

## GAME BIRDS OF THE HOOPER BAY REGION, ALASKA.

BY H. B. CONOVER.

*Plates VI-VII.*

DURING the spring and summer of 1924, Mr. H. W. Brandt of Cleveland, and myself, in cooperation with the U. S. Biological Survey, made a trip to the breeding grounds of the large wild-fowl, lying along the coast of Bering Sea south of the Yukon Delta. Our party consisted of the two above mentioned, O. J. Murie, Assistant Biologist of the Survey, and Frank Du Fresne, U. S. Government Fur Warden at Nome; also we had with us from late April until the last of June, Jack Warwick, Government Fur Warden at Flat. The Survey men were principally interested in photography, bird banding and a general survey of the region visited. Brandt was the oölogist of the party, spending most of his time making a large collection of eggs, while I was interested only in the game birds, especially in securing specimens of the downy young. Brandt and I arrived in Fairbanks the middle of March and there met Murie, who had preceded us by several weeks. Through his efforts everything was ready for an immediate start, and on the twentieth we left Nenana with two dog teams for the coast of Bering Sea. At Flat, which we reached early in April, Warwick joined the party, and a few days later at Russian Mission we were met by Du Fresne. Just below Mountain Village we left the river and cut southwest across the tundra to Point Dall, arriving April 28. There we were lucky enough to find Mr. and Mrs. Ebright, who were in charge of the native school. Classes having closed for the year, they very kindly turned the school room over to us for our headquarters.

Point Dall is about twenty miles long by about five wide. On its south side lies Hooper Bay and on its north Igiak Bay. Along the end of the point is a narrow line of low sandhills and back of this is flat tundra for a short distance and then low rolling hills with marshy valleys and ponds. Bordering the bays are mossy tidal flats. Our headquarters were about two miles from the end of the point. At the end of Igiak Bay, about twenty-five miles in an air line from the schoolhouse is a low range of mountains called

the Askinuk Range. This strip of mountains is about ten miles wide and runs east and west for about thirty miles. It does not reach an elevation of much more than two thousand feet. Back of Point Dall and Hooper Bay the country is low, flat tundra, covered with lakes and intersected everywhere by tidal rivers and sloughs. Here and there are a few isolated hills.

During May and June our party worked the country about headquarters at Point Dall. This was a wonderful place for nesting shore birds. Toward the end of June, Murie and Brandt made a week's trip to the head of Igiak Bay and the Askinuk Range. On their return about the twenty-sixth, Brandt left for home. On July 8 we moved headquarters to a motor scow, anchored in a river close to where the Askinuk Range touches Igiak Bay, and stayed there about a week. On July 17 we started into the interior with the motor scow. The plan was to travel up a small slough (the Kokechek River) which connected Igiak Bay with the Kashunuk River, then travel down the Kashunuk about fifty miles to where a branch of it entered Hooper Bay. The trip was made as planned, but on account of bad weather and a series of accidents which delayed us about six days, there was very little time for study of this region. A small Goose drive was finally organized, however. On August 8 we arrived back at the schoolhouse on Point Dall and the next day left for Nome.

A point especially noticed by all members of the party was the great destruction of eggs and young birds by natural enemies. Three species of Jaegers spent the greater part of their time hunting the tundra for eggs, also taking the young of the smaller birds. Gulls, especially the Glaucous Gull, many of which nested on the tundra, were very destructive to young Geese and Ducks. Du Fresne, who has made an especial study of the Snowy Owl, found that while there were eggs in the nest, the diet was mostly mice, but as soon as the young commenced hatching, many birds were killed.

The following notes pertain to the fifty species of game birds either collected or observed in this region. Thirty-four of these nested in the vicinity and the downy young of twenty-four of them were taken. The Black Turnstone and the Emperor Goose, so far as known to me, have not been taken previously in the downy stage.

