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*Publications*

CANADIAN EIDER DUCKS  
AND  
PRODUCTION OF EIDERDOWN.

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Eider Ducks are large, sturdily-built sea-ducks, characteristically occurring on or near the coast. The males exhibit broad masses of contrasting black and white plumage, reminding one of icebergs and dark water. Some areas of the white plumage are suffused with pale Nile green or warm wine-color. The females appear quite different, being attired in inconspicuous shades of brown, more or less extensively cross-banded. Young birds of both sexes bear a general resemblance to the adult females.

Four species of Eider Ducks are known to occur in Canada. One of these, namely, Steller's Eider, which is found chiefly in Siberia, is seldom seen in Canada except on the Arctic coast west of the mouth of the Mackenzie River, although one specimen occurred accidentally at Godbout, Quebec, about 1900.

The Pacific Eider is somewhat more widely distributed than the two species just mentioned, but its range in Canada is chiefly along the Arctic coast and islands from Coronation Gulf to Alaska. This Eider bears, in general, a close resemblance to the common Eastern Eider. It is now known whether or not the ranges of these two species meet or overlap anywhere in the Arctic west of Hudson Bay.

The male King <sup>Eider</sup> ~~Eider~~, or Warnecootai, presents a very distinctive appearance. The base of the bill rises on either side in high, broad, fleshy processes, orange-yellow in color, which are bordered by a narrow line of velvety black feathers.

The cheeks ....

The cheeks are flushed with delicate nile-green and the crown and nape are chalky blue. The throat is marked with a black V. The brown-colored female is not very different in appearance from female Common Eiders.

As a breeding bird, the King Eider is widely distributed in the Arctic, where it occurs all across Canada. On our eastern coast, it winters regularly as far south as Nova Scotia, and is common in the Gulf of St. Lawrence, along the shores of the Province of Quebec, at the time of its spring migration. This Eider does not gather on coastal islands, to nest in comparatively dense groups, as Common Eiders often do, but prefers to nest in scattered pairs on the northern tundra, often several miles from salt water and a considerable distance from any lake or pond. It is not known to nest south of the northern part of the Ungava Peninsula. Because of its habit of scattering its nests over great areas, where they are difficult to discover, the down of this Eider, which is much darker than that of the Common Eider, is not gathered from the nests nor used in commerce.

The Common Eider is, as its name implies, the best known and most widely distributed of the Eider Ducks. It varies in details of its appearance in different regions and is consequently divided into several races or subspecies. The two races that occur in Canada are the Northern Eider, which nests from mid-Labrador northward and westward to Melville Peninsula or beyond, and the Southern Eider, which nests in southern Labrador, the Gulf of St. Lawrence, the St. Lawrence estuary, and the Bay of Fundy. The Eiders of Hudson and James Bays may constitute a separate race not yet described. Other races are known to occur in Iceland and Europe.

On the ....

On the Nova Scotia coast and in the Gulf of St. Lawrence the northward migration of King Eiders, Northern Eiders, and Southern Eiders takes place in April and May. They fly northward in the western part of the Gulf and then eastward along the north shore, toward the Strait of Belle Isle. These hardy birds press forward toward their nesting-grounds in spite of snow-covered land and ice-covered sea. They require only sufficient open, fairly shallow water to enable them to dive to the bottom to obtain their food. They fly in flocks, containing from 20 birds to several thousand, with both sexes mingled together. These flocks are usually spread out with the birds more or less abreast, so that any one flock is much wider than it is long. Sometimes they fly close to the water, sometimes at a height of a few feet, but they practically never fly at a considerable height above the sea. They generally take a course that keeps them over water, but sometimes, to shorten their route, they fly across projecting points of land.

The Southern Eiders, and probably the other kinds as well, engage in courtship activities when resting during the migration period, as well as after their arrival on their nesting grounds. When courting, the male swims near the female, and gives evidence of his feeling by rising partly up from the surface of the water, so as to display for a moment the large black area on his underparts, by special movements of the head and neck, and by soft, dove-like notes, frequently repeated, which sound like "Ah-coo!", or "K'doo!". Often several drakes court a single female duck at one time. She generally affects to be quite indifferent to them and answers their pleading notes only with an occasional hoarse quack.

The nests of Southern Eider Ducks are usually placed in more or less sheltered situations, such as in tall grass, beneath bushes or stunted evergreen trees, in comparatively

well-developed ...

well-developed spruce woods, or beside a boulder, a small cliff, or a log, but in some cases they are on very exposed sites. The female Eiders make the nests, which are shallow depressions in the soil or in dense moss or other vegetation, and line them to a large extent with soft gray down from their own breasts. No part of the eiderdown in the nests is furnished by the drakes. Such materials as dead grass, moss, and leaves, if available near the site of the nest, are also frequently used as nest-lining, and indeed the proportion of eiderdown in the lining of the nest varies greatly in different instances.

