Observations on the Migration, Distribution and Breeding of Birds in the Canadian Arctic During 1954 and 1955.

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(Med et dansk resumé: Iagttagelser over trækforhold, udbredelse og yngleforhold hos fuglene i arktisk Canada i 1954 og 1955).

While collecting marine animals in the Canadian Arctic between Coppermine and Pond Inlet (Fig. 1) from May 1954 to August 1955. I was able to make a series of observations on several species of birds. The first descriptions of the birds from this region were included in the journals of the British Navy and Hudson's Bay Company explorers listed in BAIRD (1949). These early records have been extended by GAVIN (1947) and Scott (1951) at Perry River, by the members of the 5th Thule expedition (Hørring, 1937) and Bray (1943) in Foxe Basin and north Baffin Island, by Shortt and Peters (1942) in Somerset Island and north Baffin Island, and by WYNNE-EDWARDS (1952a) in central Baffin Island. There are also a few records from near Coppermine in a preliminary report of the Canadian Arctic expedition, 1913–1918 (CANADA, 1915). Information from this expedition has been included in a summary of the avifauna of the Canadian arctic by TAVER-NER (1934). There have been many descriptions of the birds from south Baffin Island and other regions in the Canadian Arctic but since they do not overlap the area of my observations they are not included in this brief history.

During 1954 and 1955 I was mainly concerned with obtaining quantitative samples of the marine benthos, and my journey and collections have been described elsewhere (ELLIS, in press). However I kept a daily record of the birds observed and attempted to collect specimens when possible. Unfortunately conditions made it difficult to prepare skins but a few were preserved and have been deposited in the National Museum of Canada, Ottawa, or the Redpath Museum, McGill University, Montreal.

Amongst the recent authors only BRAY, GAVIN, SCOTT,

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Fig. 1. Map of the Canadian arctic archipelago showing the regions visited during 1954 and 1955. Kort over det canadisk arktiske arkipelag, der viser de egne, som besøgtes i 1954 og 1955.

and WYNNE-EDWARDS have been able to give detailed information on the spring migration and breeding periods, and since the time of the early explorers there have been very few observations on the autumn migration. Consequently in this region there is a great lack of knowledge of the annual programme of the birds during their short breeding season. In this paper I have summarised my observations in an attempt to indicate the dates of arrival of the birds, their breeding periods and their departure. As these observations are based mainly upon sight records I have not attempted to identify the birds to subspecies, even in cases where only one subspecies is known to exist on the north American continent.

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Migration periods.

Spring 1954.

When I arrived at Coppermine on May 8, 1954, there were only four species of birds present there, *Lagopus lagopus*, *Lagopus rupestris*, *Corvus corax* and male *Plectrophenax nivalis*. The first three species had apparently been resident throughout the winter. Female *P. nivalis* joined the males by May 15 and three days later a mixed flock of *Larus hyperboreus* and *Larus argentatus* arrived. On May 23 the spring migrations really got under way (table 1) as flocks of *Branta canadensis* with occasional *Anser hyperboreus*, *Cygnus columbianus* and *Grus canadensis* came flying down the valley of the Coppermine River. This spectacular migration of the larger birds ceased either on May 29 or 30, and by June 1 a variety of smaller birds had arrived at Coppermine and begun courtship. A few more species apparently still in migration were observed in early June.

Autumn 1954.

It was much more difficult to obtain dates for the southward movements and only in the cases of the birds observed in late September and October was it likely that my last observations coincided closely with the dates that the last individuals actually departed. *Cepphus grylle* and *Alle alle* were seen in 1954 only on September 27 and 29 in Arctic Bay and Adam Sound and were presumably migrating from breeding colonies farther north. During October only sea-birds occurred regularly at Arctic Bay, and they left when the formation of ice prevented them from reaching water (table 2).

Two species of ground birds were observed late in 1954. Anthus spinoletta was last seen on September 21, when snow had fallen and the ground was frozen. The two birds which flew around the settlement that day were probably on their way south. Carduelis hornemanni appeared to have a restricted migration in north Baffin Island. It appeared several times in the settlement during the winter and the Eskimo knew it well as a winter resident but they reported that they rarely saw it during the summer. TAVERNER (1934) recorded that it is known as a winter visitor in Southampton Island, south Baffin Island and northern Ungava. SALOMONSEN (1950) also reported that it winters at Thule, Greenland, latitude 76° N.

Spring 1955.

No sea-birds had arrived at the floe-edge in Navy Board Inlet when I left there on April 27, but when I reached the floe near Button Point on May 16 there were six species present (table 3) and I saw four more during the next four days. Some of these birds had arrived at least a week previously according to Mr. D. STEVENSON of the Hudson's Bay Company.

Four of the species of sea-birds seen in 1955 had also been recorded at Coppermine in 1954. They were *Clangula hyemalis*, *Somateria mollissima* (equivalent to *Somateria v-nigra* at Coppermine), *Somateria spectabilis* and *Larus hyperboreus*. It is



Fig. 2. Pairs of Willow Ptarmigan (Lagopus lagopus) were fairly common on the terraces of the Coppermine River valley during May 1954.
 Par af Dalrype (Lagopus lagopus) var temmelig almindelige på siderne af Coppermine River dalen i mai 1954.

very noticeable that the three species of ducks all arrived at the open water by Button Point, two or three weeks before they were seen at Coppermine, whereas the date of arrival of L. hyperboreus was about the same at both places. The reason presumably is that L. hyperboreus is less dependent upon the presence of water than are the ducks. It is possible that the other three species can be found between Coppermine and Spence Bay during early May on restricted patches of open water e. g. current holes. The almost complete winter cover of ice in this region must have a considerable effect in localising and delaying the spring movements of those species of birds which rely on the presence of open water. Those species cannot disperse freely until June when the ice starts to break, particularly in the mouths of rivers.

The spring migration of the remaining birds at Button Point was first noticed on June 2 with the arrival of flocks of *Anser hyperboreus*. Within the next six days ten more



Fig. 3. My eskimo companions stand beside their loaded sledges and the igloo in which we had slept, as we were travelling across Baffin Island in March 1955. Mine eskimoiske ledsagere stående ved siden af de lastede slæder og den igloo, i hvilken vi sov under vor rejse tværs over Baffin Island i marts 1955.

species were seen either at the floe-edge or on land. Several of these species, *Eremophila alpestris*, *Calcarius lapponicus*, etc., had also been seen at Coppermine in 1954 where they arrived about a week earlier than at Button Point.

