Moult Migration of Pinkfooted Goose *(Anser fabalis brachyrhynchus* BAILLON*)* from Iceland to Greenland

Af

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Med et dansk resumé: Fældningstræk af Kortnæbbet Gås (Anser fabalis brachyrhynchus BAILLON) *fra Island til Grønland.*

(The Daneborg-Expedition 1964)

From 18th April to 20th July 1964 BENNY GENSBØL, NIELS THOMAS ROSENBERG and the present author investigated the bird-life at Wollaston Forland, Northeast Greenland. The base camp of the expedition was the meteorological station Daneborg, 74° 18′ N., 20° 15′ W. A general account of the expedition will be published elsewhere, but the observations of Pinkfooted Geese *(Anser fabalis brachyrhynchus)* made during the expedition deserve a special record. A preliminary report has already been published (CHRISTENSEN, GENSBØL and ROSENBERG 1965).

In the present paper observations, together with literature data and ringing results, are used to elucidate the hitherto little known moult-migration performed by non-breeding Pinkfeet from Iceland to Northeast Greenland.

The expedition was supported by the Commission for Ornithological Investigations in Greenland. The members of the expedition are very grateful for the assistance and advice received from the Commission, the Ministry of Greenland, and the Carlsberg Foundation for various arrangements, contacts and for economic support. The members of the expedition also owe a debt of gratitude to the late Professor, Dr. phil. RAGNAR SPÄRCK, whose never failing interest and encouragement were of great importance to the expedition. The members of the expedition finally wish to thank the crew at Daneborg for cordial hospitality and for much assistance.

DISTRIBUTION, SIZE OF POPULATION, MIGRATION

The Pinkfooted Goose breeds in Northeast Greenland, Iceland and Spitzbergen and has therefore been regarded as the western representative of the Bean Goose (*Anser fabalis* ssp.), which is distributed in the northern forest-zone and in the tundra-zone throughout the palaearctic region. The Pinkfoot does not share breeding areas with the other members of the *fabalis*-group. The morphological characters of the Pinkfoot are sufficiently clear-cut to enable identification in the field; even by the voice the Pinkfooted Goose can be distinguished from the Common Bean

Goose *(Anser f. fabalis)*. Nevertheless, the Pinkfoot is only classified as a subspecies of the Bean Goose.

The breeding places in East Greenland and Spitzbergen were first discovered in the latter half of the 19th century. A species of grey geese had been supposed to breed in the interior of Iceland for a long time, but they were not identified as Pinkfeet until 1929 (SCOTT *et al.* 1951/52).

No significant progress as to the knowledge of population size, migration etc. was made until 1950–1960. Intensive ringing of Pinkfeet, mainly sponsored by the British Wildfowl Trust, has yielded many hundred recoveries which show that the Greenland[1]) and Iceland Pinkfeet winter in Scotland and England. From detailed inventories on the roosting places in the British Isles made in November of the years 1957–1962, it is now known that the number of Pinkfeet wintering there fluctuates between 47,000 and 57,800 (BOYD 1961). Since only one out of 580 Pinkfeet ringed in Spitzbergen has been recovered from England as against 141 recoveries from the continent (HOLGERSEN 1960), it may be concluded that the Pinkfeet wintering in the British Isles are mainly of Greenland and Iceland origin, and since no other wintering areas exist for these populations, it can be concluded that their total number is approximately 50,000 in autumn.

The number of Pinkfeet returning to the Greenland and Iceland breeding places in spring must be smaller than 50,000. The annual mortality for first-winter Pinkfeet is 41%, for older geese 26%. Since first-winter Pinkfeet constitute about 40% of the Pinkfeet arriving to the British Isles in autumn, (SCOTT *et al.* 1953/54), it can be calculated that 32% of a given population will decease during one year. Most of the losses probably occur during winter. It would therefore appear that 20–30% of the Pinkfeet present in November in the British Isles are missing on the breeding places in the arctic next spring. Consequently the number of Pinkfeet in Greenland and Iceland in spring is not higher than 40,000.