The eggs are large, about two inches by three inches, and are usually medium olive-green in color, though there is some variation in this regard, some being lighter, some darker, and some browner than the average. There are usually four eggs in a set, although sets of five are common, and sets of six, seven, or even eight occur not infrequently.

About the time that incubation begins, the drakes desert the females and gather in flocks on good feeding-grounds, where in mid-summer they moult their feathers, wearing for a time the dingy plumage known as the "eclipse plumage". Many of the male Eiders from the Gulf of St. Lawrence fly in small flocks through the Strait of Belle Isle into the open Atlantic Ocean before undergoing the moult. By the first of September most of them have resumed their usual handsome garb. For a short time during the summer, immediately following the moult of the principal flight-feathers, these birds are unable to fly. Until new flight-feathers grow they must move about by swimming and walking only.

After ....

After four weeks of incubation the young Eiders hatch. - They remain in the nest only a few hours, or until they have dried externally, so that their fluffy down expands and protects their little bodies. Then they accompany their mother to the sea or to some sheltered pond, where they are able to swim and dive well from the first.

Male Eiders take no part in caring for their young, but the mother birds generally attend their offspring faithfully until they are nearly fully grown. It is a common practice for several mother Eiders, from two to half-a-dozen, to merge their downy broods and care for them and defend them together. This example of seeking safety through close co-operation is an interesting social development in this species.

The principal enemy of the downy young Eiders along the north shore of the Gulf of St. Lawrence is apparently the Great Black-backed Gull, which eats many of them, especially when its normal fish food is scarce. The mother Eiders defend their young with courage and effectiveness, so that it is difficult for a Great Black-backed Gull to seize a duckling from a group convoyed by several resolute mothers unless it happens to fall behind the main group or unless some unusual disturbance occurs. The Gull will rarely venture to engage in direct combat with the adult ducks, although I once saw a Great Black-backed Gull and a mother Eider Duck joined in such close and fierce strife on the surface of the water that spray flew in all directions and for a while it was difficult to distinguish one bird from the other. When, however, a motorboat passes near a group of mother Eiders with their young, most or all of the old ducks are apt to be frightened away and the little ducklings are scattered. This gives the waiting and ever-observant Gulls their best opportunity and before the excited mother Ducks can re-assemble their charges in safety, one or more of the ducklings is very likely  
to be .....

to be seized and eaten. Thus it comes about that most of the consumption of young Eider Ducks by Great Black-backed Gulls occurs near motorboats and is seen by human observers, giving an exaggerated impression of the rate and extent of such destruction.

The favorite food of the Southern Eider is the edible mussel, although other mollusks, crustaceans, sea-urchins, worms and occasionally small fish, such as capelin, are eaten. The food is usually taken from rocky bottom by diving in several feet of water.

During the autumn months the Eiders migrate southward, but the autumn migration does not appear to be as definite or as well-known a movement as the spring migration. Large numbers of Eiders, including the Southern Eiders from the Gulf of St. Lawrence, winter off the coasts of Nova Scotia and New England. The thousands of Eiders that winter in the Gulf of St. Lawrence, among the drift ice, are probably Northern Eiders from the Eastern Arctic. Eiders may, in winter, stay away from land for months at a time. Like some other sea-birds, they seem to be able to thrive without fresh water to drink.

The Common Eider is of special interest to mankind because it supplies the world with genuine eiderdown, that warm, soft, light, resilient material that surpasses all others as a filling for such articles as comforters and sleeping-bags.

When the Gulf of St. Lawrence was first explored by white men, Eiders nested in countless numbers on small islands along its shores. No doubt they were the ducks that Jacques Cartier found, in 1534, nesting on islands near the present village of Old Fort, in Saguenay County, Quebec. As the coasts of the Gulf became more and more settled by Europeans, an increasingly heavy toll of flesh, eggs, and down was exacted from the Eiders, until, early in the present century, fears began to be entertained for their continued survival.

In this ...

In this case, however, adequate conservation measures were adopted in time to be effective. Protective legislation was adopted by both the Government of the Province of Quebec and the Dominion Government, a series of bird sanctuaries was established on islands along the north shore of the Gulf of St. Lawrence, and a staff of patrolling officers, through protective and educational measures, made the protection of Eider Ducks a reality. These ducks now nest commonly on islands in the St. Lawrence from Kamouraska to Bic and on thousands of islands fringing the coast of Saguenay County.