**Mergus serrator.** RED-BREASTED MERGANSER.—This Duck made its first appearance May 11, when three drakes were seen flying along the coast. Ten days later it was common, but did not come into the tundra until May 26. It was not a common nester in this region. Only two nests were found by our party, the first on June 25. One of these, containing ten eggs, was situated on a grassy knoll about fifty feet from a tidal creek.

The weights of a male and female respectively were 2 lbs. 11 oz. and 1 lb. 14 oz.

**Anas platyrhynchos.** MALLARD.—On our trip to Fairbanks from Seattle, a flock of about a dozen was seen on a tidal creek near Seward on March 15, at which time snow covered the ground.

Mallards first put in their appearance at Point Dall on May 18. They were rare in the region where we were, and throughout May and June only occasional ones were seen, these mostly drakes. I believe fifteen or twenty miles back from the coast they would have been more plentiful. A nest was found on June 15. On July 14, a drake was collected which had just shed its primaries. It was in a bad state of molt, but still retained over half its nuptial plumage.

**Mareca americana.** BALDPATE.—Only a few straggling birds of this species were seen, and no nests were found. A pair was observed on May 25, and a flock of about eight drakes on June 28. One of these males was killed and found to be just starting to moult into its eclipse plumage.

A female weighed 1 lb. 13 oz.

**Nettion carolinense.** GREEN-WINGED TEAL.—This was a scarce bird around Hooper and Igiak Bay. A pair was shot on the coast May 14, but after that only an occasional odd bird was seen. Several nests were found, the first on June 1. Another found on June 6, with nine eggs in it, was destroyed by Jaegers. The middle of July a female was seen that acted as if she had young, but they could not be located. Probably this Teal would be found nesting much more plentifully farther inland.

**Dafila acuta.** PINTAIL.—The first Pintails noticed were seven flying along the edge of the sea on May 8. During the next week a few were seen each day and by May 18, they had become common. This was the only shoal water Duck nesting in this region in any numbers, but it was the most plentiful of all the different species of Anatidae found here. Pintails seemed to do a great deal of their courting on the wing, and it was a common sight to see one or two drakes chasing a duck about, as she dodged and circled through the air. In one evolution noticed the female suddenly made an almost perpendicular climb of about fifty feet, accompanying this maneuver by drawing her head back against her shoulders. At another time a female which had evidently left her nest to feed, was seen on the ground with three drakes in animated attendance. She would flutter along a few feet, only to be surrounded again immediately. From her actions the attention of the males did not seem very welcome. As late as June 23, drakes were still courting the females.

The first eggs were found on May 25, when two nests with two eggs and

three eggs, respectively, were located. By June 1, nests with their full complement of eight, nine or ten eggs were being found. The females made holes in the dry ground, generally out in the open, which they lined with blackish down. The nests were located almost anywhere, on dry spots in the marshy valleys close to the water, or on mossy hillsides at some distance from any pond. We were still finding nests with fairly fresh eggs up to July 10, but these late sets were always very small, averaging four or five. Evidently some of the females lay again if their first nests are destroyed.

The first newly hatched young, a brood of eight, were seen on June 22. In a few days they had become common sights. At times broods must become mixed, for on one occasion a female was seen with four young, three of which seemed to be about a week or ten days old, the fourth a newly hatched bird. This little fellow was hardly a third the size of the others, but was perfectly at home. The females are very good mothers, flopping and splashing around in an attempt to cover the retreat of their ducklings. By July 24, the young Pintails were about half grown and could take care of themselves so well that unless there were two or three men in the party, it was very difficult to catch them for banding.

On June 6 the first signs of the drakes flocking was observed. By the tenth parties of males were everywhere on the ponds. One was shot on the eleventh, but showed no signs of eclipse plumage, although the breast was full of small pin feathers. Another, killed on the fifteenth, had the upper breast brown and a scattering of brown feathers throughout the lower breast, abdomen, flanks and back. He was still with a female. The majority of the drakes had left the tundra around Point Dall, probably for the interior, by July 5, and what few were left appeared to be well into the eclipse plumage. On July 24 a drake in perfect eclipse, with the new primaries about a third grown, was killed. By August 1, the moult seemed to have been completed, as small flocks were seen flying about the tundra.

