

Bird-Banding in Greenland

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ABSTRACT. Bird-banding, a Danish development, started in Greenland in 1926 under Dr. A. Bertelsen. After World War II, a formal bird-banding program was initiated in Greenland by Dr. Finn Salomonsen, who had awakened the interest of the Greenlanders. In this program, Danish government administrators select people in each district to band birds on a payment system. In recent years, however, interest has declined among the local population and to maintain the bird-banding work, special expeditions have had to be sent out from Copenhagen. From 1946 to 1965, 89,258 birds were banded in Greenland; of these, 6,542 were later recovered (5,947 in Greenland and 595 outside Greenland). From 1966 to 1968, 26,758 more birds were banded, bringing the total to 116,016 for the period of twenty-three years.

RÉSUMÉ. *Baguage des oiseaux au Groënland.* Au Groënland, le baguage des oiseaux, initiative danoise, a débuté en 1926 avec le Dr A. Bertelsen. Après la seconde guerre mondiale, le Dr Finn Salomonsen entreprit un programme officiel de baguage, qui éveilla l'intérêt des Groënlandais. Selon ce programme, les administrateurs du gouvernement danois choisissent des citoyens de chaque district pour baguer les oiseaux sur la base d'une rétribution. Au cours des récentes années cependant, l'intérêt a décliné parmi la population locale et pour maintenir le travail de baguage, il a fallu envoyer de Copenhague des expéditions spéciales. De 1946 à 1965, 89,258 oiseaux ont été bagués; de ceux-ci, 6,542 ont été retrouvés par la suite (5,947 au Groënland et 595 ailleurs). De 1966 à 1968, 26,758 nouveaux baguages ont été réalisés, pour un total de 116,016 en 23 ans.

РЕЗЮМЕ. *Кольцевание птиц в Гренландии.* Кольцевание птиц было впервые применено в Гренландии в 1926 г., однако систематическая работа в этой области была начата лишь после Второй мировой войны. Кольцевание осуществляется птицеловами, назначаемыми местными представителями датского правительства. Первоначально работа велась с активным участием местного населения, но за последнее время интерес гренландцев к этому мероприятию ослабел и для продолжения работы необходимо было выслать специальные экспедиции из Копенгагена. В период с 1946 по 1965 гг. было закольцовано 89258 птиц, из которых 6542 птицы были потом снова пойманы (5947 в самой Гренландии и 595 за ее пределами). В период с 1966 по 1968 гг. было закольцовано еще 26758 особей. Таким образом в общей сложности за 23 года систематической работы было закольцовано 116016 птиц.

INTRODUCTION

Greenland is a former colony of Denmark; since 1953, however, it has been an integral part (a type of *amt*, or county) of the small Scandinavian country. Living on that far northern island, separated from the rest of Denmark by a long stretch of the North Atlantic Ocean, the Greenlanders have developed from Stone Age Eskimo hunters to a mixed race of industrious fishermen. The 40,000 Greenlanders elect two Members of Parliament to represent them in Copenhagen, have their own provincial council (*Landsråd*), and run most of their own local affairs. The main economic activity in Greenland is a modern cod and prawn fishery, largely pursued along the southwest coast, where over 90 per cent of the Green-

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landers live. Greenland is dominated by the massive inland ice cap (*indlandsis*), which covers all but a narrow coastal strip of the island.

Early Ornithological Studies

Scientific investigations in Greenland have been comparatively well developed. Ornithological studies are well represented, largely carried out in the past by colonial civil servants: doctors, missionaries, and administrators. Bird life in Greenland is mentioned in several early publications: *The King's Mirror* from the pen of an unknown author in the thirteenth century (Jónsson 1926, and Larson 1917); Ivar Baardsøn's mid-fourteenth century description (1845); and that written by Jonssøn from old manuscripts in the early seventeenth century (1732).