About half of this number is known to belong to the large colony at Thjorsarver in Central Iceland. On the Wildfowl Trusts's second expedition to Central Iceland in July and August 1953, the Thjorsarver colony was estimated to contain 8,200 adults (SCOTT *et al.* 1953/54). To this number should be added the number of non-breeders, *i.e.* one- and two year old geese, which are absent from the colony during July and August. According to SCOTT (1953) more than half of a spring-population of Pinkfeet are non-breeders. This statement is corroborated by PALUDAN's data for the Grey Lag-Goose *(Anser a. anser)*, from which it appears that 63% of the total spring-population are non breeders (PALUDAN 1965, pp. 8–9). From these informations it can therefore be deduced that the spring-population at Thjorsarver had a size of about 20,000 Pinkfooted Geese in 1953.

All other colonies of Pinkfoot recorded from Greenland and Iceland are very small compared to Thjorsarver, and totally they would not constitute more than a thousand nest-sites. It is therefore not possible to place the remaining 20,000 Pinkfeet with certainty. Nevertheless, it is a widely accepted idea that the great majority of the British winter stock is of Iceland origin, with only a minority belonging to Greenland (SCOTT and FISHER 1953, USPENSKI 1965). This latter view will be dealt with below, *cf.* p. 63.

[1]) In view of the conclusion of the present paper, adult Pinkfeet marked in Greenland could be Icelandic birds. It is therefore of interest to learn that two Pinkfeet recovered in Scotland 1955 (SALOMONSEN 1957) were ringed in East Greenland as goslings (Zoological Museum, Copenhagen, *pers. comm.*).

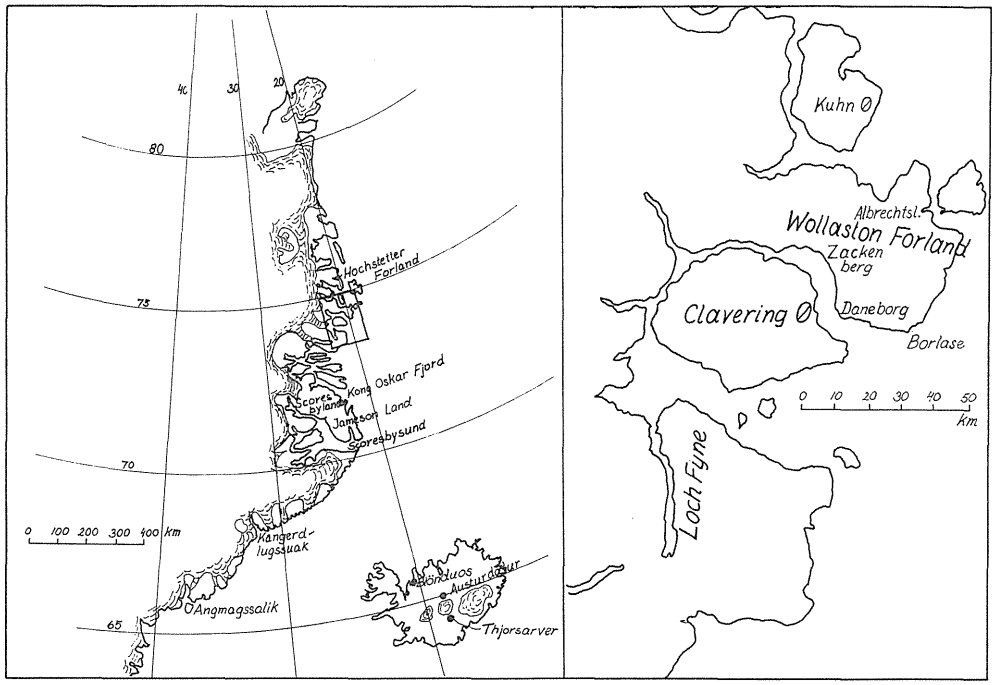

Fig. 1. Left: Map of East Greenland and Iceland. Right: Map of East Greenland between 73° and 75° N. The maps show place-names mentioned in the text.

Til venstre: Kort over Østgrønland og Island. – Til højre: Kort over Østgrønland mellem 73° og 75° N. På kortene er anført de stednavne, som er nævnt i teksten.