Annotated list.

- Common Loon (Gavia immer (Brünnich)). 1954: This species was identified only once on June 15 at Coppermine.
- Yellow-billed Loon (*Gavia adamsii* (Gray)). 1954: An Eskimo at Spence Bay was drying three skins on August 28. He had shot the
- * birds feeding in the sea near the settlement.
- Arctic Loon (*Gavia arctica* (L.)). 1954: Pairs of Arctic Loons were common near Coppermine and Cambridge Bay. A nesting bird was seen at Coppermine on June 23 and an adult with one young was seen at Cambridge Bay on August 14. Many Arctic Loons were seen feeding offshore near Spence Bay and others flying inland.
- Red-throated Loon (Gavia stellata (Pontoppidan)). 1954: Redthroated Loons occurred singly or in small groups near Coppermine



Fig. 4. In April we passed the cliffs in Admiralty Inlet which support the breeding colony of Fulmars (Fulmarus glacialis) described by PETER FREUCHEN.
I april passerede vi klinterne i Admiralty Inlet, hvor Mallemuk (Fulmarus glacialis) har sin ynglekoloni, der er beskrevet af PETER FREUCHEN.

during June and July. Adults with single young were seen near Cambridge Bay and Spence Bay between August 17 and September 3. A single bird was seen on September 13 near Moffet Inlet. 1955: This was the only species of loon that I saw near Pond Inlet. It generally occurred in small numbers but in late July flocks of about 20 birds were fairly common by the mouth of the Salmon River.

Northern Fulmar (Fulmarus glacialis (L.)). 1954: Fulmars were common in Adam Sound and Arctic Bay during September and October. They did not penetrate Adam Sound beyond the entrance to Arctic Bay nor did they enter Moffet Inlet. On October 15 in Adam Sound, a count of the Fulmar showed 6 light phase birds (with white heads) and 33 intermediate and dark phase. Two Fulmars were seen in Arctic Bay on October 19 the day after the ice had formed but there was presumably still open water nearby in Admiralty Inlet.

1955: Unfortunately I passed the breeding cliff in Admiralty Inlet described by FREUCHEN (HØRRING, 1937) on April 22 before the Fulmars arrived. The colony at Cape Charles York which FISHER (1952) mentions, which was originally recorded by the anthropo-



Fig. 5. An eskimo hunter stands at the floe-edge near Button Point waiting for seals. Behind him is the cliff on which Brünnich's murres (*Uria lomvia*) and Kittiwakes (*Rissa tridactyla*) nest. The colony is on the extreme right hand side of the cliff, and partly hidden from view.

En eskimoisk jæger stående ved iskanlen ved Butlon Point på lur efter sæler. Bag ham ses klinten, hvor Kortnæbbet Lomvie (Uria lomvia) og Ride (Rissa tridactyla) yngler. Kolonien findes yderst til højre på klinten, delvis skjult.

logist BOAS from conversations with Eskimo, is probably the same as FREUCHEN'S colony as WYNNE-EDWARDS (1952b) suggested, because the site is a low gravel cape quite unsuitable for breeding Fulmars.

This species was very common on most days at the floe-edge near Button Point between May 16 and June 9. The numbers varied considerably from almost none to uncountable hundreds but this was not related to the amount of water present because Fulmars were seen frequently on days when the floe was completely blocked with ice. Fulmars penetrated Eclipse Sound past Pond Inlet settlement from July 19 after the ice had broken. Many hundreds appeared on July 23, 24 and 25, on the last day accompanying schools of narwhals (*Monodon monoceros*).

The colony between Pond Inlet and Clyde River mentioned in WYNNE-EDWARDS (1952b) was reported to me several times by various Eskimo who apparently knew it well.

Whistling Swan (Cygnus columbianus (Ord)). 1954: A few swans were seen near Coppermine during June.

Canada Goose (*Branta canadensis* (L.)). 1954: From May 23 to 28 a number of flocks of Canada Geese were seen flying north along the valley of the Coppermine River and dispersing over the sea-ice in various directions.

Date	Number of birds	Direction of flight
May 23	12	Northwest
May 24	4	Northwest
	10	North
	2	Northwest
	4	South (up river)
May 25	30 - 50	Perched on sandbanks
	27	Northwest
	12	Northeast
	17	Northeast
	33	Perched on sandbanks
May 26	Several pairs	Perched on sandbanks
	Several flocks	Perched on sandbanks
	21	South (up river)
May 27	Several flocks	South (up river)
May 28	Several flocks	South (up river)

Small flocks of Canada Geese were seen occasionally in July and August at Coppermine and Cambridge Bay.

- 1955: No Canada Geese were seen near Pond Inlet but on two occasions I saw dark geese which I was unable to identify with any certainty. A flock of about 100 dark geese flying low over the ice near Button Point on June 6 I tentatively noted as Common Brent (*Branta bernicla* (L.)) and a single dark goose which was feeding in company with snow geese near Button Point on June 8 appeared to be a Barnacle Goose (*Branta leucopsis* (Bechstein)).
- Snow Goose (Anser hyperboreus (Pallas)). 1954: A few Snow Geese usually mixed with the flocks of Canada Geese were seen migrating north between May 24 and 29.
- 1955: Flocks were common at Button Point between June 2 and 8. About 200 birds were seen on June 14 and 15 two miles inland from the mouth of the Aktineq River. They were beginning to nest and a few eggs had been laid, although many birds were still assembled in flocks. A few birds were also seen in late June and July flying inland from the mouth of the Salmon River.
- Pintail (Anas acuta L.). 1954: Small groups and single birds appeared occasionally near Coppermine during June but were not seen in July.
- Old-squaw (*Clangula hyemalis* (L.)). 1954: Throughout June and July pairs and small groups of Old-squaws were common near Coppermine. One adult with five ducklings was seen on July 30. Others were seen on ponds near Cambridge Bay (3 adults with 10 ducklings,

1 adult with 4 ducklings on August 8 & 14). Flocks of Old-squaws were also seen at Gjøa Havn, Spence Bay and Arctic Bay. From August 27 to October 11 moulting and flightless birds were noticed.