The first list of birds found in Greenland was provided by Greenland's colonizer and first missionary, Hans Egede (1741). Glahn (1771) presented a more complete systematic list of the birds of Greenland. It was Otto Fabricius in 1780 (Helms 1929), however, who first described the life history, habits, breeding biology, and economic importance to the Eskimos of many birds of Greenland. Like Hans Egede, both Glahn and Fabricius were missionaries in Greenland.

After 18 years' residence in Greenland, Inspector (for the Greenland Administration) C. Holbøll (1843) published an ornithological treatise, and between 1843 and 1881, Professor J. Th. Reinhardt published various articles on the birds of Greenland, including the ornithological appendix of Rink's (1857) classic book on Greenland.

RECENT ORNITHOLOGICAL STUDIES

In the late 1800's and early 1900's, Inspector E. C. Fencker, architect A. Hagerup (1891), Director of the Greenland Administration Knud Oldendow (1933), and Greenland service medical doctors Krabbe (1934), Helms (1926), Deichmann (1909), and Bertelsen (1921, 1932a and b) all made significant contributions through skin collections and studies of various birds in Greenland. Scientific work in East Greenland was carried out mainly by large expeditions. Through direct field observation or analysis of skin collections brought home by these expeditions, bird life in various parts of the east coast was described by Bay (1894), Manniche (1910, 1911), Pedersen (1926, 1930, 1934, 1942), Løppenthin (1932), the Norwegian H. Tho. L. Schaanning (1933), Degerbøl and Møhl-Hansen (1935), and Hørring (1939).

Two important contributions summarizing all available information about birds in Greenland were made by Herluf Winge (1898) and E. Lehn Schiøler (1925-31). Winge presented (pp. 3-37) a comprehensive list of all publications on Greenland's ornithology up to 1897. Winge, who had never visited Greenland (Oldendow 1935, p. 81), then listed and described the birds of Greenland, based on the Zoological Museum's skin collection and Fencker's ornithological notes (1879-93). Schiøler's contribution was the monumental, three-volume *Danmarks Fugle (The Birds of Denmark)*, part of which dealt with Greenland's birds, incorporating observations made during an extensive summer expedition to Greenland in 1925 (see Scheel 1927).

Of more recent date, the leading Danish ornithologist and dean of bird studies in Greenland, dr. phil. Finn Salomonsen, wrote the outstanding *Grønlands Fugle/The Birds of Greenland* (1950-51) in parallel column Danish-English, illustrated by the artist Gitz-Johansen. Salomonsen has authored a wealth of papers about birds in Greenland and recently published a book in Danish, *Fuglene på Grønland* (1967), outlining the results of recent banding work there. Salomonsen, incidentally, was a 16-year-old student assistant on Lehn Schiøler's 1925 Greenland expedition, so his work in the North now spans 45 years.

In summarizing this brief outline of ornithological work in Greenland, it should be emphasized that much of the important early work was carried out by laymen: missionaries, government civil servants, traders, and medical doctors. Even today, much of the ornithological work in Greenland, especially bird-banding, depends on the interest and skill of such people, with the strong local interest of the Greenlanders themselves.

BANDING

The Beginning

It is appropriate that the first bird-banding system on a regular basis in the Arctic began in Greenland, for the idea of banding birds was originated by a Danish schoolmaster from Viborg, Hans Christian C. Mortensen, known as "Fugle" ("Birds") Mortensen. In 1890, Mortensen tried to band starlings with rings of lead, but these proved too heavy for the birds. He then started using aluminium (on a merganser) and in 1899 banded 165 starlings with the lighter aluminium rings. Until his death in 1921, Mortensen had succeeded in banding some 6,000 birds (Jensen 1951).

Bird-banding in Greenland began on a small scale in 1926 with the work of Dr. Alfred Bertelsen, who had studied bird life in Umanak District as the regional medical doctor (Saxtorph 1951). Bertelsen was aided in his banding by the then Governor (*Landsfoged*) of South Greenland, Knud Oldendow. Interestingly enough, Oldendow had been a schoolboy under "Birds" Mortensen in Viborg (Oldendow 1933, pp. 17-18).