The Spitsbergen population migrates to the Danish, German, Dutch and, in severe winters, also to the Belgian and French coasts of the North Sea. As previously mentioned, there are 141 recoveries from these areas, based on 580 birds ringed in Spitzbergen. In spring up to 8,000 Pinkfeet may be observed at Ringkøbing Fjord in Denmark (Lind 1956). Of the more than 20,000 Pinkfeet ringed in Iceland and England only 6 were recovered in Denmark. On the other hand, of the 526 Pinkfeet ringed in Spitzbergen 1954, 22 were recovered in Ringkøbing Fjord (Fog 1965). The 8,000 Pinkfeet in Ringkøbing Fjord are therefore presumably all from Spitzbergen, and probably represent the total spring-population for Spitzbergen. In October 1965 the number of Pinkfooted Geese roosting in Denmark was estimated to 14,500 (Fog 1966).

The six recoveries in Denmark of Pinkfeet ringed in Iceland, and the only Spitzbergen Pinkfoot recovered in England, indicate a slight mixing of the two groups. These few birds may be storm-drifted individuals, but they may also indicate a slight overlap of the wintering ranges in severe winters.

During Glacial periods an Atlantic tundra region may have been separated from a West-Siberian tundra region by an European ice-barrier. During such separation the Been Goose on the Atlantic tundra may have developed into the Pinkfooted Goose (*cf.* Johansen 1945). The separation of the Greenland-Iceland stock from the Spitzbergen stock must be of

more recent origin, probably connected with the post-glacial period in which the North Sea was formed, the climate became warmer, and the tundra zone moved northwards. As shown by the ringing data, the separation of these two groups is now almost complete.

SURPLUS OF NON-BREEDERS IN NORTHEAST GREENLAND

The Pinkfoot has been found breeding in East Greenland in a fairly continuous range from Scoresbysund (70° N.) to the southern part of Hochstetter Forland (75° 30′ N.). Furthermore it has been found breeding in an isolated area at Kangerdlugssuak (68° N.). Thus its main distribution in East Greenland is in the high arctic region, although its breeding places in Iceland would designate it as a low-arctic form (SALOMONSEN 1950).

Many observers in Greenland have mentioned that non-breeding Pinkfeet are present near the breeding places as well as rather far away from the breeding grounds. It is interesting to see that most of these observers have noticed a very high proportion of non-breeding Pinkfeet; when numbers are stated the proportion is always much higher than the 63% mentioned above. PEDERSEN (1926) observed a great number of non-breeding Pinkfeet near the colony at Hurry Inlet not far from Scoresbysund. He furthermore recorded that the major part of Pinkfeet observed in Hochstetter Forland were non-breeding, younger birds (PEDERSEN 1934). In August 1956 observations were made on geese in various localities between Loch Fyne and Kong Oscar's Fjord. 1400 adult Pinkfeet were counted, but only 12 families with goslings were seen. The phenomenon was ascribed to a very bad breeding season (GOODHART and WRIGHT 1956). In July and August 1961 a goose-ringing expedition stayed in Jameson Land and observed 1100–1400 adult Pinkfeet, but only 29 goslings. Again poor breeding success was assumed to account for the disproportionately large number of non-breeders (MARRIS and OGILVIE 1960). During the Oxford expedition to Scoresby Land July–September 1962 a total of 360 adults and no goslings were observed. The observers found that a probable explanation was that Scoresby Land was chiefly frequented by non-breeders, probably including immigrants from Iceland (HALL 1962).

It is of course possible that one or two of these instances is due to bad breeding success or even a non-breeding year; however, it is very improbable that this should be the case for all of them. At any rate, such frequent occurrence of bad breeding success would finally result in complete extinction of the Greenland Pinkfeet, unless there were some years with abnormally high breeding success, and no such instance has been reported.

During our expedition to Wollaston Forland in 1964 it was also noticed that in late June and July the number of non-breeding Pinkfeet was exceedingly high compared to the number of breeders. Thus on 28th June 80 Pinkfeet in flocks grazed on Albrechtsslette, but only one pair was found on nest. Similarly, on 11th July a compact flock of 137 flightless Pinkfeet was observed at Zackenberg, not far from a group, consisting of 6–7 pairs of adults, accompanying 20 goslings.

Due to the early arrival, the 1964-expedition could ascertain *first* that the excess of non-breeders did not become apparent until the end of June, and *second*

that a conspicuous northward migration of Pinkfeet took place over Wollaston Forland in the period 18th June–12th July.

To demonstrate the first point it may be mentioned that by 20th June 12–15 nest-sites had been localised, and not more than 50–70 Pinkfeet stayed in the areas.

