

Fig. 1. Head of male King Eider sketched in the field by G. M. Sutton from a fresh specimen shot on Southampton Island, 30 June 1930. Note the dark eyes.

ON CERTAIN ANATIDS OF FROBISHER BAY, BAFFIN ISLAND

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IN SUMMER 1953 the writers carried out field work near the head of Frobisher Bay from June 14 to August 22. An eighteen-square-mile area, most of it high "desert tundra" east and northeast of the Royal Canadian Air Force station, was covered fairly regularly by foot. Several islands at the head of the bay were visited, and two boat trips were made to the mouth of the Jordan River, sixteen miles west of the station. On the first of these trips we were guests of the Hudson's Bay Company, and on the second of the Royal Canadian Mounted Police. In addition the Royal Canadian Air Force kindly flew us to several areas well away from Frobisher Bay, including the southeast shore of Lake Amadjuak, and Cape Dorchester at the northwest tip of Foxe Peninsula.

According to Soper (1928, pp. 87-95; 1946, pp. 16-24), the following anatids breed in southern Baffin Island: Whistling Swan (*Cygnus columbianus*), Canada Goose (*Branta canadensis*), Brant (*B. bernicla*), Snow Goose (*Chen hyperborea*), Blue Goose (*C. caerulescens*), Old-squaw (*Clangula hyemalis*), Harlequin Duck (*Histrionicus histrionicus*), Common Eider (*Somateria mollissima*), King Eider (*S. spectabilis*), and Red-breasted Merganser (*Mergus serrator*). Of these 10 forms we recorded 7, all of them at the head of Frobisher Bay.

Canada Goose (*Branta canadensis*)

The Canada Goose nested in considerable numbers at the head of the bay. We first recorded one on June 16 in high land east of the airfield. It was a large bird, not the little Barren Grounds Goose (*B. c. hutchinsi*), a subspecies seen by Sutton on Southampton Island (Sutton, 1932a, pp. 36-41). On June 18 we saw a flock of geese—4 Canadas and 1 Snow Goose (*Chen hyperborea*) flying high in the air northward along the Sylvia Grinnell River. By this date the goose migration must have been largely over, although 10 Canada Geese were seen flying westward in a flock along the shore as late as June 27.

From June 16 to July 10 a pair of geese was seen frequently on the low land between the airfield and the mouth of the Sylvia Grinnell River, and on June 21 Sutton came up on 2 Canada Geese two miles northeast of the airfield. They were feeding in a grassy spot below a big snowbank, and

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showed no alarm, standing their ground until Sutton was within shotgun range. Neither bird had a light zone encircling the forepart of the body just below the black of the neck. No geese were seen in the area again, but on July 3 a pair of geese was observed near the mouth of the Sylvia Grinnell River.

We were unable to find any nests. V. C. Wynne-Edwards saw a family of Canada Geese, consisting of a pair and 4 young, close to the place where we had first recorded the species; the parents almost certainly had a nest somewhere between the airfield and the Hudson's Bay Company post. On July 18