TABLE 1. Birds Banded in West Greenland under the direction of Dr. A. Bertelsen, 1926-1934.

Species	Banded	Recovered	%
Common eider, <i>Somateria mollissima</i>	87	31	36
King eider, <i>Somateria spectabilis</i>	2	1	50
White-fronted goose, <i>Anser albifrons</i>	13	5	38
Fulmar, <i>Fulmarus glacialis</i>	2	0	0
Kittiwake, <i>Rissa tridactyla</i>	381	48	13
Brünnich's murre, <i>Uria lomvia</i>	4	1	25
Lapland longspur, <i>Calcarius lapponicus</i>	29	0	0
Snow bunting, <i>Plectrophenax nivalis</i>	155	29	19
Common redpoll, <i>Carduelis flammea</i>	8	0	0
Total	681	115	17

Source: Bertelsen, A. 1948, p. 4.

In the period 1926 to 1934, Bertelsen and his cohorts banded 681 birds in West Greenland between Godthåb and Thule, with the help of local Greenlanders. The birds banded were of 9 species. Out of the 681 individuals banded, 115 (17 per cent) were recovered. Table 1 lists the species and recoveries.

As Table 1 indicates, the birds banded were mainly kittiwakes, snow buntings, and eider ducks. Bertelsen (1948, p. 10) noted that 80 per cent of the kittiwakes recovered were within their first 5 years of life. One kittiwake, however, was recovered at 10 years of age, another at 12 years, and a third was 16 years old. This last recovery was the highest documented living age for a kittiwake. These kittiwake recoveries provided an interesting observation on the suitability of aluminium bands. Bertelsen (1948, p. 10) stated that a new kittiwake ring averaged 68 cg. in weight. The band on the kittiwake recovered after 12 years weighed 34 cg.; the ring on the bird recovered after 16 years weighed 29 cg. Despite this attrition, the inscriptions on both bands could still be read with ease.

After 1935, and until an extensive post-war banding program began in Greenland in 1946, only 51 more birds were banded by the Danes (all during the period 1935 to 1939). These were banded by various workers. The birds banded were 46 Iceland gulls and 5 great black-backed gulls. In addition, other bandings were made in Greenland by foreign visitors. Among these miscellaneous foreign bandings were those by the German Herdemerten expedition in 1938. This expedition, described by Herdemerten (1939), banded an unknown number of kittiwakes in Umanak District. Two recoveries resulted from the German bandings.

Of ornithological interest from birds recovered in Greenland but banded elsewhere, Bertelsen (1948, p. 24) noted two snow buntings which were banded in winter at McMillan and Blaney Park, Michigan. These were recovered the following spring in West Greenland, one at Julianehåb and the other at Søndre Upernavik.

Another interesting recovery, although not of a banded bird, was a king eider duck shot at Godthåb in January 1897. In the duck's breast muscles was found an arrowhead of copper, which is believed to have originated among the Eskimos of Coronation Gulf, Northwest Territories, Canada (Krabbe 1909, p. 52; Bertelsen 1932b, p. 16).

Post-war Banding

Greenland was cut off from Denmark during World War II. After the war, a more formal bird-banding program was organized by Dr. Finn Salomonsen. The program was a cooperative effort between the Ministry for Greenland, Copenhagen University's Zoological Museum and, in Greenland, Danish administrative officials and local Greenlanders. The Ministry for Greenland recognized the economic significance to the Greenlanders of many birds, especially sea-birds. The Ministry's civil servants in Greenland have, therefore, become involved in leading the bird-banding program as part of their duties. The program is coordinated by the Zoological Museum, which distributes the bands and record books in Greenland (Salomonsen 1956a and b).

The working idea behind bird-banding in Greenland is that Danish government administrators pick out skilful and interested people from among the Greenlandic

TABLE 2. Species of Birds Banded in Greenland 1946-1965.