- 1955: Old-squaws occurred regularly at the floe-edge near Button Point between May 27 and June 9. Pairs and small groups were common near Pond Inlet settlement during June and July.
- Common Eider-duck (Somateria mollissima (L.)). 1955: This species was identified at the floe-edge by Button Point only on May 18 (2 male, 2 female), May 31 (1 male) and June 7 (4 male, several female). They usually stayed apart from the vast flocks of King-Eiders then present at the floe.
- Pacific Eider (Somateria v-nigra Gray). 1954: A single male Pacific Eider was identified on June 9 by Coppermine.
- King-Eider (Somateria spectabilis (L.)). 1954: This species was rare at Coppermine but very abundant at Cambridge Bay where it assembled in large flocks on shallow sea water during early August. Breeding birds were scattered over many pools on the tundra with broods consisting of 2 to 13 ducklings. No adult males were seen at Cambridge Bay and they had apparently departed late in July. A single bird shot on August 11 was a flightless immature.

Breeding birds were also common at Spence Bay, but no adult males were noticed either there or at Arctic Bay during late August, September and October. A flock of about 50 King-Eiders remained in Arctic Bay until October 18 the day before the ice formed completely. A flightless immature bird was shot on that day.

- 1955: Flocks consisting of several hundred male and female King-Eiders occurred almost daily at the floe-edge near Button Point during late May and early June. From June 29 small numbers were seen frequently in the open water off the mouth of the Salmon River. Males were common up to July 26 but few were seen after that date.
- Red-breasted Merganser (*Mergus servator L.*). 1954: A pair was seen once at Coppermine on June 23.
- Common Rough-legged Hawk (*Buteo lagopus* (Gmelin)). 1954: Rough-legged Hawks were seen occasionally at Coppermine. A nesting pair occupied a cliff near Spence Bay settlement and two juveniles just able to fly were seen there on August 29. One of these which was banded retained some down but had partly assumed a plumage with brown back, black belly and streaked breast.
- Peregrine Falcon (*Falco peregrinus* Tunstall). 1954: Single Peregrines occurred occasionally near Coppermine during May, June and July. One was seen on September 2 near Spence Bay and a pair near Moffet Inlet on September 13 and 14.
- 1955: A single Peregrine was seen near Pond Inlet on July 22.
- Willow-Ptarmigan (*Lagopus lagopus* L.). 1954: Pairs of Willow-Ptarmigan were common near Coppermine. During May they were met with on exposed ground near the settlement but by June had retired to sheltered valleys in the river terraces. From May 16 to

June 23 males were observed with red-brown necks and a few brown feathers scattered throughout the rest of their predominantly white plumage. Females seen on May 16, 20 and June 1 appeared white. Pairs of birds in autumn plumage were seen near Cambridge Bay in August and six flying juveniles were observed on August 14.

- Rock-Ptarmigan (*Lagopus rupestris* (Gmelin)). 1954: Rock-Ptarmigan in winter plumage were seen on May 5, 10, 12 & 13 near Coppermine, but thereafter they retired to more hilly ground away from the settlement. A few white birds were seen on June 4. Some adults in autumn plumage with flying juveniles were seen on August 14 and 17 near Cambridge Bay. A single bird in autumn plumage was seen on August 26 at Spence Bay.
- 1955: Ptarmigan were rare during the winter near Arctic Bay although the Eskimo children did shoot a few. Tracks and a flock of Ptarmigan presumed to be *L. rupestris* were seen on January 25 while crossing overland south of Moffet Inlet. Tracks were also seen occasionally during the winter in the valley of the Gifford River and by Adams Island, Navy Board Inlet.
- Sandhill Crane (*Grus canadensis* (L.)). 1954: One or possibly more pairs of Sandhill Cranes occasionally flew by Coppermine during May, June and July.
- 1955: On June 8 at Button Point a young Eskimo boy reported seeing and hearing a bird whose name he did not know but from his description it could only have been a crane.
- Semipalmated Plover (Charadrius semipalmatus Bonaparte). 1954:
 Semipalmated Plovers were common breeding birds at Coppermine. Eggs were first seen on June 10 and nestlings on July 2. Towards the end of July this species was common in the settlement feeding in company with mixed flocks of sandpipers. Semipalmated Plovers were also seen at Bathurst Inlet and Cambridge Bay. At the latter settlement downy young were seen on August 6.
- 1955: Single birds and small groups occurred occasionally near Pond Inlet. These birds were larger than those seen in 1954 and were presumably the European species *C. hiaticula* L.
- American Golden Plover (*Pluvialis dominica* (Müller)). 1954: This species was only seen twice at Coppermine but it was abundant at Cambridge Bay. Many adults in summer plumage and young were seen there during August. Flying juveniles were noticed on August 14 and a bird in winter plumage on August 31 at Spence Bay.
- Black-bellied Plover (Squatarola squatarola (L.)). 1954: A Blackbellied Plover was seen only once at Coppermine, but adults and young were common at Cambridge Bay. Moulting birds were noticed from August 7 to 17. This species was heard but not seen at Gjøa Havn on August 25.
- 1955: A single bird was seen by the Aktineq River on June 15.
- Common Turnstone (Arenaria interpres (L.)). 1954: A few Turnstones passed Coppermine in migration on June 6, 7 and 12. Adults

with flying juveniles were common near Cambridge Bay during August.

