sea at normal sea level. The nest was built directly on sand, less than one meter from the water and two meters from the nearest tern nest. Nest materials were dry straws of *Elymus* and a few down, feathers and pieces of seaweeds somewhat carelessly placed, limiting the nest only towards the water, while to the other side it was limited by a small sandy bank. The nest cup proper measured about 10 cm across, although rather ill-defined.

The nest contained a single egg (Fig. 5), 40.9×31.6 mm big. The shape and colour did not differ significantly from descriptions and plates in Bent (1921) and Makatsch (1974). It was somewhat smudged and therefore hardly new-laid, thus the single egg apparently constituted the whole clutch.

The breeding, as already mentioned, was not successful. We find it most probable that the nest was robbed by men collecting tern eggs - it was in an exposed position near a natural landing site. It even seemed vulnerable to flooding, but nothing suggested that this had happened when we returned on 26 June.

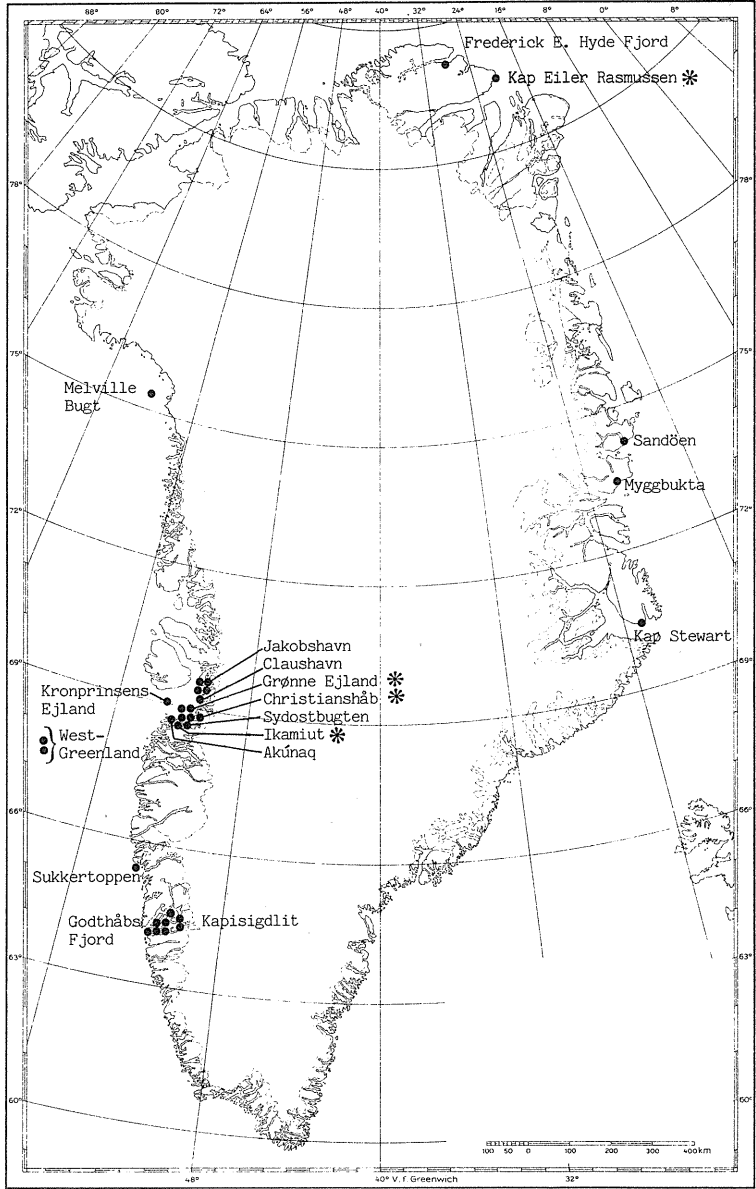


Fig. 6. The distribution of the Ross's Gull records from Greenland. Locality names of the four known breedings are indicated by asterisks.
Forekomster af Rosenmågen ved Grønland. Stednavnene for de fire kendte yngleforekomster er markeret med stjerner.

EARLIER RECORDS FROM GREENLAND

We have been able to trace 25 earlier records of Ross's Gull from West Greenland, most birds shot, but even a few sightings (one Melville Bay 1873 (Winge 1898), four Godthåb Fjord 1919-28 (Petersen 1928, Oldendow 1933). From North and East Greenland there are five records, four single birds and a breeding pair (Hjort 1980). The occurrences are

shown in Fig. 6. Except for a juvenile bird seen in the Godthåb Fjord August 1927, all birds have been in adult plumage and from the months of May, June and July (a bird from Disko Bay 1890, though, seems atypical by having distinct dark markings on primaries 6-8, combined with an otherwise normal adult plumage).