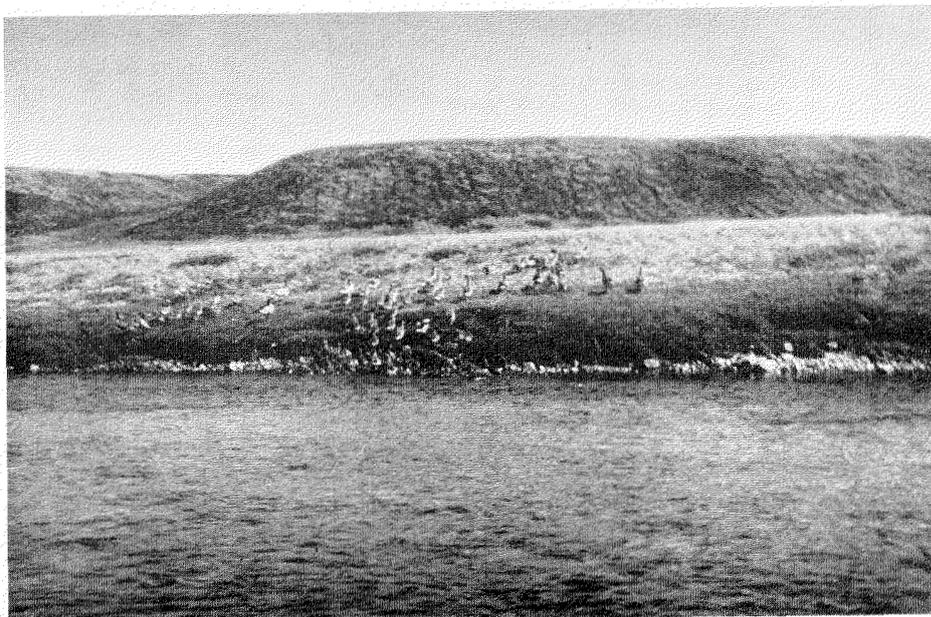


Fig. 2. Flightless adult and young Canada Geese scrambling up river bank near Tarr Inlet, 4 August 1953.

we found a pair of geese and 5 half-grown goslings swimming in a line in the Jordan River, not far from the mouth. We had expected to find geese in this area because of the numerous goose tracks, feathers, and droppings on the firm grassy tidal flats nearby, and we located the geese by the noise they were making. Before long the parents climbed out of the water, leaving the goslings bunched together; they made no attempt to follow.

Our earliest date for a moulted wing quill was July 24, when we found a primary far east of the station. Many geese remained in flying condition throughout July, and 2 were seen flying over the mouth of the Sylvia Grinnell River, honking loudly, on August 1. Two days later, Parmelee came upon a company of about 30 Canada Geese in a long, narrow pond in marshy tundra, about a mile east of Tarr Inlet. He judged them all to be flightless; more than half of them appeared to be well-grown young. Next day we found

them, or a similar company, on a pond about a mile farther northeast. Among the young birds there were a few small ones, still largely downy, but the company moved at great speed when startled. We followed the geese to a winding river, where Parmelee went downstream, and Sutton went to a narrow defile near the river from where he saw about 150 Canada Geese, mainly adults or well-grown young, swimming rapidly with the current. Parmelee, meanwhile, shot a stub-winged adult. This alarmed the flock, and some geese raced up the opposite bank (Fig. 2). Sutton followed, heading for a hill to the east, from which he saw a great meander flanked on one side by a steep

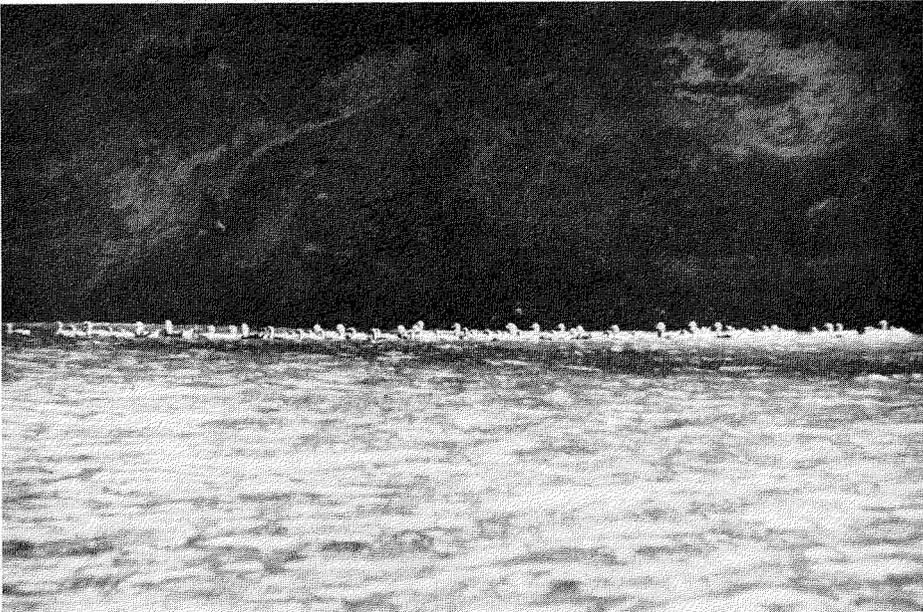


Fig. 3. Adult and young Blue Geese swimming in meander near Tarr Inlet. Four or five birds may be young Lesser Snow Geese, 4 August 1953.

bank about eighty feet high. In the water there was a mass of geese, mostly Canadas, some Blue Geese (*Chen caerulescens*), and some which could not be identified (Fig. 3).