English	Latin	Danish	Greenlandic	Total banded	Total Recovered		
					Grld.	Other	Total
Red-throated loon	<i>Gavia stellata</i>	Rødstrubet Lom	Qarssâq	66	5	3	8
Common loon	<i>Gavia immer</i>	Islom	Tûgdlik	1	—	—	—
Fulmar	<i>Fulmarus glacialis</i>	Mallestuk	Qaqqudluk	4,707	193	11	204
Cormorant	<i>Phalacrocorax carbo</i>	Skarv	Oqaitsoq	797	212	—	212
Mallard	<i>Anas platyrhynchos</i>	Gråand	Qêrdlutôq	534	54	—	54
Old-squaw	<i>Clangula hyemalis</i>	Havlit	Agdleg	228	24	4	28
Common eider	<i>Somateria mollissima</i>	Ederfugl	Miteq sujarotôq	2,247	494	—	494
King eider	<i>Somateria spectabilis</i>	Kongeederfugl	Miteq sujarakitsoq	3,868	591	16	607
Harlequin duck	<i>Histrionicus histrion.</i>	Strømmand	Tôrnaviarssuk	10	1	—	1
Red-breasted merganser	<i>Mergus serrator</i>	Toppet Skallesluger	Pâq	65	5	—	5
White-fronted goose	<i>Anser albifrons</i>	Blisgås	Nerdleg	1,289	90	216	306
Pink-footed goose	<i>Anser fabalis</i>	Kortnæbbet Gås	Nerdleg	12	—	3	3
Barnacle goose	<i>Branta leucopsis</i>	Bramgås	Nerdlernaq	1,556	48*	129	177
Canada goose	<i>Branta canadensis</i>	Kanadagås		1	—	—	1
Gray sea eagle	<i>Haliaeetus albicilla</i>	Havørn	Nagtoralik	54	19	—	19
Peregrine falcon	<i>Falco peregrinus</i>	Vandrefalk	Kînalêraq	35	2	1	3
Gyr falcon	<i>Falco rusticolus</i>	Jagtfalk	Kiggsviarssuk	51	5	—	5
Rock ptarmigan	<i>Lagopus mutus</i>	Fjældrype	Aqigssaq	172	24	—	24
Ringed plover	<i>Charadrius hiaticula</i>	Stor Præstekrave	Tûjuk	43	1	1	2
Ruddy turnstone	<i>Arenaria interpres</i>	Stenvender	Talivfak	170	1	4	5
Purple sandpiper	<i>Calidris maritima</i>	Sortgrå Ryle	Sârffârssuk	272	38	—	38
Dunlin	<i>Calidris alpina</i>	Almindelig Ryle		53	—	4	4
Sanderling	<i>Calidris alba</i>	Sandløber		33	—	—	—
Red phalarope	<i>Phalaropus fulicarius</i>	Thorshane	Kajuarâq	2	—	—	—
Northern phalarope	<i>Phalaropus lobatus</i>	Odinshane	Nalûmassortoq	351	2	—	2
Pomarine jaeger	<i>Stercorarius pomarinus</i>	Mellemkjove	Isûngarssuaq	15	—	—	—
Parasitic jaeger	<i>S. parasiticus</i>	Almindelig Kjove	Isûnguaq	99	21	1	22
Long-tailed jaeger	<i>S. longicaudus</i>	Lille Kjove	Papikâq	2	—	—	—
Ivory gull	<i>Pagophila eburnea</i>	Ismåge	Naujavarssuk	51	1	—	1
Great black-backed gull	<i>Larus marinus</i>	Svartbag	Naujardluk	335	84	—	84
Iceland gull	<i>Larus glaucoides</i>	Hvidvinget Måge	Naujânguaq	2,247	516	6	522
Glaucus gull	<i>Larus hyperboreus</i>	Gråmåge	Naujarijugssuaq	1,583	183	—	183
Kittiwake	<i>Rissa tridactyla</i>	Ride	Tâterâq	9,753	456	15	471
Arctic tern	<i>Sterna paradisaea</i>	Havterne	Imerqutailaq	14,547	427	7	434
Razor-billed auk	<i>Alca torda</i>	Alk	Agpardluk	99	24	1	25
Dovekie	<i>Plautus alle</i>	Søkonge	Agpaliarssuk	5,774	427	1	428
Brünnich's murre	<i>Uria lomvia</i>	Lomvie	Agpa	22,358	1,056	141	1,197
Black guillemot	<i>Cephus grylle</i>	Tejst	Serfaq	6,017	710	2	712
Common puffin	<i>Fratercula arctica</i>	Lunde	Qilângaq	109	3	1	4
Northern raven	<i>Corvus corax</i>	Ravn	Tulugâq	114	44	—	44
Wheatear	<i>Oenanthe oenanthe</i>	Digesmutte	Kugsak	2,064	17	6	23
Common redpoll	<i>Carduelis flammea</i>	Gråsisken	Orpingmiutaq	302	4	—	4
Lapland longspur	<i>Calcarius lapponicus</i>	Laplandsværling	Narssarmiutaq	2,282	45	1	46
Snow bunting	<i>Plectrophenax nivalis</i>	Snespurv	Qupaluarssuk	4,890	119	21	140
Total				89,258	5,947	595	6,542