- 1955: Two birds were seen at Button Point and one at the Aktineq River during June.
- Sandpipers, etc.: Flying sandpipers, phalaropes etc. were very common during both 1954 and 1955 but in many cases I could not identify them to particular species. In 1954 they were particularly abundant amongst swampy ground in the Eskimo village at Coppermine. Most of the sandpipers were either *Calidris minutilla* or *Ereunetes pusillus*. In 1955 *Calidris bairdii* was seen most frequently.
- Lesser Yellowleg (*Tringa flavipes* (Gmelin)). 1954: A small flock of sandpipers seen near Cambridge Bay on August 16 was very tentatively assigned to this species.
- Pectoral Sandpiper (Calidris melanotos (Vieillot)). 1954: This species was tentatively identified at Coppermine and Cambridge Bay.
 1955: Two were shot by an Eskimo at Button Point on June 4.
- White-rumped Sandpiper (*Calidris fuscicollis* (Vieillot)). 1954:
 White-rumped Sandpipers occurred occasionally near Coppermine, Bathurst Inlet, Cambridge Bay and Gjøa Havn.
- Baird's Sandpiper (*Calidris bairdi* (Coues)). 1954: This species was seen occasionally at Coppermine. A nest contained 4 eggs on June 11 but was later deserted. Three young were seen with an adult on July 8. From July 29 to August 1 individuals were included in mixed flocks of Sandpipers feeding in the settlement. Small flocks were also seen at Cambridge Bay during August.
- 1955: Baird's Sandpipers were frequent during June and July near Pond Inlet settlement. A juvenile just able to fly was caught on July 22.
- Least Sandpiper (*Calidris minutilla* (Vieillot)). 1954: This species was abundant in the swampy ground in the Eskimo village at Coppermine during June and July. Young birds not able to fly were noticed on June 28 and frequently during July. Flying juveniles were first seen on July 20. A pair was noticed at Port Epworth and a single bird tentatively identified at Cambridge Bay.
- Stilt Sandpiper (*Micropalama himantopus* (Bonaparte)). 1954: Stilt Sandpipers occasionally visited the swamp at Coppermine during June. A few were tentatively identified at Cambridge Bay.
- Semipalmated Sandpiper (*Ereunetes pusillus* (L.)). 1954: This species was common at Coppermine during June and July and many displaying birds were seen even though no nests were found. One downy young was brought to Coppermine on July 13 from Read Island. Several birds resembling Semipalmated Sandpipers but with slightly larger downturned bills were seen at Coppermine and Cambridge Bay and were possibly Western Sandpipers (*Ereunetes mauri* Cabanis).
- Buff-breasted Sandpiper (*Tryngites subruficollis* (Vieillot)). 1954: This species was seen once at Coppermine.

- Red Phalarope (*Phalaropus fulicarius* (L.)). 1954: Red Phalaropes occurred occasionally at Coppermine and Cambridge Bay. Flying juveniles were seen on August 14 and several adults in winter plumage on August 18.
- 1955: A single pair occurred on a pond near the Salmon River in July.
- Northern Phalarope (*Phalaropus lobatus* (L.)). 1954: A group of about 6 birds was seen frequently on several ponds near Coppermine but breeding was not confirmed, even though the birds were seen attempting coition on several occasions. On July 23 one of the males was beginning to moult. Three birds were seen near Bathurst Inlet settlement on August 4.
- Pomarine Jaeger (*Stercorarius pomarinus* (Temminck)). 1954: One was seen at Coppermine on June 4 and another at Spence Bay on August 27.
- Parasitic Jaeger (*Stercorarius parasiticus* L.). 1954: Parasitic Jaegers nested in small numbers at Cambridge Bay.

1955: A single bird was seen by the Aktineq River on June 14.

- Long-tailed Jaeger (*Stercorarius longicaudus* Vieillot). 1954: Pairs of birds were seen occasionally inland near Coppermine and frequently at Cambridge Bay where they were observed nesting. This species was also seen at sea between Coppermine and Cambridge Bay and in the Queen Maud Gulf.
- 1955: Small groups and single birds were seen frequently near Pond Inlet.
- Glaucous Gull (Larus hyperboreus Gunnerus). 1954: A flock of immature glaucous gulls mixed with L. argentatus stayed near Coppermine throughout the summer. Adults were not so common but a pair nested on a sandbank near the settlement and by July 13 a single young had hatched. Many Glaucous Gulls were seen at sea between Coppermine and Cambridge Bay. Breeding birds were scattered over the tundra near Cambridge Bay and were also mixed with L. argentatus on a cliff about 30 miles west of the settlement on one of the Finlayson Islands. The species was also seen at Spence Bay where six young were noticed swimming off a low-lying island on August 27. The first flying juveniles were seen on September 10 in Moffet Inlet. A pair with flying young remained at Arctic Bay until the ice formed on October 18.
- 1955: Glaucous Gulls were frequent near Button Point between May 16 and June 9 and occurred occasionally near Pond Inlet during June and July. About 12 birds presumably intending to nest occupied ledges close to and amongst the breeding colony of Murres and Kittiwakes a few miles north of Button Point.
- Herring Gull (*Larus argentatus* (Pontoppidan)). Most of the birds of this species that I saw were probably Thayer's gull, *L. a. thayeri* but I was unable to identify many of them to subspecies.

- 1954: Immatures and adults were seen occasionally at Coppermine, Bathurst Inlet, Cambridge Bay and the Queen Maud Gulf. A breeding colony of about 100 birds, mixed with *L. hyperboreus* occupied a cliff west of Cambridge Bay (see above). Nestlings were present on August 11. Several adults with flying juveniles were noticed in Moffet Inlet on September 9.
- 1955: This species was rare near Pond Inlet and single birds were seen only four occasions.
- Ivory Gull (*Pagophila eburnea* (Phipps)). 1954: A single bird was seen by my Eskimo guide in Moffet Inlet on September 16. This species, whose Eskimo name is *Nowyavah*, was reported to nest in such large numbers in the interior of Brodeur Peninsula that the ground in summer is coloured white from the faeces of the birds as though the land has a permanent covering of snow. This story substantiates BRAY'S (1943) account although he unfortunately gives the impression that it refers to the Kittiwake (Eskimo name *Terraterra*) as assumed by WYNNE-EDWARDS (1952a).
- 1955: Ivory Gulls appeared occasionally at the floe-edge near Button Point in May and June.
- Kittiwake (Rissa tridactyla (L.)). 1954: Single birds appeared occasionally in Adam Sound between September 30 and October 15.
- 1955: Kittiwakes were present in large flocks at the floe-edge near Button Point between May 16 and June 9. By June 6 they had taken up their places on the lowest ledges of the southern section of the breeding colony near Button Point. There were approximately 2000 birds there on June 6 and 1000 on June 8. Single birds penetrated Eclipse Sound to Pond Inlet settlement after the ice broke in late July.
- Sabine's Gull (*Xema sabini* (Sabine)). 1954: A colony of about 200 birds was scattered over ponds near Cambridge Bay. Downy young were seen from August 8 to 18 and a few immatures were also noticed. A few birds flew by the ships as we crossed the Queen Maud Gulf between August 23 and 25.
- Arctic Tern (*Sterna paradisaea* Brünnich). 1954: Arctic Terns occurred in small numbers at Cambridge Bay often in company with Sabine's Gulls. A nesting pair with one young was seen on August 8 near breeding Sabine's Gulls. Adults and immatures were also seen in the Queen Maud Gulf on August 24.
- 1955: A flock of Arctic Terns flew about the mouth of the Salmon River occasionally during July.
- Brünnich's Murre (Uria lomvia (L.)). 1955: Thousands of Murres occurred at the floe-edge near Button Point between May 16 and June 9. On May 16 and 17 flocks could be seen flying high over the ice towards the breeding cliff north of Button Point mentioned in HØRRING (1937) and WYNNE-EDWARDS (1952a). Flocks were also returning to the water skimming just a few feet above the ice.