As regards the second point observations of northflying skeins of Pinkfeet were made at Albrechtsslette by ROSENBERG and the present author from 22nd to 29th June. Totally 197 Pinkfeet flew northward. On 24th June a particular skein of 49 Pinkfeet was followed with fieldglasses (10 × 50), until they could not be seen. This observation lasted ten minutes, and during that time the geese kept a steady northerly course.

During 18th June–12th July similar observations of north-flying Pinkfeet were made at the weather station Daneborg, mainly by GENSBØL, a total of 787 Pinkfeet were observed flying northwards. This summer passage was on a much larger scale than the spring migration, which had been observed on the same locality a month earlier, when the attention of the expedition members had been far more focused on visual migration. It is also suggestive that no Barnacle Geese *(Branta leucopsis)* were seen in this summer passage, although the species was common in the surroundings, and had been seen migrating northward in spring.

In 1955 an ornithologically interested member of the crew at Daneborg made detailed notes, showing that a total of 700 Pinkfeet passed northward at Daneborg between 23rd June and 4th July (CONRADSEN 1957). It will be seen that the number as well as the period correspond well to the observations of 1964. If this migration is of annual occurrence, one may ask why it has not been recorded more often. An important reason is that so few ornithologists have been in these parts of Greenland at the proper time of year; it is impossible to go by ship to East Greenland until the middle of July.

The time of the movement, and the appearance of flightless flocks immediately after, show that it is a moult-migration of non-breeders.

When considering the possible origin of these birds various difficulties arise. A thousand non-breeders might originate from more southern Greenland breeding places. However, it is not likely that all birds actually passing a certain locality are discovered by fairly casual observations. Furthermore, if these geese came from more southern Greenland breeding places it becomes increasingly difficult to understand, why the various expeditions in more southern districts referred to above always found an abundance of non-breeders in July. In view of these difficulties it seems worthwhile to consider the possibility that immigration from places outside Greenland occurs at mid-summer time, and since the Spitzbergen population is isolated from the Greenland-Iceland population, it would appear most promising to look for emigration from Iceland.

EVIDENCE OF MOULT MIGRATION FROM ICELAND

The idea that non-breeders from Iceland perform a summer moult-migration to East Greenland was already set forth by TAYLOR (1953). From 22nd June to 3rd July 1952 TAYLOR observed a total of 348 Pinkfeet in skeins of 9–63, flying northwestward in Austurdalur, *i.e.* some 50 km north of Thjorsarver. Furthermore, a fall in the number of roosting Pinkfeet was noticed at the same locality, from 200 at

the end of June to 32 at the beginning of July. TAYLOR suggested that the destination of these birds, which he considered non-breeders in the pre-moult stage, was Greenland rather than the north of Iceland. Direct flights north and out to sea were observed on 30th June 1952 at Blönduos on the north coast of Iceland.

In an addendum to TAYLOR's record PETER SCOTT supported this view by pointing out that no extensive moulting ground for non-breeding Pinkfeet had been found in Iceland (SCOTT 1953). During the Wildfowl Trust's expedition to Iceland in 1953 only 750 full-grown geese without accompanying goslings were seen (the number of ringed geese was 4144 adults and 4861 goslings). This does not exclude that non-breeders might have been present among the adults, accompanying the goslings, and, in fact, it has been shown that some two-year old birds stay at the colony throughout the summer. However, yearlings are so infrequently met with that most probable they spend the summer somewhere else (SCOTT *et al.* 1953/54).

The deficit of non-breeders at the Icelandic breeding place during that season, when there is a surplus of non-breeders on Greenland, together with the coinciding migration periods at Austurdalur in 1952, and at Daneborg in 1955 and 1964, strongly support the supposition of a moult-migration from Iceland to Northeast Greenland.

THE EVIDENCE FROM RINGING RECOVERIES

None of the 383 adults and 769 goslings marked at Thjorsarver during the Wildfowl Trust's first expedition to Central Iceland were recovered in Greenland.