The weights of five males were respectively 1 lb. 15 oz., 1 lb. 13 oz., 1 lb. 14 oz., 1 lb. 14 oz., 2 lbs., 5 oz.; and two females respectively 1 lb. 13 oz., 1 lb. 14 oz.

**Marila marila.** GREATER SCAUP DUCK.—March 13, on the trip from Seattle to Seward, a few Scaup Ducks were seen feeding about the docks at Cordova, Alaska.

This bird first made its appearance at Point Dall on May 18, when about ten were seen flying along the coast. Three days later it was common. May 23 it was first seen about the ponds and creeks in the tundra. After May 27 it was the second commonest Duck in this region, being outnumbered only by the Pintail. On June 6, the first nest, containing nine eggs, was discovered. The female generally makes her nest on dry ground close to some pond or creek. Clutches of eggs averaged seven or eight.

By June 10, the drakes had evidently begun to leave the females, as small flocks composed exclusively of males started making their appearance. After the first of July, Scaup became scarce, as the females were sitting,

and the drakes had almost disappeared from the tundra. The first downy young, a brood of six, were seen on July 10. From then on the commonest ducklings seen about the ponds and rivers were of this species. When broods were encountered, the females seemed concerned, but not to the point where they endangered themselves greatly. Generally, when one approached, the mothers left their young, alighting on the nearest pond fifty or a hundred yards away.

Three adult females shot between May 25 and July 10 all had a white spot on the ear coverts. One had this mark clear white and the size of a dime. In the others this spot was specked with brown. I can find no reference to this marking in any of the standard works available. It seems, however, that it must either be due to a wearing of the feathers, or to a partial late spring moult. A male taken on July 3 showed no sign of changing into the eclipse plumage.

Weights of some of the specimens taken were as follows:—Three males, respectively, 2 lbs. 2 oz., 2 lbs. 1 oz., 2 lbs. 3 oz.; and of two females 2 lbs. 6 oz., 2 lbs. 15 oz.

**Glaucionetta sp.** GOLDEN-EYE.—On May 21, a few birds of this genus were seen on ponds in the tundra. No more were noticed until June 11, when five drakes, probably *americana*, were seen. They were very wild. On July 4, five more were seen.

**Charitonetta albeola.** BUFFLEHEAD.—On May 26, two females were seen on a pond close to the shore.

**Clangula hyemalis.** OLD-SQUAW.—This was the first duck to reach Point Dall in the spring. When our party made its first visit to the coast on May 2, this was the only Duck seen, about thirty-five flying by in half an hour. From that date until May 14, on all favorable days many were passing north, sometimes low over the water, often high in the air. While migrating, the drakes continually gave their musical call. The biggest flights were seen on May 7, 8 and 14. On May 9, there was a strong north to northwest wind and very few birds of any kind were migrating. Many Old-squaws, however, were sitting around on the open water, just off the shore ice, and we had an excellent opportunity to observe them. It was noticed that as they dove, they raised the wings, keeping the manus parallel with the body. From this action it would seem that they may use the wings in swimming under water. The males were very jealous, chasing away any others that came close to their hens. The drakes were in every stage of plumage, from the full summer dress to the winter. On May 7, seven were killed, three in not quite perfect summer plumage, four in practically full winter plumage. Five others, observed on May 9, consisted of one in winter plumage with few dark feathers on throat, one in full summer plumage and three in summer plumage with crown of head whitish; and other white feathers showing elsewhere. Females were generally in dark plumage, but some appeared very light colored.