*Including 40 recoveries at the banding place.

Sources: American Ornithologists' Union 1957; Bertelsen 1905; Bugge *et al.* 1960; Kleinschmidt 1871; Salomonsen 1950-51, 1966a, 1966b, 1967.

population in each district. Such involvement of the native population in bird-banding is believed to be unique in the Arctic. The Greenlanders chosen are paid for their banding work in proportion to the number and kinds of birds banded. The price for each bird banded varies from 10 *kroner* (\$1.30) for a snowy owl or sea eagle to 12 *øre* (\$0.02) for a snow bunting. Bilingual Danish-Greenlandic instructions indicate what species are to be banded with each of eight band sizes.

Each return is also rewarded by a modest sum, in recent years 2 *kroner* (\$0.26). The Ministry for Greenland finances the rewards for banding and recovery. It also publishes the results of the program in the form of lists of birds banded and recovered (see Tables 2 and 3, also Salomonsen 1948-66a).

This excellent system has changed character somewhat in recent years, according to Salomonsen (1966b, p. 92). Summer activity in commercial fishing along the coast of West Greenland has left the population with less free time to devote to bird-banding. Better income has also lessened the need to seek additional income through the banding honoraria.



The author (William G. Mattox) taking a freshly-trapped gyrfalcon from the net. This bird was banded (note band on leg) and re-trapped several times.

To maintain bird-banding in the face of this recent decline of interest in Greenland, the Zoological Museum has sent out special banding field parties in recent years. In 1963, an ornithological committee was set up (*Komite for Grønlands ornithologiske undersøgelser*) under the Commission for Scientific Investigations in Greenland (publishers of the great scientific series *Meddelelser om Grønland*), in order to support bird-banding by expeditions sent out from Copenhagen and

TABLE 3. Shooting-Hunting Percentage of Birds Banded in Greenland 1946-65.