No Murres were observed at the cliff on May 19, 25 and June 6,

but on June 8 while I was counting and photographing the Kittiwakes already there, the Murres began to arrive. Within an hour approximately 10,000 birds reached the cliff and took up places on the ledges. The Murres nested on two sections of the cliff about 200 yards apart. On the southern section they occupied ledges above the Kittiwakes, but on the northern section they spread almost from the top to the bottom of the cliff.

- Dovekie (Alle alle (L.)). 1954: On September 27 two Dovekies were seen in Arctic Bay and two days later there were a hundred or more swimming and flying in Adam Sound. They were presumably migrating from colonies farther north, but Arctic Bay seems to be far off their most direct route from the known breeding colonies (in Greenland?) to their winter quarters in the Atlantic.
- 1955: Less than a hundred birds were seen at the floe-edge near Button Point on May 17. They do not appear to nest with the Murres on the nearby breeding cliff and WYNNE-EDWARDS (1952a) report is based upon a misunderstanding of information received from Father DANIELLO, the Roman catholic missionary at Pond Inlet. Father DANIELLO and the local Eskimo believed that Dovekies nested above the fulmars in the breeding colony between Pond Inlet and Clyde River (see p. 214).
- Black Guillemot (*Cepphus grylle* (L.)). 1954: On September 29 5 birds in winter plumage appeared in Adam Sound presumably in migration.
- 1955: Small flocks of guillemots remained at the floe-edge near Koubvigjuak during the winter and I saw several there in February. Small flocks were common at the floe-edge near Button Point from May 16 to June 2. Very few penetrated into Eclipse Sound even after the ice had broken.
- Unidentified owl. 1954: A (single?) brown owl with a light belly, mottled light and dark wings and pale eyes occurred near Coppermine during June and July.¹)
- Snowy Owl (Nyctea scandiaca (L.)). 1954: This species was seen occasionally at Gjøa Havn, Spence Bay and Arctic Bay during August and September.
- 1955: Snowy Owls were seen occasionally in Navy Board Inlet and at Button Point during May and a pair was noticed on June 14 nesting amongst the snow geese near the Aktineq River.
- Horned Lark (*Eremophila alpestris* (L.)). 1954: This species was common in all the settlements visited except Bathurst Inlet and Artic Bay where none were seen. Nests with eggs were seen on June 8 and 20 and with nestlings on June 19 and 24. Flying juveniles were seen on June 29 and were common after July 9.
- 1955: Horned Larks were seen occasionally throughout the summer near Pond Inlet.

¹) Probably Short-eared Owl (Asio flammeus (Pontoppidan)).

- Raven (Corvus corax L.). 1954: Ravens were frequent at Coppermine feeding on the settlement's garbage which during the winter had been dumped on the sea-ice. Ravens were also seen at Bathurst Inlet and near Arctic Bay where during November one used to patrol the shore daily.
- 1955: Ravens were seen regularly at Button Point and at the nearby breeding colony in May and June. They were also seen occasionally near Pond Inlet during late June and July.
- American Robin (*Turdus migratorius* L.). 1954: Two pairs nested at Coppermine during the summer.

Date:	Nest 1:	Nest 2:
June 29	3 eggs	1 eggs
30	3 eggs	$2 \mathrm{eggs}$
July 5	3 eggs	3 eggs
12	1 nestling	3 eggs
15	2 nestlings	3 nestlings
18	1 nestling	3 nestlings
27	empty	empty

The young birds apparently left the nests on July 24. They were seen occasionally about the settlement during the following week.

- American Pipit (Anthus spinoletta (L.)). 1954: Pipits were frequent near Coppermine and bred nearby although no nests were found. A juvenile barely able to fly appeared in the settlement on July 19. Pipits were also seen occasionally at Cambridge Bay, Spence Bay Moffet Inlet and Arctic Bay.
- 1955: Single birds seen twice near Pond Inlet during June–July. Redpolls (*Carduelis hornemanni* (Holbøll) and *Carduelis flammea* (L.)).
- 1954: I have put these two species together because only occasionally was I able to identify flying birds to either species. Redpolls were fairly common at Coppermine and two nests were observed. One had 3 eggs on June 19 but was later deserted. The other nest contained six young when discovered on June 30. These left the nest by July 5. Redpolls were also common at Bathurst Inlet on August 4.

A Horneman's Redpoll was shot by an Eskimo boy at Arctic Bay on November 26 and flocks of similar birds were seen there by the Eskimo or white residents on October 29, November 14 and in February 1955. The Eskimo have a delightful legend to explain how the birds survive the lowest winter temperatures for they maintain that pairs of birds will sleep in igloos in the snow which they burrow out themselves.

Savannah-Sparrow (*Passerculus sandwichensis* (Gmelin)). 1954: This was a very common species at Coppermine. Four nestlings were seen in the settlement on June 29 and they had left the nest on the night of July 1. Flying juveniles were frequent in Coppermine during July and were also seen at Port Epworth. Many adults and flying juveniles were noticed at Bathurst Inlet on August 4.