By May 21 they began to be noticed about the tundra. The males were now courting assiduously. They would face the female, raise the tail



NEST OF EMPEROR GOOSE.

vertical to the body, draw the head in and raise the breast off the water until they were practically sitting on their tails. At one time three drakes and a duck were seen on the land by a pond. They would flop along dragging their bodies over the ground as if they were crippled and could not either fly or walk. This was kept up for several minutes, before they took to the water, where one drake appeared to conquer and soon drove away the other two. The pair that remained was very tame, and although the pond was not over twenty-five yards wide, they allowed us to walk up to the edge without showing any great concern. This Duck was a very common nester all over the region. The nests were generally located close to a pond, sometimes on the bank and other times twenty-five or thirty feet away. They were simply hollows in the ground, hidden in the grass and lined with down. The first eggs were found on June 5. Clutches ran from five to seven or eight. The drakes started flocking about June 25. Parties of fifty or more were seen on the larger ponds, often with one or two females intermixed, probably non-breeders. After July 10, males were hardly ever noticed, as they had evidently gone back to the sea.

The first downy young appeared on July 2. The females now became very solicitous, as the following experience will show. A brood of five was encountered, and desiring to collect them, with the help of an Eskimo boy I attempted to drive the young ashore in a narrow bay. This failed, so I began to shoot them. Every time one was killed the female would rush up and grab the downy with her bill. Shot after shot was fired, but the female refused to leave, until finally she was collected also. Despite this care for their young, the mortality among the ducklings must be very high, as later it became a common occurrence to see an Old-squaw swimming about with only one young following her. Many females without broods were about. Often these were in pairs, but sometimes singly.

Weights of those shot were as follows: Males 1 lb. 13 oz., 1 lb. 15 oz., 1 lb. 14 oz., 1 lb. 12 oz., 1 lb. 10 oz., 2 lbs. 2 oz., 1 lb. 10 oz., 1 lb. 10 oz., 1 lb. 14 oz., 1 lb. 15 oz.; and females 1 lb. 12 oz., 1 lb. 8 oz. and 1 lb. 9 oz.

**Histrionicus histrionicus.** HARLEQUIN DUCK.—This Duck was only recorded twice at Point Dall. On May 19, Du Fresne saw and collected a single male, and two days later another male was brought in by an Eskimo. On August 26, while the steamer was stopping at False Pass, Alaska Peninsula, about thirty Harlequins were seen. They were in the vicinity of a stranded whale and may have been feeding on it. One bird was noticed that still lacked the use of its wings.

A male shot weighed 1 lb. 9 oz.

**Polysticta stelleri.** STELLER'S EIDER.—This was the last of the Eiders to make its appearance, although it became common before the Spectacled Eider arrived in any abundance. It was first seen on May 18, when about forty were observed in small flocks of from six to eight. The next day about the same number was seen, and after that it became common. Their flight is very much swifter than that of the other Eiders, and if a flock is

shot into, the birds twist and turn like Scaups; in fact except for the coloration of the drake, their appearance is very unlike Eiders. By May 23, a few were flying about the ponds in the tundra and by May 27 they had become common. One flock which was watched was seen to be feeding on some variety of water grass, tipping up for it in the shallow water like Mallards. These Ducks by now had become very tame.

This was the only species of Eider of which the immatures were seen in any numbers. On June 4, two immature drakes were noticed on a pond with two pairs of mated adults. They were watched through field glasses and it was noticed that the adult drakes were very jealous of the youngsters, driving them off whenever they approached the females. The young drakes were not seen to take any interest in the females, however. No more immatures were noticed until July 1, when three females were shot. After that both ducks and drakes were seen occasionally about the tundra. The young females appear quite different from the adults, being slightly lighter colored and lacking the blue speculum. Two drakes, shot on June 4, differ quite widely in the amount of adult plumage they possess. One is in the brown plumage except for a mottling of white on the upper breast. The other has the head grayish, a tuft of slightly greenish feathers on the back of the head, and bright metallic blue scapulars. Whether this difference is due to age or individual variation is hard to say. On July 3, an adult drake was collected which had started to moult into the eclipse plumage. It had not as yet commenced to change the body feathers, but the head and neck were more than half moulted. After about July 10, very few drakes were seen about the tundra.