Better results were obtained during the Wildfowl Trust's second expedition in 1953, when 4144 ad. and 4861 pull. were marked. (Courtesy by Ringing Department, Zoological Museum, Copenhagen):

Reykjavik 28560	pull. marked	21/7/53	Thjorsarver
	shot	24/6/54	Kap Hope, Scoresbysund.
Reykjavik 29189	pull. marked	21/7/53	Thjorsarver
	shot	5/8/55	Hurry Inlet, Scoresbysund.
Reykjavik 210858	pull. marked	29/7/53	Thjorsarver
	shot	17/7/54	Borlase Warren, Wollaston Forland.
Reykjavik 210035	pull. marked	29/7/53	Thjorsarver
	shot	17/7/54	Borlase Warren, Wollaston Forland.
Reykjavik 13297	ad marked	4/8/53	Thjorsarver
	shot	5/5/58	Sermilik, Angmagssalik.

It will be seen that four of these recoveries relate to one- and two-year old Pinkfeet marked in Iceland as goslings. These four recoveries are from the period 24th June–5th August, which corresponds well to the season in which the northward migration and the surplus of non-breeders have been observed in Greenland. Two of the one-year old birds have been recovered at Borlase Warren, 25 km east of Daneborg, and 1100 km north of the place, where they were hatched.

In connection with the observation data, these recoveries are strong evidence in support of TAYLOR's suggestion. On the other hand, four recoveries out of 4861

marked goslings only represent 0.1%, which is a very low figure when dealing with wildfowl, and the recoveries are therefore too few to yield an undisputable proof for a massive moult-migration.[1])

A direct proof of a grand-scale moult-migration could be obtained either by observations along the north coast of Iceland at the proper season, or preferably, by marking a large number of goslings at Thjorsarver with coloured neckbands and by making observations in East Greenland next summer, if possible covering large areas by helicopter. It is not feasible to catch the geese in Greenland on a large scale such as has been done in Iceland.

MOULT-MIGRATION AND COLONIZATION

It appears from the above that ample evidence supports the hypothesis that non-breeding Iceland Pinkfeet migrates to Northeast Greenland by the end of June and beginning of July; furthermore there are reasons to believe that a large part, perhaps the total amount, of non-breeders in Iceland performs this migration. It is worth mentioning that an analogous case of moult-migration is known to exist among other arctic geese; the non-breeding Bean Geese migrate in summer from Northern Russia and Siberia to Novaja Zemlja (JOHANSEN 1959).

When the Icelandic Pinkfeet start their emigration they leave behind them excess of grassland to nourish the goslings, which are hatching at that time. When the geese arrive at Northeast Greenland, snow-melting is at its maximum, and ample areas become accessible to the immigrants. It is likely that they spread over the plains of the entire coast land, from Scoresbysund to Hochstetter Forland. This does not necessarily mean that all migrants and moulting non-breeders observed in Northeast Greenland at this time of year are from Iceland, for the possibility cannot be excluded that Greenland non-breeders perform a similar migration.

In the present author's view the moult-migration has been an important factor in the colonization of East Greenland, especially if the moult-migration from Iceland to Greenland took place before the Pinkfeet started breeding in Greenland. The pioneers of the Greenland breeding stock most probably arrived by prolonged spring-migration (*cf.* NØRREVANG 1963), but the probability that mature birds would perform such migration flight would be increased, if they already had spent two summers in Greenland during their immature period.

This role of the moult-migration in population dynamics would appear identical with that commonly attributed to post-juvenile movements observed in other groups of birds, *e.g.* herons, raptors and passerines. It might be said that moult-migration is a special case of post-juvenile movements.

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[1]) The recovery chance is bound to be very low for any bird in Northeast Greenland. The number of human beings from Scoresbysund and northwards is about 500–700, and in July and August the birds have many thousand square kilometres at their disposal. There are additional reasons why moulting geese in July rarely should be killed. They are extremely shy, and they moult at a time that is too late for sledge-driving, and too early for motor-boat-sailing.

During the winters from 1950 to 1960 a total of 11,820 Pinkfeet were ringed in England (British Birds **53** (1960) p. 461). Of these only 15 have been recovered in Greenland (Zoological Museum, Copenhagen, *pers. comm.*).

THE GREENLAND POPULATION

It has been shown above that about 20,000 Pinkfeet arriving in Iceland and Greenland in spring cannot be properly accounted for. The number of recorded nest-sites outside Thjorsarver, as summarised by SCOTT and FISHER (1953), does not correspond to more than about 500 breeding pairs for Greenland, and a similar number for Iceland. Since a thousand breeding pairs correspond to about 5,500 geese in spring, there is still a deficit of 14,500 birds.