Species	Shooting/Hunting % *		Total Returns
	Grld.	Other	
Northern raven, <i>Corvus corax</i>	38.6	—	44
Gray sea eagle, <i>Haliaeetus albicilla</i>	35.2	—	19
Rock ptarmigan, <i>Lagopus mutus</i>	14.0	—	24
Old-squaw, <i>Clangula hyemalis</i>	17.5	1.2	28
Common eider, <i>Somateria mollissima</i>	22.0	—	494
King eider, <i>Somateria spectabilis</i>	15.3	0.4	607
Mallard, <i>Anas platyrhynchos</i>	10.1	—	54
Pink-footed goose, <i>Anser fabalis</i>	—	25.0	3
Barnacle goose, <i>Branta leucopsis</i>	0.5	8.3	137
White-fronted goose, <i>Anser albifrons</i>	7.0	16.8	306
Parasitic jaeger, <i>Stercorarius parasiticus</i>	21.2	1.0	22
Iceland gull, <i>Larus glaucoides</i>	23.0	0.3	522
Glaucous gull, <i>Larus hyperboreus</i>	11.6	—	183
Great black-backed gull, <i>Larus marinus</i>	25.1	—	84
Kittiwake, <i>Rissa tridactyla</i>	4.7	0.2	471
Black guillemot, <i>Cephus grylle</i>	11.8	—	712
Brünnich's murre, <i>Uria lomvia</i>	4.7	0.6	1,197
Dovekie, <i>Plautus alle</i>	7.4	—	428
Purple sandpiper, <i>Calidris maritima</i>	14.0	—	38
Dunlin, <i>Calidris alpina</i>	—	7.6	4
Fulmar, <i>Fulmarus glacialis</i>	4.1	0.2	204
Cormorant, <i>Phalacrocorax carbo</i>	26.5	—	212

*Percentages under 0.1 not included in the table.

Source: Salomonsen 1966a(1): 50.

financed by the Carlsberg Fund. This ornithological committee itself is financed by the Ministry for Greenland. Its members represent the Ministry, the above-named Commission, the University's Arctic Station (at Godhavn), and the Zoological Museum. The ornithological committee has, since its founding, sent out annual summer expeditions for bird-banding in West Greenland. These expeditions have been composed of scientists from Denmark and have been led, for the most part, by former outpost manager Andreas Lund-Drosvad, a well-known naturalist and old Greenland hand (*Beretninger* 1966-68).

There has also been an increasing interest in bird-banding among Danish teachers in Greenland, as well as weather station personnel on the east coast. Foreign scientific expeditions to Greenland have also contributed to the banding effort. The most noteworthy of foreign efforts has been the banding of geese in Northeast Greenland by the English ornithologist R. Marris.

Banding and Recovery Results

Forty-four species of birds were banded in Greenland during the period 1946 to 1965. Of these, 5 species account for two thirds of the bandings and one half of the recoveries. Table 2 lists the species banded during the period and the total recovered in Greenland and elsewhere. From that table it can be seen that of the total of almost 90,000 birds banded, over 22,000 were Brünnich's murre (thick-billed murre), and over 14,000 were arctic terns. Kittiwakes, black guillemots, and dovekies complete the top five, a group which accounted for over 58,000 of the total 89,258 bandings.

Since 1965 (1966 to 1968 inclusive), 26,758 more birds have been banded in Greenland, bringing the total since 1946 to well over 100,000 birds (Skikkild, personal communication).

The recovery statistics indicate human predation on some of the economically-useful birds, as well as those birds shot indiscriminately for whatever reason in Greenland. Table 3 lists the shooting or hunting percentage of the birds with greatest recoveries. Birds found dead are usually thus reported, but practically all the banding returns (presumably including some birds "found dead") result from shooting. It can be seen from Table 3 that of the birds of economic importance to the Greenlanders, the black guillemot, Brünnich's murre, and the dovekie all are subject to a rather low hunting predation. On the other hand, the northern raven and gray sea eagle are under heavy pressure from shooting. The same may be said, albeit to a lesser degree, of the common eider, king eider, parasitic jaeger, and cormorant. Banding returns indicate that the hunting pressure on the Iceland gull and great black-backed gull is about 25 per cent, a pressure which is not believed to be too high for these birds.

Over 90 per cent of the recoveries of birds banded in Greenland since 1946 have been made in Greenland (5,947 out of a total of 6,542 recoveries). The banding recoveries have, of course, provided valuable information about migration and wintering areas of Greenland's birds. Another valuable result is the ability to maintain a close watch on the status of sea-birds of economic importance to the local population (Salomonsen 1956c). Salomonsen (1966b, p. 98) has calculated that bird hunting provides about 1,200 tons of meat annually to the Greenlanders, so that the economic importance of birds should not be underestimated.