Very few were found nesting about Point Dall, but, like the Spectacled Eiders, they bred commonly on the flats of Igiak Bay. Generally the nest was placed on or near the edge of a pond. The females were very tame. One driven from her eggs which were about to hatch stayed within ten feet, clucking and fussing about while photographs were being taken. The first eggs were found June 19, and downy young were seen July 8.

Weights of specimens taken are as follows:—5 adult males, 1 lb. 15 oz., 2 lbs., 1 lb. 14 oz., 1 lb. 15 oz., 1 lb. 15 oz.; 5 adult females, 2 lbs., 1 lb. 14 oz., 2 lbs. 2 oz., 1 lb. 15 oz., 1 lb. 14 oz.; 4 immature males, 1 lb. 14 oz., 1 lb. 11 oz., 1 lb. 11 oz., 1 lb. 11 oz.

**Arctonetta fischeri.** SPECTACLED EIDER.—First seen on May 5, when an Eskimo brought in a pair he had shot. No more appeared until May 12, when five were seen flying along the coast. From that time on, pairs or small flocks were seen every day or so, but it was not until May 21, that any flight occurred. On that day quite a number of these birds passed. The next day many flocks were flying about the tundra. On May 23, another little flight of Spectacled Eiders occurred, and again we noticed, as we had on the 21st, that almost all the birds seemed to come from the north, and passing Point Dall, entered Hooper Bay. The flights of the other three species had all approached the Point from the south. Undoubtedly the flocks we saw were composed entirely of birds that were coming to nest



in the immediate vicinity, but their arrival from the north suggests that they may winter in some part of northern Bering Sea.

They did not nest commonly on Point Dall, but were abundant nesters on the flats about Igiak Bay. The first eggs were found on June 13. The nests were built generally close to the shore of some pond. The females were very solicitous and very tame. Murie saw one that he had just driven off her nest fly up immediately and cover her eggs when she noticed a Jaeger approach, although Murie had not gone over fifty yards from the nest.

With the exception of one immature female taken by Murie on June 6, only adult birds were seen. This bird was considerably smaller and much lighter colored than the adults. A male taken June 28 was just starting into eclipse. Another taken July 4 was much more advanced in its moult. After this latter date males were conspicuous by their absence.

Young were first seen on July 8, but they were evidently several days old. Broods of this Duck soon became common. Twice two females were seen with one brood, the first of four and the second of nine ducklings. In both cases all the young seemed to be of the same size, and it was impossible to tell whether two broods were mixed together or whether all belonged to one female. Both old ones showed great anxiety, and while one stayed with the young, the other would flap about wildly, finally coming ashore in an attempt to lead me off.

The large Glaucous Gulls probably do great damage to the young of this bird. An experience that I had one day strengthened this belief. I had come to a pond where there was an old Spectacled Eider with three young. As I was watching them, I noticed that two pairs of the large Gulls were nesting around this same pond. One of these Gulls was shot, dropping into the water near the old Duck. She immediately left her brood and fluttered toward the Gull, calling excitedly. At first she was very cautious, staying several feet away from it, but finally gathering courage she dashed at the dead bird, jumped over it, and as she did so, made a half-hearted peck at the carcass. This was repeated again and again. Liking her courage, I decided to help her family, so shot the remaining Gulls. The female became almost beside herself with anxiety, and when I left, was dashing from one dead Gull to the other.

The weights of eight males were respectively, 3 lbs. 3 oz., 3 lbs. 8 oz., 3 lbs. 11 oz., 3 lbs. 10 oz., 3 lbs. 12 oz., 3 lbs. 5 oz., 3 lbs. 7 oz. and 3 lbs. 11 oz.; four females, 3 lbs. 14 oz., 3 lbs. 6 oz., 3 lbs. 14 oz., 3 lbs. 8 oz. An immature female weighed 2 lbs. 11 oz.