Sutton worked downstream, and Parmelee upstream, and the geese, cornered at last, tried in vain to climb the steep bank. Several Canada Geese and 2 Blue Geese took to the air and, honking loudly, flew to the tidal flats half a mile away. The flightless birds, about 125 Canada Geese and 70 Blue Geese, and a few light-coloured geese which we called "young Lesser Snow Geese", stayed in the river, moving *en masse* this way and that. When the geese were not followed so closely they became surprisingly docile, and the Canadas formed a separate flock. The "young Lesser Snows" stayed with the Blue Geese. As we were leaving the river the flightless birds made another dash up the bank and managing to make the top, raced off coastwards.

Parmelee caught the last bird to reach the top, a very young Canada gosling, which we banded, photographed, and released. Its plumage was wholly downy (Fig. 4).

The specimen we had shot was a very fat female. Earlier in the season it must have had a large brood-patch, for there were fresh, fully-developed grey feathers in the middle of the belly, quite different in appearance from the worn, brownish, unmoulted feathers surrounding them. This bird does not seem to us representative of the nominate race, despite the inclusion of southeastern Baffin Island in the form's breeding range by Delacour (1951, p. 5) and Soper (1946, pp. 16-7). It does not have the "conspicuous light-colored area on the upper back" believed by Todd (1938, p. 662) to be an important character of *canadensis*. The dark greyish brown of the back extends forward to the back of the neck, without becoming lighter. The bill-length, 49 mm., is slightly below that of the smallest of 7 *canadensis* (51.5 mm.) measured by Aldrich and is close to his average (49.7 mm.) for 10 female *B. c. interior* (Aldrich, 1946, p. 98). The tail-length, 136 mm.—possibly not a valid measurement, for only ten full-length rectrices, all of outgoing plumage, are present—falls within Aldrich's extremes for either *canadensis* or *interior*. The wing-length is valueless, as all the remiges are stubby. The tarsus-length, 90 mm., is the same as that of the longest-legged *interior* measured by Aldrich and greater than that of his longest-legged *canadensis* (88.5 mm.). To the best of our knowledge neither Delacour nor Aldrich examined Baffin Island specimens, and we think that Soper, who gives no measurements for the 9 *canadensis* he discusses (1946, p. 17), did not consider that these birds might be *interior*. Further information must be obtained, but it seems likely that the breeding form of southeastern Baffin Island is *B. c. interior*.

Snow Goose (*Chen hyperborea*)

The Snow Goose which we saw on June 16 was smaller than its 4 Canada Goose companions.

The light-coloured geese referred to above as "young Lesser Snows" were different from the many young Blues of the flock. They were somewhat downy all over the head and neck, but the plumage beneath the down was very pale; their backs were light grey, and their under parts almost white. These birds do not appear in our photograph (Fig. 3) which shows only part of the flock. We failed to see any really white birds. White geese seen by personnel of the Royal Canadian Air Force near Cape Dorchester in mid-summer must have been some form of Snow Goose.

Blue Goose (*Chen caerulescens*)

Only 2 of the 70 Blue Geese we observed seemed to be quite unable to fly. The young birds were mostly smaller than the adults and were somewhat downy, especially on the head and neck. Among the adults we noticed none of the "piebald" colouration discussed by Sutton (1931, p. 359) and figured by Bent (1925, plate 1). We do not know where these Blue Geese nested; the Eskimo did not know of a nesting place in the vicinity. The Blue Goose's



Fig. 4. Downy young Canada Goose captured near Tarr Inlet, 4 August 1953.

principal breeding ground on Baffin Island is the shores of Bowman Bay, far northwest of Frobisher Bay (Manning, 1942, p. 169). Soper (1946, p. 20) states that the Blue Goose "occurs irregularly north to Cumberland Sound", but he mentions no midsummer records for southeastern Baffin Island.