There is little space in such a paper for a discussion of banding results in Greenland. We look to the Danish scientists for such information; the results of recoveries within Greenland have not yet appeared in the scientific literature.

The recoveries outside Greenland of birds banded there have all been listed by Salomonsen in various issues of *Dansk Ornithologisk Forenings Tidsskrift*, 1947-67 (see references). The latest list (the eleventh) includes all birds recovered between the end of 1964 and the beginning of 1967, the longest list published to date. As noted above, Salomonsen has also summarized banding results in Greenland in his book *Fuglene på Grønland* (1967).

Several interesting results of Greenland's bird-banding program may be mentioned briefly here. Banding recoveries have shown that snow buntings from West Greenland cross Davis Strait and the Labrador Sea to winter in the prairies of northern United States and southern Canada. The snow buntings from Northeast Greenland, on the other hand, migrate north of Scandinavia to their wintering grounds on the steppes of the Soviet Union.

Bandings have shown that the entire stock of male and young king eider ducks migrate in summer from arctic Canada to moult along the central West Greenland coast.

The long migration flights of the arctic tern have been described extensively in the literature. Salomonsen (1956a, p. 264) noted the fascinating recovery of an arctic tern which had been banded in Disko Bay and recovered in Natal, South Africa. The bird had travelled a distance of more than 11,000 miles (18,000 km.)

in less than three months. This was, at that time (1956), the longest migration flight which bird-banding had ever recorded. Another recovery of an arctic tern, although an atypical recovery, was made of a bird banded at Kronprinsens Ejland (Disko Bay) and shot high up in the Andes Mountains of Colombia (Salomonsen 1967, p. 252)!

Another bird migrating great distances is the wheatear, a small passerine known in Danish as *Stenpikker* or *Digesmutte*. The wheatear migrates from Greenland across the North Atlantic Ocean, passing Western Europe to its wintering grounds in tropical Africa (Salomonsen 1967, p. 309). Crossing a large ocean on such a long migration passage is unusual for such a small bird as the wheatear.

CONCLUSION

The significance of the unique system of bird-banding in Greenland is not told by the statistics alone. Greenland is the only arctic land where bird-banding is carried out on a regular, planned basis by the local population.

The scientific value of this banding program is evident. The facts of bird migration are better known in Greenland than in any other part of the Arctic. In addition to its scientific value, bird-banding in Greenland has led the local population to an interest in the question of establishing hunting laws and bird protection regulations by the patient guidance of Danish scientists. It is probable that protective measures for some bird species will be enacted or strengthened in the future by the *Landsråd* of Greenland. The debate on such measures will be supported by the mass of scientific data which bird-banding has provided.

This recent, coordinated banding program in Greenland, which has been operating for 25 years, shows what excellent results can be achieved by stimulating local interest and gaining the support of government administrators. The success of the program in Greenland can be attributed largely to the initiative of one man, Finn Salomonsen. It is also to Salomonsen that we look for an analysis of the scientific results of Greenland's bird-banding work.

ACKNOWLEDGEMENTS

Dr. Finn Salomonsen, Curator of Birds at the Zoological Museum, Copenhagen University, assisted and encouraged a project to band gyrfalcons in Greenland in 1967 by the author and Major Richard A. Graham (Mattox 1969, 1970). This falcon-banding project sparked interest in Greenland's unique bird-banding system, an interest which resulted in the present paper. I should like to thank Director Eske Brun (Chairman of the Ornithological Committee) and Col. J. V. Helk (leader of Arktisk Institut, Charlottenlund, Denmark) for their assistance and encouragement. I acknowledge my appreciation to fru Alice Skikkild, secretary to Finn Salomonsen, who provided bird-banding totals for the years 1966 to 1968.

The Institute of Current World Affairs and its Executive Director Richard H. Nolte have supported my long-term study of the northern North Atlantic Ocean area, including various studies in Greenland. This support and ever-present encouragement is most gratefully acknowledged.

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