**Somateria v-nigra.** PACIFIC EIDER.—On May 4 a few Eiders were seen flying north, but the only ones identified were King Eiders. On May 6 many Pacific Eiders were passing. Flocks contained from three to thirty birds. This species was never seen in such large flocks as the King Eider. They seemed to like to fly close to the edge of the shore ice. Flocks would first be noticed coming across the open water at the mouth of Hooper Bay. As they struck Point Dall, the birds would often swing

inshore until they reached the ice on the edge of the open water, when they would turn and follow this north. Males seemed to predominate. The only note we heard them utter was similar to the call of the King Eider, "Urr Urr."

On May 8 there was a large flight of Pacific and King Eiders. Flocks of the former often had from one to six of the latter species mixed in with them, but flocks of King Eiders never were seen with Pacific Eiders among them. This, however, was the only day when mixed flocks were noticed. On May 9, not over fifty were seen in three to four hours' watching. This was the day of a strong northwest wind, during which there was very little migration of any sort. On May 11, a big flight of King Eiders passed, but very few of this species were seen. The following day, however, both kinds were passing in large numbers. About twenty per cent of the flight were Pacific Eiders, we estimated. Probably three to four thousand were seen in six hours. May 14 and 15, a few passed. From then on, only a few were seen each day. On May 18, two immature males were seen passing north. They were the only ones noticed on the trip. By May 21, the migration was over. On that day a few were seen flying up and down the coast. They were also noticed for the first time flying about the ponds in the tundra.

May 28, the first nest was discovered, and on June 28, the first downy young were seen, a brood of six, a day or two old, found in a very small pond back in the low hills. At my approach the female flopped over the water despairingly, but when I fired at one of the young, she left the vicinity immediately. The downies could dive very well, and in half a minute no sign of life appeared on the surface of the pond. Walking carefully along the shore, a young bird was soon discovered flattened out in the grass at the water's edge. It made no effort to escape as I bent over, evidently thinking itself well hidden. Following around the entire shore line of the pond, the entire brood was soon captured. That the female of this species may not make a very devoted mother, seems borne out by another instance. On June 29, Murie found a nest with three young and two eggs. When the nest was visited again June 30, the female had left with the three young already hatched, although the remaining two eggs were pipped and the young still alive in them.

Of the three species of Eider nesting in the vicinity of Igiak and Hooper Bay, this bird was the rarest, although during the early migration it was the second in abundance of the four Eiders, being outnumbered only by the King Eiders.

A female, taken on July 17, had her entire stomach and neck filled with black mussels from one to two inches long.

Weights of specimens taken ran as follows: Seven males, 6 lbs., 6 lbs. 1 oz., 6 lbs. 1 oz., 5 lbs. 11 oz., 5 lbs. 6 oz., 5 lbs. 1 oz. and 6 lbs. 3 oz.; four females, 5 lbs. 6 oz., 4 lbs. 11 oz., 5 lbs. 6 oz. and 6 lbs. 6 oz.

**Somateria spectabilis.**<sup>1</sup> KING EIDER.—This species was seen only in migration, but it passed Point Dall in countless thousands from May 4 to May 26. The greatest flights were on May 11, 12, and 15. The best idea of this migration perhaps can be given by direct transcripts from my notes on the species made at the time. Unfortunately every day was not covered, as some days had to be given over to the preparation of specimens.

"May 4. Three killed by Murie to-day from a kayak in the open lane of water along shore. From 2:30 to 5:30 P. M. he and I probably saw 250 Eiders pass, flying north. They kept well out from the shore ice, as the open lane was full of floating cakes and small bergs. Majority of the Eiders seen were King, the rest Pacific. One lone drake King Eider was seen passing in a flock of Old-squaws. The birds flew low over the ice and water. Flocks contained both sexes, but males seemed to predominate.

"May 6. Saw one flock of about thirty to-day and a few others. Many Pacific Eiders passing. Both species give a low grating call "Urr Urr" as they are flying by. The King Eiders seem to go in much larger flocks than the Pacific. Yesterday Du Fresne saw a flock containing several hundred.