- Tree-Sparrow (*Spizella arborea* (Wilson)). 1954: This was another common species at Coppermine. A nest was seen on June 19 with 6 eggs and flying juveniles from July 22. One juvenile was tentatively identified at Bathurst Inlet on August 4.
- Harris's Sparrow (Zonotrichia querula (Nuttall)). 1954: Harris's Sparrow was seen twice near Coppermine, each time amongst dense willow bushes.
- White-crowned Sparrow (Zonotrichia leucophrys (Forster). 1954: A few of these sparrows nested near Coppermine. A nest with 5 eggs was seen on July 1, two nestlings had hatched by July 5 and the others appeared two days later.
- Lapland Longspur (*Calcarius lapponicus* (L.)). 1954: These longspurs were seen almost daily at Coppermine during June and July. During July the males deserted their mates and were seen only in groups together. Breeding was as follows:-

Date:	Nest 1:	Nest 2:	Other nests:
June 10	4 eggs		
17	-	6 eggs	5 eggs
21	4 eggs	6 eggs	
26	4 eggs	3 nestlings	
28		6 nestlings	
30	deserted	1 nestling	
July 1		Printer and a second	$2 \mathrm{eggs}$
3			2 nestlings
7		nestling	
		left nest	

Adults and flying juveniles were also seen at Cambridge Bay and Spence Bay. Moulting males were noticed between July 19 and August 25.

- 1955: Lapland Longspurs were common at Button Point and Pond Inlet during the summer. A nest seen by the Salmon River on June 21 contained 5 eggs and four young were seen in the nest on July 12.
- Smith's Longspur (*Calcarius pictus* (Swainson)). 1954: This species occurred in small numbers near Coppermine. A single nest with 2 eggs was seen on July 4.
- Snow-Bunting (*Plectrophenax nivalis* (L.)). 1954: A flock of about 30 male Snow-Buntings stayed around Coppermine during early May. The females were first noticed on May 15 and the flock dispersed sometime after May 25. Thereafter single birds were seen only occasionally in the settlement. There were signs of nesting on rocky islands near Coppermine but no nests were actually seen. Flocks were also present at Cambridge Bay, Spence Bay and near Moffet Inlet.
- 1955: Eskimo first reported the arrival of snow buntings on April 24 but I saw none myself until May 13. Thereafter flocks were common at Button Point and by June the birds dispersed. A few single birds seen during the rest of the summer near Pond Inlet settlement.

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TABLE 1.

Dates and localities for the first and last observations of the common birds seen during 1954.

	Date first	Data and locality of last
Species:	seen at	Date and locality of last
	Coppermine	observation
Plectronhenar ninalis		
Males	Max 8	Sent 14 Moffet Inlet
Fomolos	May 15	Sept. 14, Monet Inter
	May 18	Oct 18 Arctic Bay
	May 10	Sont 12 Moffet Inlet
Pranta canadancie	" Mov 23	Aug 18 Combridge Boy
A near hunarhoraus	May 25 Moy 24	Aug. 10, Cambridge Day
Fremonhila almestris	may 24	Aug 31 Spence Bay
Anthus spinoletta	"	Sent 21 Arctic Bay
Falco peregrinus	"	Sept. 21, Motter Day
Cuanus columbianus		Sept. 14, monet inter
Grue canadencie	may 20	
Calcarius Iapponicus		Sent 2 Spence Bay
Froundas nusillus	May 20 May 20	Sept. 2, Spence Day
Calidris minutilla	May 20	
Charadrius seminalmatus	"	Aug. 14 Cambridge Bay
Turdus migratorius	"	
Passerculus sandwichensis		
Spizella arborea		
Anas acuta		
Carduelis hornemanni		Throughout winter
Carduelis flammea	"	
Zonotrichia leucophrys	"	
Buteo lagopus	June 1	Sept. 3, Spence Bay
Calcarius pictus	**	
Stercorarius longicaudus	June 4	Aug. 25, Queen Maud Gulf
Clangula hyemalis	"	Oct. 11, Arctic Bay
Somateria spectabilis		-
Males	"	Before Aug. 6, Cambridge Bay
Immatures and females	(no date)	Oct. 18, Arctic Bay
Gavia stellata	June 4	Sept. 13, Moffet Inlet
Stercorarius pomarinus	"	Aug. 27, Spence Bay
Calidris bairdi	June 5	
Arenaria interpres	June 6	Aug. 18, Cambridge Bay
Tryngites subruficollis	"	
Micropalama himantopus	June 7	—
Calidris fuscicollis	"	
Phalaropus lobatus	"	
Gavia arefica	June 9	Sept. 2, Spence Bay
Sterna paradisaea	-	Aug. 24, Queen Maud Gulf
Xema sabini	-	Aug. 24, Queen Maud Gulf
Squatarola squatarola	-	Aug. 25, Gjøa Havn
Pluvialis dominica	-	Aug. 31, Spence Bay
Alle alle	_	Sept. 29, Adam Sound
Ceppnus grylle	-	Sept. 29, Adam Sound
Kissa iriaaciyia	-	Oct. 15, Adam Sound
r umarus glacialis	-	Oct. 19, Arctic Bay

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Species:	Date of last observation	Ice conditions
Larus argentatus Gavia stellata Alle alle Cepphus grylle Clangula hyemalis Rissa tridactyla	Sept. 12 Sept. 13 Sept. 29 	No ice No ice No ice No ice Ice forming in sheltered places Thin ice formed over whole bey loter backen by wind
Somateria spectabilis (immatures and females) Larus hyperboreus Fulmarus glacialis No birds left	Oct. 18 	Much ice, but still enough water to operate boats Surface ice complete Ice 5 to 10 cms.

The relationship between the formation of ice and the departure of sea-birds from Arctic Bay in 1954.

TABLE 3.Dates for the first observations of the common birds seen during 1955
at Button Point.

Species:	Date
Plectrophenax nivalis (male)	May 13
Somateria spectabilis	May 15
Larus hyperboreus	May 16
Rissa tridactyla	"
Fulmarus glacialis	**
Uria lomvia	"
Cepphus grylle	"
Alle alle	May 17
Somateria mollissima	May 18
Pagophila eburnea	33
Clangula hyemalis	May 20
Anser huperboreus	June 2
Calidris melanotos	June 4
Calcarius lapponicus	June 5
Charadrius hiaticula ¹)	
Calidris bairdi	
Stercorarius Ionaicaudus	"
Branta hernicla ¹)	June 6
Larus araentatus	June 7
Branta leveongiel)	June 8
Grue canadoneiel)	ound o
Framonbila almostric	**
	"

¹) Uncertain record; see comments in annotated list.

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TABLE 4.

The distribution of the birds observed during 1954 and 1955.