In the present author's opinion this deficit is probably due to errors in countings and estimates at Thjorsarver and in the British Isles, to unknown breeding places or insufficiently known breeding places in Iceland, and, perhaps, to a slight increase in the total population between 1953 and 1957–62. It is more than probable that unknown colonies exist in Greenland, but it is unlikely that they should contain a significant contribution to the 14,500 geese. The colonies recorded from Greenland are generally small, mostly about a dozen nests or less, single breeders are often met. The largest colonies recorded are one at Loch Fyne, which contained 40 nests in 1938, and one at Hurry Inlet, which contained 30 pairs in 1928 (SALOMONSEN 1950). The latter was reported to contain 150–200 nests in 1933, but this figure is based upon a somewhat problematic extrapolation; the actual number of nest-sites recorded by the observer was 15–20, of which only a few had eggs, and the colony was not visited after the 29th May, *i.e.* at a time when the birds hardly can have settled at the colony (*cf.* TCHERNIAKOFSKY 1939).

One might object that unknown breeding grounds for Pinkfeet exist on the vast cost-plains and in the valleys of the desolate Northeast Greenland. However, these areas are mostly covered with snow until the end of June or later, which creates far less favourable conditions than those prevailing in Iceland. It should also be borne in mind that many Norwegian and Danish trappers worked in these areas during the first half of the present century, and geese and their eggs were not without importance to these people. It is therefore unlikely that any large colony of Pinkfooted Geese could have remained unknown under such conditions, especially so since at least one ornithologist, ALWIN PEDERSEN, was in contact with these trappers during his stays in East Greenland.

Definite conclusions regarding the size of the Greenland population of Pinkfeet can hardly be made on the available meagre information. It is a further complication that the existence of the large Icelandic breeding colony was unknown to the pioneer ornithologists in East Greenland; one would like to know how they would have interpretated their observations, if Thjorsarver had been discovered and explored at the beginning of this century. However, the present author would tentatively suggest that the number of breeding pairs in Greenland does not exceed a thousand, which under normal conditions would correspond to 5,500 birds in spring. This would mean that the Iceland population should be not less than 30,000 birds, and if half of these performs a moult-migration to Northeast Greenland at midsummer time, it will be evident that the local birds only constitute a quarter of the Pinkfeet present in Greenland in July and August.

It would be of interest to know more about the Greenland Pinkfooted Geese, especially about their numbers, breeding success and the ratio between the numbers of breeders and non-breeders. Investigation on these subjects should preferably be carried out in May and June, before the immigrants arrive from Iceland and complicate the situation.

Such investigations could possibly also be used to elucidate the problem, whether the Greenland Pinkfooted Geese constitute an independent population adapted to high-arctic conditions, similar to the Spitzbergen-population, or whether they rather should be considered as a part of the Icelandic population breeding on a secondary territory.

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DANSK RESUMÉ

Fældningstræk af Kortnæbbet Gås (Anser fabalis brachyrhynchus BAILLON) *fra Island til Grønland.*

Under Daneborg-Ekspeditionen til Nordøstgrønland fra d. 18. april til d. 20. juli 1964, iagttog deltagerne (BENNY GENSBØL, NIELS THOMAS ROSENBERG og forfatteren) ved flere lejligheder Kortnæbbede Gæs på træk fra sydligere områder midt på sommeren. Disse iagttagelser er i denne afhandling sammenholdt med angivelser fra litteraturen samt med ringmærkningsdata, og findes at give støtte for en antagelse, oprindelig fremsat af TAYLOR (1953), at ikke-ynglende Kortnæbsgæs fra Island trækker til Nordøstgrønland for at fælde i juli og august.

Udbredelse, størrelse af populationer, træk

Der gøres rede for, at den islandske og nordøstgrønlandske bestand trækker til Skotland og England for at overvintre, medens bestanden på Spitzbergen trækker til Nordsø-kysterne i Tyskland og Holland. De to bestande vises at være næsten fuldstændigt isolerede fra hinanden; mulighed for en svag sammenblanding af vinterkvarterne i særlig strænge vintre kan dog ikke udelukkes.