Old-squaw (*Clangula hyemalis*)

Wynne-Edwards (1952, p. 362) did not see this species in the Frobisher Bay area in 1937 or 1950. In 1953 we saw it almost daily, usually in lakes well back from the sea, from June 17 to August 10. We were told that in early June a mixed flock of males and females was seen repeatedly at high tide along the shore east of the Hudson's Bay Company post; this flock had broken up by the time we arrived. We witnessed no courtship behaviour, and only infrequently did we hear the *ah, ah away* call note.

We saw birds in moulting condition throughout our stay. Those seen between June 17 and June 21 were all marked with white on the crown, occiput, and back. On June 22 we carefully inspected a male and female in a pond near the airfield. The male was in full summer dress, but the head and neck of the female were very irregularly blotched with white. Single males seen during the next three days appeared to be in complete summer feather.

On June 30 near the Sylvia Grinnell River we collected a male (GMS 11736) whose plumage was an interesting mixture. A large, irregular patch

of white on the nape, a sprinkling of white on the hind neck, three or four white feathers on the upper chest, and one white feather on the back, indicated that the moult into summer plumage was not finished. The moult of the lower chest had not even started, and the feathers of the courting (winter) plumage (Sutton, 1932b) were dull and brown compared with the new, glossy, blackish feathers of the neck and upper chest. The bird could be described as black-necked and brown-chested, the lower limits of the black neck and upper chest being precisely those of the white neck and upper chest of the courting dress. Phillips (1925, p. 350) was aware of this very condition, for he states that the summer dress is acquired by a moult of the "head, neck, mantle, scapulars, *upper breast and flanks*" (*italics ours*). The brown feathers of the lower breast are, of course, replaced during some stage of the post-nuptial moult, but the replacement is not easy to detect. The middle tail feathers of the specimen are 150 mm. long. The bird was fairly fat; the testes, which were slightly pyriform, each measured 28 x 9 mm.

A female in full summer dress was seen on July 9 on "HBC River". On July 18, 3 males seen in the thawed part of a lake not far from Silliman's Fossil Mount were in "full" summer feather; they could all fly well.

We found no nests and from mid-June to mid-July few of our observations led us to believe that we were close to a nest. Several ducks with young were, however, seen by the writers and other observers. On July 26 we surprised a female with 2 young, about a third grown, on an island in a lake two miles north of the airfield. On July 31 some Eskimo children found a small duckling alive in water near the Hudson's Bay Company post, and we preserved it as a specimen (GMS 11798, male). Phillips (1925, p. 362) says that "in most of the far-northern nesting areas late June and the first half of July constitute the regular laying period, and newly hatched broods are found well into August".

Common Eider (*Somateria mollissima*) and King Eider (*S. spectabilis*)

We only saw eiders at sea. On June 20 we saw 3 Common Eiders, 2 males and a female, well out from Davidson Point, near the mouth of the Sylvia Grinnell River. This was our only positive record for this area. However, the waters off the mouth of the Jordan River—a bay sometimes referred to as "Jordan Bay"—were a favourite feeding ground of both the Common Eider and the King Eider, and it was here that we saw most eiders. It is an area with strong ocean currents, and at low tide mud-flats stretched out miles from the shore. The eiders fed on clams and snails that lived in the mud.

We first visited this area on July 13 by motorboat. As we moved landwards the big ducks became more numerous. We soon gave up trying to keep a record as clouds of ducks were rising in the distance. Whether aware of our approach or not, the eiders had reason for flying, for the incoming tide was rapidly covering their feeding grounds. Lines of ducks crossed and re-crossed the path of the boat, moving steadily and swiftly, sometimes coming quite close. Many of the flocks were composed wholly of brown subadult or off-colour males.

We stopped at a narrow, rocky, ice-covered island. The first bird we shot was a King Eider, a species we had not, up to then, identified with certainty. On another island we found several Common Eider nests, all above the high-tide mark in mossy, well-sheltered places. Many of the nests were fresh-looking, but without eggs. We collected a clutch of four fresh eggs, fouled by a departing hen.