						_						
Species:	Coppermine	Port Epworth	Bathurst Inlet	Cambridge Bay	Gjøa Havn	Spence Bay	Arctic Bay and vicinity	Moffet Inlet	Bulton Point	Pond Inlet and Salmon River	Aktineq River	Other localities
Gania immer												
Gavia adamsii												
Gavia arctica	b			b	×	X						
Gavia stellata	×			b	X	b		X		X		
Fulmarus glacialis							X		X	X		
Cygnus columbianus	X											
Branta canadensis	X			×								
Branta bernicla									?			
Branta leucopsis									?			
Anser hyperboreus	X								X	X	b	
Anas acuta	X											
Clangula hyemalis	b			b	X	X	X	X	×	\times	X	
Somateria mollissima									X			
Somateria v-nigra	X											
Somateria spectabilis	X			b	Х	b	$ \times $	••	X	\times		
Mergus serrator	X								• •			
Buteo lagopus	X					b				••	• •	
Falco peregrinus	×				• •	×		×		\times	••	
Lagopus lagopus	X	• •		b	• •		$\left[\cdot \cdot \right]$	••		• •	• •	
Lagopus rupestris	×		• •	b.	• •	×	X	×			• •	Gifford
												11001
Grus canadensis	×								?			
Grus canadensis Charadrius semipalmatus	× b		 ×	 b	•••	•••		 	?		•••	
Grus canadensis Charadrius semipalmatus Charadrius hiaticulus	$\stackrel{\times}{\mathrm{b}}$	· · ·	 ×	 b	••• ••	 	 	 	? ?	 ?	 	
Grus canadensis Charadrius semipalmatus Charadrius hiaticulus Pluvialis dominica	× b 	 	 ×	 b b	••• •• ••	 ×	 	 	? ? 	· · · · · ?	••• ••• •••	
Grus canadensis Charadrius semipalmatus Charadrius hiaticulus Pluvialis dominica Squatarola squatarola	× b × ×	· · · · · · ·	 × 	 b b b	 .×	 ×	••• •• ••	 	? ? 	 ? 	 .×	
Grus canadensis Charadrius semipalmatus Charadrius hiaticulus Pluvialis dominica Squatarola squatarola Arenaria interpres	$\begin{vmatrix} \times \\ \mathbf{b} \\ \cdots \\ \times \\ \times \\ \times \end{matrix}$	· · · · · · · · ·	 × 	 b b b b	··· ·· ··× ··	 	· · · · · · · · ·	 	? ? ×	 ? 	: : : : : × ×	··· ·· ··
Grus canadensis Charadrius semipalmatus Charadrius hiaticulus Pluvialis dominica Squatarola squatarola Arenaria interpres Tringa flavipes	× b ··× × ×	· · · · · · · · ·	 × 	 b b b b ?	 	 × 	· · · · · · · · · ·	· · · · · · · · ·	? ? ×	··· ? ·· ··	:::::××:	··· ·· ··
Grus canadensis Charadrius semipalmatus Charadrius hiaticulus Pluvialis dominica Squatarola squatarola Arenaria interpres Tringa flavipes Calidris melanotos	$\begin{vmatrix} \times \\ \mathbf{b} \\ \cdots \\ \times \\ \times \\ \cdots \\ ? \end{vmatrix}$	· · · · · · · · · · ·	 × 	 b b b ? ?	 	··· ··· ··· ···	· · · · · · · · · ·	· · · · · · · · · · ·	? ? × ×	· · · ? · · · · ·	·· · · · · · · · · · · · · · · · · · ·	··· ··· ···
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Continue.

Table 4, continued.

: :separate Coppermine Port Epworth Bathurt Inlet Gjøa Havn Gjøa Havn Gjøa Havn Spence Bay Moffet Inlet Bulton Point Bulton Point Bulton Point Arktined River	
Xema sabini	•
Sterna paradisaea $\ldots \ldots $ $\ldots $ $\ldots $ $\ldots $ $b $ $\ldots $ $\ldots $ \ldots	
Uria lomvia b	
Alle alle	•
Cepphus grylle $ $	xe
Bas	in
Nyctea scandiaca \dots $ \dots \dots \dots \dots \times \times \times \times \dots \dots$	•
<i>Eremophila alpestris</i> $ \mathbf{b} \times \mathbf{b} \times \times \times \times \times $	
Corvus corax $\ldots \ldots $ $ \times \ldots \times \ldots \ldots \ldots \times \ldots \times \times $	
$Turdus \ migratorius \ \dots \ \ b \ \ \dots \ \ \ \ \$	
Anthus spinoletta $ \mathbf{b} \dots \mathbf{x} \times \mathbf{x} \times \mathbf{x} \times \mathbf{x} \times \mathbf{x} $.	
Carduelis hornemanni $ _{h}$	
Carduelis flammea $\ldots $ $ \int^{D} \cdots \wedge \cdots \cdots \cdots \wedge \cdots \cdots \cdots \cdots$	•
Passerculus sandwichensis b b b	
Spizella arborea $ \mathbf{b} \times ? \dots \dots \dots \dots $	•
Zonotrichia querula \dots $ \times \dots \dots \dots \dots \dots \dots \dots \dots \dots $	
$Zonotrichia \ leucophrys \dots b \dots \dots \dots \dots \dots \dots \dots \dots $	
Calcarius lapponicus $ b b \times b \times b $.	
Calcarius pictus b	•
$Plectrophenax \ nivalis \dots \times \dots \times \dots \times \dots \times \dots \times \times$	•

b = observed breeding.

? =tentative identification only.

DANSK RESUMÉ

Iagttagelser over trækforhold, udbredelse og yngleforhold hos fuglene i arktisk Canada i 1954 og 1955.

Under min indsamlingsrejse i arktisk Canada fra maj 1954 til august 1955 skrev jeg en udførlig dagbog over mine iagttagelser over fuglene. I nærværende afhandling gives et resumé over disse iagttagelser, idet jeg har forsøgt at give en fremstilling af forekomsten af fuglene i disse ornithologisk set så lidet kendte egne, som jeg besøgte, samt at give oplysninger om tidspunkterne for fuglenes ankomst, yngletid og afrejse.