Our Eiders have, however, the unusual distinction of receiving additional protection through a unique industrial development, based upon the eiderdown that they supply. Protection of this kind has been given for centuries to Eiders in Iceland and Norway. It depends on the development of a popular interest in living Eiders through supervised harvesting and commercialization of their valuable down.

This industrial development is now made possible in Quebec by co-operation between the Department of Mines and Resources, of the Dominion Government, and the Department of Lands and Forests and Game and Fisheries of the Government of the Province of Quebec, but many persons and organizations assisted most disinterestedly in initiating it. Credit should be given to the late Dr. Charles W. Townsend, of Ipswich, Massachusetts, who was a frequent visitor to the Province of Quebec and did much to advance the idea of an eiderdown industry here; to The Labrador Voluntary Educational League, of which Miss Hazel Boswell is Honorary Secretary, which gave the plan for such an industry important support; to the I.O.D.E. of Montreal, which gave practical aid by supplying funds for instruction of fishermen in methods of gathering and cleaning the down; to the Provancher Society of Natural History of Canada,

which ...

which initiated the eiderdown industry on its own islands, near the south shore of the St. Lawrence estuary; to the firm of Louis T. Blais Limitée, Quebec, which, by offering to buy well-cleaned down at a fair price, made the industry a self-supporting commercial success; and to the Hudson's Bay Company, which has co-operated very helpfully and is now engaged in operations that may greatly enlarge the industry in Canada. The present Canadian production of cleaned eiderdown for commercial purposes began in 1933, on the north shore of the Gulf of St. Lawrence, and has grown steadily ever since. Its principal object is rational conservation of the Eider Duck, but it also serves other important ends.

Suitable coastal islands in Saguenay County on which numerous Eider Ducks are accustomed to nest have been divided into numbered groups, each of which constitutes an eiderdown production area. These islands are Crown Lands, administered by the Provincial authorities. Any responsible resident of the region may lease for the purpose of eiderdown production, under proper safeguards, one or more of the areas thus delimited. Each lease is for the term of five years, with a nominal rental of two dollars a year. Each lessee whose rental is paid up to date is furnished by the Dominion Department of Mines and Resources with a permit under The Migratory Birds Convention Act, authorizing him to collect, possess, and sell eiderdown taken from nests on his leased area. Government officers inspect the leased areas at intervals to guard against possible improper use of the privileges given the lessees or other harm that might befall the birds resident on these islands. Each lessee is required to report annually in writing the amount of cleaned eiderdown that he has collected and the disposition that he has made of it.

The number.....

The number of Eider nests in a single leased area may be as low as seventy-five or as high as one thousand, or even more. Continued protection of those areas where the number is still low is expected to result in marked increases in the numbers of nests there. It is very likely, also, that a diligent lessee of an eiderdown production area can attract more Eiders to nest on his islands by increasing artificially the number of attractive sheltered nest-sites there. In Iceland much has been done in this way by cutting out alternate sections of turf on a hillside and by removing alternate stones in the lowest course in a stone wall. From thirty-five to forty nests are ordinarily necessary for the production of a pound of cleaned down.

The residents who engage in this business gather the eiderdown from the ducks' nests during the period of incubation of the eggs.

The season in which this harvesting of down takes place usually extends from the last days of May to the middle of July. Those operators who are also commercial fishermen are normally able to gather most of the down from their leased islands before they begin their fishing operations of the summer season.

Care is exercised to see that the eiderdown is gathered on a warm, dry day. On arriving at a nest, the gatherer takes from it the eggs, ~~of which there are usually four or five,~~ and places them on the ground or turf beside him. Most of the down in the nest is then picked up, as free from grass, twigs, moss and other foreign materials as possible, and is placed in a sack. A little of the down, preferably the poorest, is not removed, but is quickly formed into a pad, which is placed in the bottom of the nest. The eggs are then carefully put back in the nest, where they rest on this pad.

After ....

After eiderdown has been gathered in this way, the mother duck will usually pluck more from her body and put it in the nest to replace in part what has been taken. Consequently it is usual to collect down from each nest on at least two occasions, a few days apart, during the incubation period, which lasts for four weeks. In some cases it has been found profitable to gather down from a nest three times. When the incubating Eider has no more down for her nest, she covers her eggs with dead grass, leaves, moss, or other similar materials, which seem to meet her requirements satisfactorily. Practically no down is ever gathered after hatching of the eggs has occurred.