About half of the records are from the Disko Bay area, most from the second part of the last century (Fig. 7). After absence in

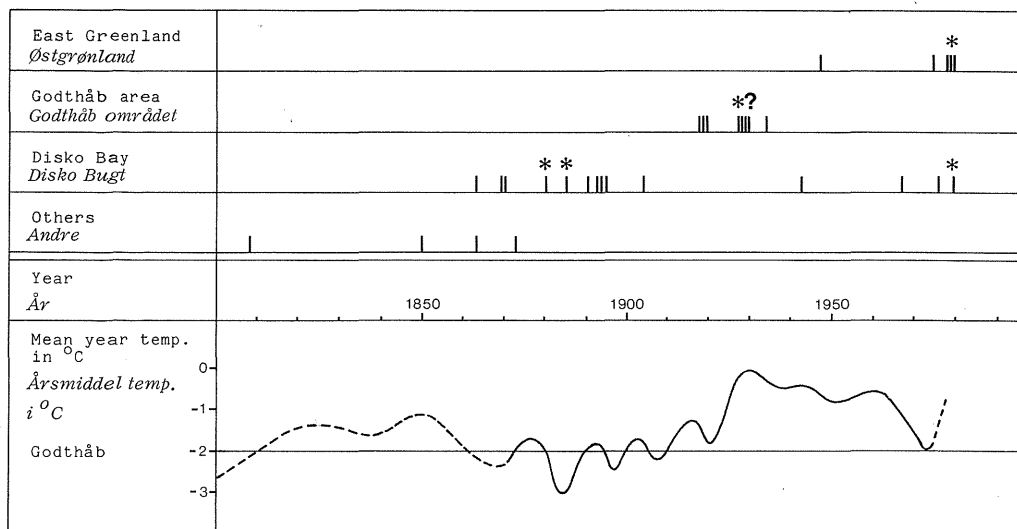


Fig. 7. Chronology of the Greenland records of Ross's Gull (breedings indicated by asterisks), and the mean year temperature for Godthåb. The temperature curve, due to dr. W. Dansgaard, is smoothed to suppress short term (less than ten years) variations.

Den kronologiske fordeling af forekomsterne af Rosenmåge ved Grønland (ynglefund angivet med stjerner), og middeltemperaturen for Godthåb. Temperaturkurven efter dr. W. Dansgaard; den er udglattet således, at udsving under ti år er undertrykt.

many years, Ross's Gull reappeared in the Disko Bay again a few times from about the middle of this century. Three earlier records are from Grønne Ejland. These, the breeding birds and one from Kronprinsens Ejland are from colonies of Arctic Terns. Various locality names recorded for the rest are in some cases probably the hunter's home place.

From the Godthåb area eight birds are known from the first half of this century. In fact the species seems to have been regular here through a number of years, since John Møller told Petersen (1928) that it was observed almost annually by hunters and fishermen on the fiord. In this area Ross's Gull occurred among Kittiwakes *Rissa tridactyla*, explicitly stated for six of the birds. There is no breeding record from the area, but a bird shot on 1 June, 1927, had well-developed testes and brood patches (Petersen 1928).

DISCUSSION

Breeding habitat

The surroundings at Grønne Ejland did have certain similarities to the Siberian breeding grounds described by Buturlin (1906), and from where some photos have been published

recently (Densley 1977). But of course ecological differences do exist between a small maritime island and the marshy in-land grounds of NE Siberia. Thus at Grønne Ejland the gulls could feed on marine organisms, an opportunity not present in Siberia where the species subsists on insects alone (Dementiev & Gladkov 1969). In spite of such differences the bird faunas are rather similar. Noteworthy is the preference of Ross's Gull for breeding among terns. This is well-known also in Sabine's Gull and probably caused by the protection given by the terns, even though the aggressiveness of these frequently is directed towards the gulls themselves.