Dalrype (Lagopus lagopus), Fjældrype (Lagopus rupestris) og Ravn (Corvus corax) var standfugle ved Coppermine og opholdt sig der ved min ankomst 8. maj 1954. Hannen af Snespurv (Plectrophenax nivalis) var kommet før denne dato, og hunnen af Snespurv samt Gråmåge (Larus hyperboreus) og Sølvmåge (Larus argentatus) før midten af maj. Hovedtrækket passerede Coppermine i tiden mellem 23. maj og 7. juni. Størstedelen af fuglene forlod egnen omkring Arctic Bay før eller i løbet af september, da jorden frøs, og sneen begyndte at falde. Nogle få arter af havfugle blev lidt længere, men blev til sidst drevet sydpå, da der kom is på bugten d. 18. oktober. Småflokke af Hvidsisken (Carduelis hornemanni) og Fjældrype overvintrede i nærheden af Arctic Bay. Enkelte Ravne og Sneugler (Nyctea scandiaca) sås også i løbet af vinteren.

Havfugle viste sig ved kanten af isflagerne ved Button Point før 16. maj 1955. Af fire arter, som forekom både ved Coppermine og Button Point, kom kun een, nemlig Gråmågen i 1954 og 1955 på omtrent samme dato. De andre tre arter ankom til Button Point i 1955 ca. tre uger tidligere end ved Coppermine i 1954, og grunden er muligvis det næsten sammenhængende isdække mellem Coppermine og Spence Bay, som begrænsede havfuglenes udbredelse i denne egn indtil begyndelsen af juni. Resten af fuglene kom til Button Point efter d. 2. juni 1955, ca. 1 uge efter at hovedtrækket havde passeret Coppermine i 1954.

Der gives en liste over arterne med bemærkninger om hver arts udbredelse, antal og yngleforhold. Tabel 4 viser de fugle, der observeredes på hver af de besøgte lokaliteter.

Fire arter af Lom – Islom (*Gavia immer*), Hvidnæbbet Lom (*G. adamsii*), Sortstrubet Lom (*G. arctica*) og Rødstrubet Lom (*G. stellata*) blev nu og da observeret under ekspeditionen. Den sidste art var almindeligt forekommende ved Pond Inlet i 1955.

Mallemuk (*Fulmarus glacialis*) var talrig i det nordlige Baffin Island; den holdt hovedsagelig til ved store åbne strækninger af vand, men i juli 1955 sås hundreder af individer følge efter flokke af Narhvaler (*Monodon monoceros*) på træk gennem Eclipse Sound.

Store mængder Kanadagæs (*Branta canadensis*) trak nordpå langs Coppermine River dalen i 1954, ledsaget af nogle få Snegæs (*Anser hyperboreus*). Ca. 200 Snegæs sås begynde at bygge rede ved Aktineq River, Bylot Island i 1955.

Der sås flere forskellige andearter. Havlit (*Clangula hyemalis*) og Kongeederfugl (*Somateria spectabilis*) var de mest almindelige. Sidstnævnte ynglede i stort antal ved Cambridge Bay, og store flokke ungfugle fouragerede i det lave vand rundt mundingen af bugten i august. Kongeederfuglen var også talrig i 1955 ved kanten af isen ved Button Point.

Nogle få Låddenbenet Musvåge (*Buteo lagopus*) og Vandrefalk (*Falco peregrinus*) sås under ekspeditionen.

Både Dalrype (*Lagopus lagopus*) og Fjældrype (*L. rupestris*) forekom ved Coppermine og Cambridge Bay. Ryper iagttoges i løbet af vinteren i det nordlige Baffin Island, og de formodedes at være Fjældryper.

Kanadisk Trane (Grus canadensis) sås kun enkelte gange i løbet. af 1954.

Amerikansk Præstekrave (Charadrius semipalmatus) var almin-

delig ved Coppermine i 1954. Fugle, der lignede denne, sås ved Pond Inlet i 1955; det var sandsynligvis Alm. Præstekrave (*C. hiaticula*). Amerikansk Hjejle (*Pluvialis dominica*) og Strandhjejle (*Squatarola squatarola*) var almindelige ved Cambridge Bay, men ingen andre steder. Af Stenvender (*Arenaria interpres*) sås også et par stykker.

Der var mange Ryler begge somre. I 1954 var de mest almindelige arter ved Coppermine *Calidris minutilla* og *Ereunetes pusillus*, medens Bairds Ryle (*Calidris bairdi*) var den almindeligste art ved Pond Inlet i 1955. Nogle få Odinshøns (*Phalaropus lobatus*) og Thorshøns (*Phalaropus fulicarius*) blev iagttaget.

Mellemkjove (Stercorarius pomarinus), Alm. Kjove (S. parasiticus) og Langhalet Kjove (S. longicaudus) blev alle iagttaget, men de var ikke talrige.

Gråmågen var almindelig næsten overalt, men Sølvmågen sås kun hyppigt ved Coppermine og Cambridge Bay. Nogle få Ismåger (*Pagophile eburnea*) sås i det nordlige Baffin Island, og Ride (*Rissa tridactyla*) var talrig ved Button Point. Der taltes 2000 i en nærliggende ynglekoloni. Ved Cambridge Bay sås henved 200 Sabinemåger (*Xema sabini*), mange af dem ynglende. Nogle få Havterner (*Sterna paradisaea*) blev også iagttaget ved Cambridge Bay.

Kortnæbet Lomvie (*Uria lomvia*) forekom i stort antal ved iskanten nær Button Point, og ca. 10.000 sås i en ynglekoloni nord for dette sted. Nogle få Søkonger (*Alle alle*) og Tejster (*Cepphus grylle*) sås ligeledes i den nordlige del af Baffin Island.

Sneugler (Nyctea scandiaca) sås sjældent under ekspeditionen.

Bjerglærker (Eremophila alpestris), Ravne (Corvus corax), Skærpibere (Anthus spinoletta), Gråsiskener (Carduelis flammea og C. hornemanni), Laplandsværliner (Calcarius lapponicus) og Snespurve (Plectrophenax nivalis) sås mange steder. Nogle fugle, der normalt er knyttet til skov, forekom ved Coppermine, som er beliggende ca. 10 miles nord for den sidste samling træer i Coppermine River dal. Det var Turdus migratorius, Passerculus sandwichensis, Spizella arborea, Zonotrichia querula, Zonotrichia leucophrys og Calcarius pictus.

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