The eiderdown is cleaned by methods developed originally in Iceland and adapted to conditions in eastern Quebec Province. First it is warmed on racks in the sun on two or three fine days, with occasional turnings and shakings with a fish-fork. Then it is repeatedly heated carefully over a stove, usually in some outbuilding, and is rubbed forcibly, while hot, over taut parallel cords strung in a frame. During this process the down, which is very cohesive, remains in a light mass on top of the cords, while the feathers and bits of foreign material that are mixed with it fall out of the mass and drop between the cords to the ground. The final process, in which women generally excel, consists of examining the down carefully, a handful at a time, and removing by hand any foreign objects that may be found in it. In some cases all members of the family co-operate in the cleaning. Some of the original permittees became discouraged before attaining even moderate skill in this task of cleaning the down and abandoned the industry, but others, possibly with greater natural adaptability to work of this type, have gained through much practice the ability to clean eiderdown without exceptional effort.

The operators .....

The operators may keep their down for their own use or may dispose of it as they please. Most of it is sold at wholesale rates to trading companies that deal in all the commercial products of the region. The present prices for cleaned eiderdown are five dollars a pound wholesale and six dollars a pound retail, f.o.b. Quebec.

The quantities of cleaned eiderdown marketed annually from the leased production areas on the north shore of the Gulf of St. Lawrence, since the inception of this supervised industry, are as follows:

<u>Year</u>	<u>Amount of cleaned eiderdown sold.</u>
1933	about 25 lbs.
1934	" 35 lbs.
1935	59 lbs. plus
1936	81 lbs. $7\frac{3}{4}$ oz.
1937	134 lbs. 8 oz.
1938	138 lbs. $11\frac{1}{2}$ oz.
1939	146 lbs. $6\frac{1}{4}$ oz.

A quantity of well-cleaned eiderdown has a beauty that makes it very attractive. It is mouse-gray in general color, with numerous little flecks of paler gray scattered through the mass. So soft and light and clean is it, so well does it cling together, that it is readily recognized as the finest material of its kind in the world. Unfortunately, down and feathers from domestic geese and other waterfowl, as well as other materials, are frequently sold as eiderdown, so that the would-be purchaser who desires to obtain the unrivalled genuine article must be on his guard to see that color and quality are right.

The effect of the eiderdown industry on the Eider Ducks of the St. Lawrence estuary and gulf has been almost wholly favorable. Among the thousands of nests from which down<sup>is</sup> ~~has been~~ gathered during the incubation period, an extremely small fraction of one per cent contain sets of eggs that subsequently fail to hatch. These presumably are the nests of birds that in some way meet with ....

meet with disaster before they complete incubation. It is safe to conclude that careful handling of the eggs and gathering of down in the manner described seldom, if ever, causes the incubating Eider to desert her nest or prevents normal hatching of the young.

The persons engaged in harvesting eiderdown realize that it is directly to their interest to have as many Eider Duck nests as possible on their leased islands and they therefore seek to induce the Ducks to nest there. They protect their areas, in the nesting season, against poaching, including not only illegal shooting of the Eiders, gathering of their eggs, and unauthorized collecting of their down, but also unlawful killing or molestation of other kinds of birds on such areas, for the reason that any shooting or trespassing on the islands would disturb the Eiders to some extent, even if not directed against them, and so would tend to drive them elsewhere. Thus the permittees become valuable co-workers with the game officers in protecting all bird-life on their leased areas from unlawful destruction or disturbance. It is true that in some districts the protection thus provided is not completely effective, yet it is much better than what it would be practicable to provide without some such system as is now in effect, and the annual production of young Eiders in the Province of Quebec has increased in consequence.

The growing eiderdown industry in the Province of Quebec has always paid its own way, without any form of bonus, direct or indirect. It is proving to be an effective method of conservation and a sound economic development of one of Canada's natural resources, while at the same time it is an additional source of revenue for people whose possible sources of income are limited.

In 1939 ....

In 1939 the Hudson's Bay Company, having obtained the permission of the Dominion Government, stationed a special representative in southern Baffin Island to undertake development of an eiderdown industry in that region, where Northern Eiders nest annually in very great numbers. If the Eskimos who live there can be taught the proper methods of gathering eiderdown without harm to the birds or their eggs and can acquire the manual skill necessary to clean the down thoroughly, it would appear practicable to build up a considerable eiderdown industry in Baffin Island and some other parts of Arctic Canada. No eiderdown is yet being shipped commercially from Baffin Island, but some may be expected during 1940. The ultimate success and extent of this industry and the aid that it may give to human residents, and also to Eiders, along the coasts of northern Canada cannot yet be foretold.