In accordance with the descriptions from Siberia the nest on Grønne Ejland was placed very close to water, which, however, was a salt lagoon, though similar to a lake by lacking tidal movements - which would be incompatible with the situation of the nest. Peculiar was the situation on sand, clear of vegetation. The nest material was dry grass as in Siberia, although with addition of feathers and seaweed. The fact that it was in part replaced by a sand bank was apparently a consequence of the somewhat sloping support. The clutch size is normally three, occasionally two or one (Dementiev & Gladkov 1969). As the mean of

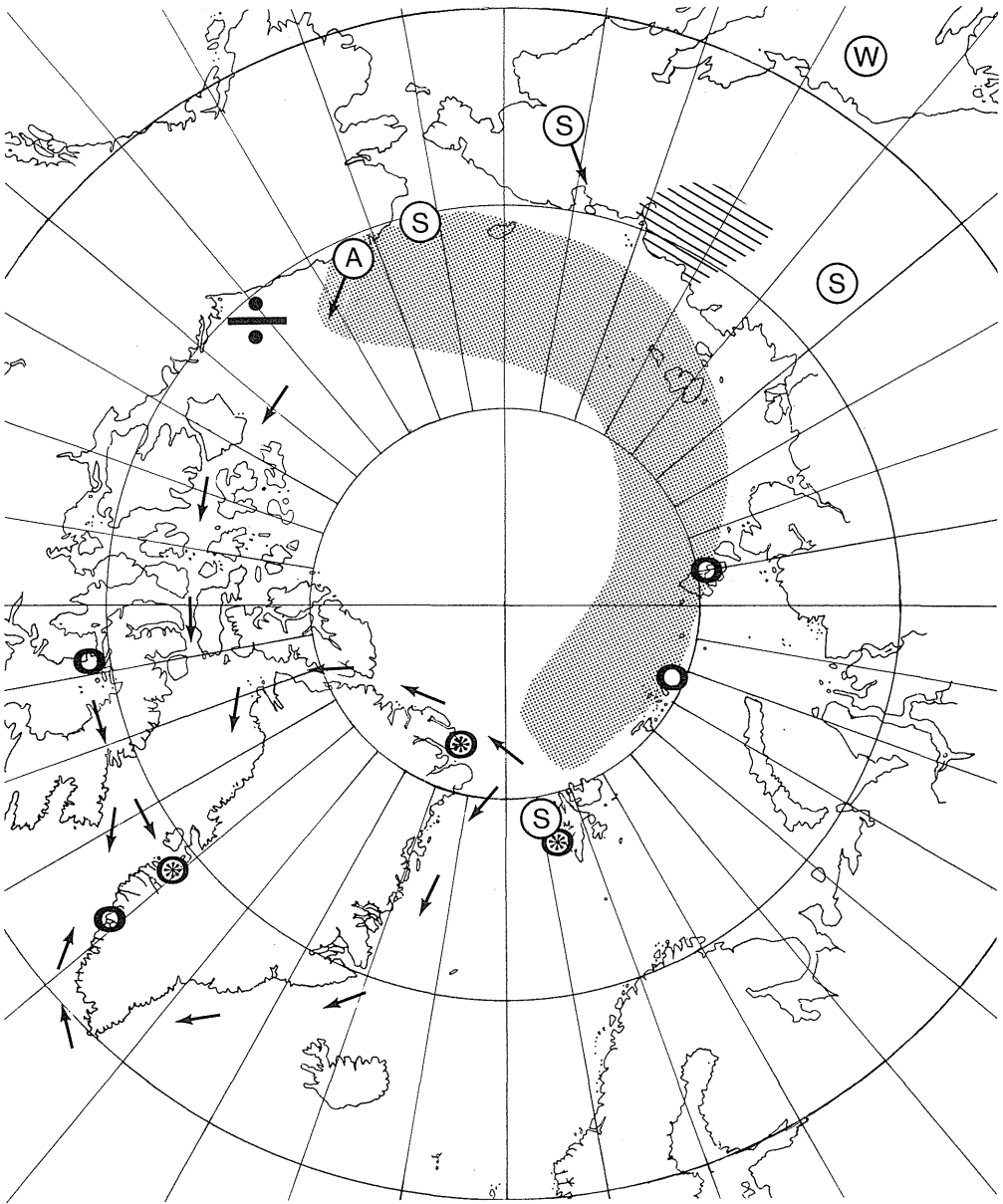


Fig. 8. The distribution of Ross's Gull. The figure shows the Siberian breeding area (hatched); the part of the Arctic Ocean from where it is known as more or less regular in summer and autumn (stippled); and places where flocks have been seen migrating in autumn (A) and spring (S), with recorded migration direction indicated. The winter quarters are probably in the Arctic Ocean, but the Sea of Okhotsk has been proposed too (W). Also shown are known (encircled asterisks) and presumed (empty circles) breedings outside Siberia, and the possible immigration routes to West Greenland (arrows).