Den islandske og grønlandske bestand udgør tilsammen ca. 40.000 individer ved ankomsten til ynglepladserne. Til baggrund for dette tal ligger bestandstællinger på de britiske vinterkvarterer, samt oplysninger om dødelighed. Af disse 40.000 kan de 20.000 henføres til verdens største koloni af Kortnæbbede Gæs, der ligger ved Thjorsarver i det indre af Island. Denne koloni blev grundigt undersøgt i juli–august 1951 og 1953 af PETER SCOTT og medarbejdere. I 1953 ringmærkedes 4861 gæslinger og 4144 gamle fugle. Bestanden af gamle fugle opgjordes til omkring 8200 individer. Til dette tal skal lægges antallet af ikke-ynglende gæs, der ifølge SCOTT's redegørelser har forladt ynglepladsen i juli og august. Blandt andet med erfaring fra bestande af Grågås (PALUDAN) kommer man til, at den samlede forårs-bestand ved Thjorsarver må tælle omkring 20.000 fugle.

De resterende 20.000 fugle kan ikke nøjere placeres. En detailleret opgørelse af offentliggjorte ynglefund fra Grønland og Island (uden for Thjorsarver) synes ikke at rumme plads for mere end ca. 500 ynglepar for Grønland og 500 for Island (SCOTT og FISHER). Ikke desto mindre er det en udbredt opfattelse at langt de fleste af de i Skotland og England overvintrende Kortnæbbede Gæs hører hjemme på Island, og at kun en lille del er fra Grønland. Dette spørgsmål omtales igen nedenfor.

Spitzbergen-bestanden tæller omkring 8000 fugle om foråret.

Man må med JOHANSEN tænke sig, at den Kortnæbbede Gås opstod af en sædgåse-population, der under en europæisk istid isoleredes i de tundraområder, der dengang lå over Nordsøen og De britiske Øer. Forfatteren forestiller sig, at adskillelsen af den islandsk-grønlandske population fra den population, der yngler på Spitzbergen, er af nyere dato; sandsynligvis er den sket efter istiden, da Nordsøen opstod som hav og tundra-regionerne rykkede nordpå.

Overskud af ikke-ynglende Kortnæbbede Gæs på Grønland

Der gennemgås en række ekspeditionsrapporter fra forskellige somre og forskellige områder i Østgrønland. Mange iagttagelser viser usædvanligt høje tal af ikke-ynglende gæs i juli og august i forhold til tallene af ynglende gæs.

Der nævnes også observationer fra ekspeditionen i 1964. Her sås ved Zackenberg d. 11. juli 137 afslåede gæs sammen med 6–7 ynglepar med gæslinger. Ekspeditionen var imidlertid så tidligt i området, at det kunne fastslås, at de store antal ikke-ynglende Kortnæbsgæs først viste sig omkring slutningen af juni. Der blev endvidere iagttaget et betydeligt antal Kortnæbbede Gæs på træk på vej nordover i tiden fra d. 18. juni til d. 12. juli. Således optaltes ved Daneborg ialt 787 Kortnæbbede Gæs på træk. Et lignende fænomen er tidligere rapporteret fra Daneborg (CONRADSEN). Tidspunktet viser, at det drejer sig om et fældningstræk. Man kunne tænke sig, at det drejer sig om gæs fra ynglepladser sydligere i Østgrønland, men det bliver i så fald endnu vanskeligere at forstå, at ekspeditioner fra disse områder i juli og august har noteret store mængder ikke-ynglende gæs. Tilbage bliver muligheden for et fældningstræk, der også omfatter ikke-ynglende gæs fra Island.

Fældningstræk fra Island

Der foreligger en række iagttagelser fra områder i det nordlige Island, der tyder på et nordgående fældningstræk i tiden 22. juni til 3. juli 1952 (TAYLOR). Trækperioden ses at stemme godt med iagttagelserne ved Daneborg i 1964. PETER SCOTT hævder, at de ikke-ynglende gæs, der er væk fra Thjorsarver om sommeren, vanskeligt vil finde egnede områder på Island, hvor de kan fælde.

Ringmærkningsdata

Af de ca. 9000 gæs der blev mærket på Island i 1953, er 5 genfundet på Grønland. Tre af disse var mærket som gæslinger og blev fundet året efter. Endnu en gæsling blev fundet to år efter. En gammel fugl mærket på Island blev nedlagt på Grønland 5 år efter.