Near this island we shot a crippled female *mollissima* (GMS 11753), unable to fly because of an old wing-wound. It was quite fat (4 lb., 3 oz.); its stomach contained a few pieces of gravel. We found no sign of a brood-patch among the belly plumage.

The two other specimens collected that day were male King Eiders. Both of them were dark-eyed, in this respect being similar to all the specimens collected by Sutton on Southampton Island (1932a, p. 78) (Fig. 1). One (GMS 11751) was a fat (3 lb., 13 oz.) adult in post-breeding condition. The bill was shrunken at the base, and dull-coloured; the plumage pattern was that of a courting bird, but the colours lacked brilliance and the skin was set with stubby pinfeathers. The gizzard held gravel and pieces of mussel shell. The other (GMS 11752) probably never had worn bright plumage, and was, in general, brownish, with bill like that of a female, unswollen at the base. The chest, however, was sprinkled with whitish feathers and the sides and flanks were blackish. There was no white spot at either side of the rump. This bird was very fat (3 lb., 9 oz.). Its gizzard held a perfect specimen of truncated clam (*Mya truncata*) about 54 mm. long (shell proper, 37 mm.), and an equally perfect black clam (*Modiolus nigra*) about 33 mm. long, and a considerable amount of gravel.

On our second visit to "Jordan Bay", July 17 to 20, we again saw numerous eiders, especially near the mouth of the Jordan River. Most of them appeared to be male *mollissima* in high plumage. Moulded body feathers lay everywhere on the water. We collected an adult male, feeding in water about ten feet deep. The bird's wings seemed to be in full feather, and its body plumage was not moulting heavily. The tarsi and tops of the toes were rich orange-brown, the webs greyish-black; the bill light olive at the tip, deepening to dull orange at the base. The gullet contained small clams, with and without shell, and snails. The gullet and stomach contents, as identified by D. V. Ellis, were: 4 pelecypod molluscs (1 *Saxicava arctica*; 3 *Modiolaria discors*) and 2 gastropod molluscs (1 *Natica pallida*, shell partly digested, identification uncertain; 1 *Buccinum* sp., shell partly digested).

Eiders continued to fly about our boat, as we left "Jordan Bay" on July 20, until we were four or five miles off shore; thereafter we did not see any. They were obviously fond of the rocky islands. One turf-covered island which we visited had dozens of old nests, several nest-basins, and one new nest, without eggs. We collected 2 *mollissima*, an adult male (GMS 11774), mostly in eclipse plumage but able to fly, and a brown subadult male (GMS 11775). The latter weighed 4 lb., 8 oz.

On July 29 we saw some *mollissima* among the islands south of the airfield on the opposite shore of the bay. They included some solitary brown birds; a

flock of 30 males in mixed plumage, flying strongly; a lone adult male in full breeding feather, and able to fly; and an adult male in flightless condition. We shot this bird. Its head and neck were dark, except for a veiling of white over the front part of the cheeks; the chest was rich buff, unspotted; the belly, rump and tail coverts solid black; and the back, including the upper surfaces of the wings, creamy white except for four rows of dark spots. The flight feathers had dropped very recently, for the incoming quills were mere stubs among the coverts.

The average size of the four *mollissima* eggs collected was 76.0 x 48.0 mm. The average for seventy Baffin Island *mollissima* eggs reported by Phillips (1926, p. 96) was 75.7 x 49.9 mm.

Red-breasted Merganser (*Mergus serrator*)

Kumlien reported that this species nested on cliffs of the Cumberland Peninsula, Baffin Island (1879, p. 94) but we did not see any nests. We first saw a Red-breasted Merganser on June 16, a female swimming alone between the bay-ice and the tidal flats not far from the airfield. Between June 19 and June 27 we saw the species three times along the Sylvia Grinnell River. On each occasion alarmed by our approach the birds flew strongly. On July 13 we saw two adults in salt water in the Jordan River area, and on July 19 3 adult females were feeding together in swift water near the Jordan River mouth. They all flew strongly.

On August 4 we came upon a female and 3 small young on a river east of Tarr Inlet. We collected 2 of the young—males a few days old (GMS 11809-10). The agitated mother, with full powers of flight, swam vigorously near us calling with a hoarse *quarr, quarr*.

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