Rosenmågens udbredelse. Figuren viser yngleområdet (skraveret); de dele af det Arktiske Hav hvorfra den er kendt sommer og efterår (prikket); og trækkende flokke efterår (A) og forår (S), med trækretning angivet hvor den er oplyst. Overvintring sker formodentlig i det Arktiske Hav, men det Okhotske Hav har også været foreslået (W). Desuden viser figuren kendte (stjerner) og formodede (cirkler) yngleforekomster uden for Sibirien og de mulige indvandringsveje til Vestgrønland (pile).

36 eggs Buturlin (1906) gives the measurements 43.3×31.6 mm; Bent (1921) reports 43.3×32 mm (31 eggs in various collections); Makatsch (1974) for 24 eggs (8 clutches) 44.3×32.2 mm. The egg from Disko Bay 1885 measures 46.5×32.5 mm (Salomonsen 1950). Compared with these the egg from Grønne Ejland was small, i.e. short.

One would expect gulls breeding at new and unusual places to be young, and in fact a few hints suggest this was the case: the paleness of the rosy colour, though the bearing of this feature on age is unclear; the (probably) small clutch of one; and the shortness of the egg, which might (statistically) indicate a young female (Mills 1979).

Possible causes of the occurrences in West Greenland

Since Salomonsen (1967) considered an association of the Greenland Ross's Gull records with cold periods, the records have been graphed together with the temperature curve for Godthåb in Fig. 7. Godthåb was chosen because the temperature curve was available in a suitable form and, at any rate, the climatic trends are reasonably uniform along the coast. As can be seen, there might be a weak correlation, though the distribution since 1850 does not significantly deviate from a random one when whole Greenland is considered. From the Disko Bay records are indeed few during the warm spell in the first half of this century, but this is exactly the period during which the Godthåb records occurred.

Apart from a possible, but somewhat obscure relation to climate, the occurrences raise two questions. First, are the breeding attempts isolated incidents or do they indicate the presence of a breeding population? And second, assuming an eventual Greenland population to be too small to maintain itself, are the birds recruited from Siberia or from other, still unknown, breeding places?

As to the first question, there are now three breeding records from the Disko Bay, together with a number of records of single adults in breeding plumage. Either the birds breed here occasionally because they are for some reason present in the right season - or they are occasionally observed because they breed here. The second alternative, i.e. that a small population resided in the last century and now

again is established in the Disko Bay area, seems to us at least as plausible as the first. Even in this area, with its - for the arctic - dense human population, the birds could remain unnoticed for a long time, and the absence of records of juveniles is explainable if they immediately disappear across the sea (as they do in Siberia). At Grønne Ejland Ross's Gull could hardly avoid detection for more than a few seasons. We suspect, admittedly without positive evidence, that the bird shot here 1975 (Ballegaard 1978) was a breeding bird. A search around other tern colonies in the Disko Bay area might well be worth while.

The second question should be seen in the light of the meagre information available on the species (cf. Fig. 8). Shortly after the breeding season, from late July to October, the species has been observed in the Arctic Ocean off Eurasia, from 20°E to 180°E (Dementiev & Gladkov 1969). At Pt. Barrow, Alaska (160°W), it is at times seen in large numbers, mostly flying NE (Bailey 1948). It is generally believed to winter in the Arctic Ocean. Spring migration is known to occur regularly at Anadyr towards NW (Dementiev & Gladkov 1969), which seems odd as the species is rare in the Bering Sea; many were seen NW of Pt. Hope, Alaska, on 10 June 1883 (Bailey 1948); a flock 500 km west of the known breeding area (Buturlin 1906) and another at Spitsbergen in late April 1955 (Løvenskiold 1963) are stated as most unusual occurrences.

Birds have been observed, too early to have arrived from NE Siberia after successful breeding, near the Eurasian arctic archipelagoes, especially at Franz Josef Land where F. Nansen (Collett & Nansen 1900) met with large numbers and assumed that they bred. This possibility has been strongly refuted by Buturlin (1906; and in: Pleske 1928), referring to the absence of suitable habitats here, and the birds are generally considered to have been non-breeders.

Breeding is known to have occurred twice outside Siberia and West Greenland: Spitsbergen 1955 (Løvenskiold 1963) and Peary Land, North Greenland, 1979 (Hjort 1980). These records, from high arctic localities 10° farther north than the Siberian breeding grounds, demonstrate that the species is not necessarily confined to rich wet-land habitats, as believed by Buturlin, and once again raise

the question of breeding on Franz Josef Land, as stressed by Hjort (1980).