Disse fund viser, at i alt fald ét-års fuglene kan trække til Grønland og fælde. To af disse ét-års fugle blev iøvrigt genfundne ved Borlase Warren, 1100 km nord for Thjorsarver, på en lokalitet der var omfattet af 1964-ekspeditionens rejser.

Et fuldstændigt fyldestgørende bevis for at fældingstrækket omfatter en stor del, eller måske hovedparten af den ikke-ynglende islandske population, kræver mærkning i stor stil af gæslinger på Island, helst med farvede halsringe, og der må derpå i de følgende somre gøres iagttagelser på Østgrønland, sandsynligvis ved hjælp af helikopter, således at store arealer kan gennemsøges.

Fældingstræk og kolonisering

Der peges på, at dette fældingstræk er ganske analogt med det de sibiriske og russiske ikke-ynglende Sædgæs foretager til Novaja Zemlja om sommeren (JOHANSEN).

Det er forfatterens opfattelse, at fældingstrækket Island-Grønland har været af stor betydning for opståelsen af den grønlandske bestand. Man må forestille sig, at fældingstrækket til Grønland er af ældre dato end den grønlandske ynglebestand. Trækvanen fra den ikke-kønsmodne periode har formentlig ofte ført til, at fuglene som kønsmodne individer har foretaget forlænget træk til Grønland. Fældingstrækkets funktion har altså været at udforske nye yngleområder, en funktion, der også har været nævnt i forbindelse med andre former for ungfugle-spredningstogter eller trækbevægelser inden for andre fuglegrupper.

Den grønlandske population

Det er forfatterens opfattelse,at de 20.000 Kortnæbbede Gæs, der ikke hører hjemme i Thjorsarverkolonien, kun for en ringe dels vedkommende, muligvis omkring 5000, er hjemmehørende i Grønland. De resterende må formentlig tilskrives fejl i optællinger og foretagne korrektioner, undervurdering af andre islandske bestande, og muligvis også det faktum, at optællingerne i Thjorsarver foregik i 1953, medens optællingerne i England ligger nogle år senere.

De grønlandske kolonier er som regel ganske små, på et dusin eller derunder. Kun to kendes med lidt højere redetal, en ved Loch Fyne på 40 reder, og en ved Hurry Inlet nær Scoresbysund. Angivelserne for den sidste har været helt oppe på 200 par, men dette tal synes ikke tilstrækkelig godtgjort, og kolonien er i andre år vurderet til kun 30 ynglepar. Det er forfatterens opfattelse, at hvad der ellers måtte findes af ukendte kolonier i Østgrønland vil være af lignende beskedne dimensioner. Snesmeltningen i disse egne ligger for sent på sommeren til at området kan bebos af store mængder gæs. Det må heller ikke glemmes, at i første halvdel af dette århundrede var ret mange fangstmænd beskæftigede i disse områder, og ornithologen ALWIN PEDERSEN,som i flere år rejste rundt i Nordøstgrønland, var i kontakt med disse fangstmænd. At en større koloni skulle kunne forblive uopdaget under disse forhold, forekommer ikke sandsynligt.

Med kun ca. 5000 Kortnæbbede Gæs hjemmehørende på Grønland, kommer den islandske bestand op på 25–30.000 individer eller mere, og hvis halvdelen af disse trækker til Grønland om sommeren, udgør den grønlandske bestand kun en fjerdedel af de Kortnæbbede Gæs, der befinder sig i området i juli og august.

Det ville være interessant at vide mere om de grønlandske Kortnæbbede Gæs; især om deres antal, deres ynglesucces og forholdet mellem antallet af ynglende og ikke-ynglende gæs. Undersøgelser med henblik på dette, burde navnlig foretages i maj og juni, før fældingstrækket fra Island sætter ind og tilslører forholdene.

Sådanne undersøgelser kunne muligvis også kaste lys over spørgsmålet om, hvorvidt den grønlandske bestand udgør en selvstændig stamme, tilpasset de højarktiske forhold, eller om den i væsentlig grad består af islandske Kortnæbbede Gæs, der yngler på en sekundær biotop.

MS received 21st September 1966

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