Apart from Franz Josef Land, the Canadian arctic is an obvious place to seek an unknown population of Ross's Gulls. Its presence here has been proposed by Salomonsen (1950) and Snyder (1957), and it is of course an attractive recruiting area for the West Greenland birds. This vast area is so poorly known that the possibility cannot be excluded, although there is nothing to support it. In fact there are very few Canadian records of the species. The scattered sightings outside the Eurasian arctic and West Greenland, summarized by Densley (1977), seem if anything to indicate an eastern origin of the Greenland birds, with arrival either north or south of Greenland.

Notwithstanding the possible existence of regular breeding grounds outside Siberia the species might well be in an expanding phase at the moment. Indications of this are, apart from the renewed occurrence in West Greenland, the birds observed in North and East Greenland in later years, including a breeding pair, and the several records from Britain in the sixties and seventies (Densley 1977), not to be explained away as the result of increased ornithological activity alone.

SUMMARY

A breeding pair of Ross's Gulls was found in June 1979 in Disko Bay, West Greenland, incubating a single egg. The habitat and nest are described. This is the third breeding record from the area and the first in this century. It is suggested that a small breeding population is established in the area, possibly as a result of an ongoing expansion of the species.

ACKNOWLEDGMENTS

We are grateful to dr. Finn Salomonsen for interesting discussions on the subject. Dr. Jon Fjeldså allowed us to examine the specimens of the Zoological Museum in Copenhagen, and kindly read and criticized the manuscript.

ADDENDUM

Six pairs of Ross's Gulls were found breeding at Queen Elizabeth Is., high arctic Canada,

1978 (P. & E. Grandjean, Naturens Verden, 23-25, 1980).

DANSK RESUME

Rosenmågen *Rhodostethia rosea* fundet ynglende i Disko Bugt, Vestgrønland, 1979

Den 13. juni 1979 fandtes et par Rosenmåger ynglende på Grønne Ejland, en øgruppe i den sydøstlige del af Disko Bugt. Reden var anbragt på inder-siden af en strandvold, helt fri af vegetation og mindre end én meter fra kanten af en salt lagune, der ved normal vandstand var afskåret fra havet. Der var kun et enkelt æg, der næppe var helt nylagt og derfor formodes at udgøre hele kullet. Det normale kuld er på tre, men kuld på to eller ét æg er ikke ukendte.

Fuglenes udseende svarede godt til tilgængelige beskrivelser, idet dog den rosa farve var ganske svag. Flugten var let og noget flagrende. Fuglene var meget tavse, den eneste stemmeytring, de lod høre, var en række korte »tørre« lyde, hvilket åbenbart var et advarselskald. Fuglene var ikke særlig sky, flugtdistancen var ca. 25 m. Den rugende fugl gik dog af reden allerede på en afstand af omkring 75 m.

Stedet er yngleplads for talrige Havterner, der på dette tidspunkt netop havde begyndt æglægningen. Ternerne var ret aggressive over for mågerne og mobbede dem ved flere lejligheder; dette generede tydeligvis mågerne, når de stod på jorden, men ikke når de var på vingerne.

Da vi vendte tilbage 26. juni var reden tom og fuglene intetsteds at finde. Sandsynligvis er reden plyndret under indsamling af terneæg, hvilket der er gamle traditioner for på stedet.

Arten har tidligere ynglet i området, i hvert fald 1885 (ved Ikamiut, ca. 20 km S for Grønne Ejland) og sandsynligvis også omkring 1880 (hvorfra dog ingen æg er bevaret). Enkelte fugle, alle udfarvede og fra månederne maj-juli, er truffet i Disko Bugt frem til århundredskiftet og igen nogle gange efter midten af dette århundrede, mens arten tidligere i dette århundrede forekom ret hyppigt i Godthåbsfjord. Det antages, at der i Disko Bugt tidligere fandtes og nu igen er etableret en lille bestand.

Rosenmågen er i øvrigt kun kendt som ynglende i et begrænset område i NØ Sibirien, hvor den findes i sumpede omgivelser nord og syd for trægrænsen, mens den tilsyneladende overvintrer i det Arktiske Hav. Et ynglefund 1955 på Spitsbergen og et 1979 i Peary Land viser dog, at ynglen kan forekomme i højarktiske omgivelser. Dette sammen med de vestgrønlandske ynglefund lader formode, at det sidste ord om artens udbredelse ikke er sagt endnu. I øvrigt synes de talrige britiske forekomster inden for de senere år at antyde, at arten i øjeblikket er under ekspansion.

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MS received 13th November 1979

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