"May 8. Quite a number passing to-day. There are often one to six King Eiders mixed in with a flock of Pacifics. Largest flock to-day contained about 30 or 40 birds. They are much shyer of the shore ice than the Pacific Eider, keeping well out of gun range as a general rule. The square knob on the bill of the drake shows up very prominently as they pass.

"May 9. Only about forty seen to-day in three to four hours' watching. No migration of anything to speak of. Strong northwest wind blowing.

"May 11. A large migration of King Eiders was on to-day, but very few Pacifics were seen. In six hours' watching we decided that, even putting the estimate so low that there could be no chance of exaggeration, between ten and fifteen thousand of these Ducks passed by Point Dall. Some flocks must have contained six or seven hundred birds. The birds are mated, as a male left a flock and came back to a female that had been shot. An Eskimo told us that the yellow knob on the male's bill was "all the same seal oil" and was good food for the baby.

"May 12. The migration still going on as strong as ever. Saw about the same number as yesterday. A few more Pacifics passed and five Spectacled Eiders were seen.

"May 14. Only a few passed to-day.

"May 15. Last night after supper we noticed some large flocks of Eiders were flying into Hooper Bay, then swinging north and flying out to sea again by crossing the tundra just back of the end of the point. We

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<sup>1</sup> Records for the interior seem to be very rare, so it may be well to note here that on Oct. 7, 1920, a young male of the year was taken by myself on Marsh Lake, Yukon Territory. It was found with a flock of Scoters.

were too far away to identify them, but this morning flocks were still doing the same thing. They proved to be King Eiders. Flocks contained from two to five hundred birds. Estimated low as before and decided at least twenty thousand had passed in about six hours. Whether the migration was on all night we do not know. There was a strong inshore wind. Birds flying across Point inland and also along coast. It was a wonderful sight. Four immature males seen to-day in different flocks. Up to to-day the drakes have all been adults.

"May 16. Only two or three fair-sized flocks seen to-day in two and a half hours at the shore. Very few birds of any kind flying.

"May 18. About fifteen big flocks passed to-day. From three to five hundred in a flock.

"May 19. One flock of about one hundred and a few odd birds seen to-day.

"May 21. One flock and a pair passed to-day.

"May 23. A couple of flocks of about twenty each flew by Point to-day. They seemed to be all immatures.

"May 26. Saw flock of about thirty and two single pairs to-day along coast.

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"Aug. 9. To-day as we were sailing toward St. Michael's, a flock of about fifty Eiders passed the boat. They were in very mottled plumage, but appeared to be Kings. Flock was headed south."

The weights of some of the specimens collected were as follows:—12 males, respectively, 4 lbs. 1 oz., 4 lbs. 1 oz., 3 lbs. 14 oz., 4 lbs. 6 oz., 4 lbs. 4 oz., 4 lbs. 7 oz., 3 lbs. 12 oz., 4 lbs. 3 oz., 4 lbs., 3 lbs. 11 oz., 4 lbs. 3 oz., 4 lbs. 2 oz.; six females respectively 4 lbs., 4 lbs. 2 oz., 4 lbs. 1 oz., 3 lbs. 5 oz., 3 lbs. 12 oz. and 4 lbs. 1 oz.

**Oidemia americana.** AMERICAN SCOTER.—On the voyage from Seattle to Seward this Scoter was seen commonly between Vancouver Island and Cordova from March 3 to 11.

It was first seen at Point Dall on May 18, and by May 20 was common. At this time it kept to the sea coast, but by May 26 was seen in numbers on the ponds in the tundra. On being flushed the drake would give a low whistling peep repeated over and over. This presumably was a mating call, as a drake was heard giving it as he sat undisturbed with a Duck on the water. It has another very low note, a sort of whistling "wheu."

This was a common nesting bird all through the marshes back of Igiak and Hooper Bay. It was the latest of the wildfowl to nest. The first eggs were found on June 23 and the first downy young, a brood of eight, were seen on July 16. One nest which we found was situated in some short grass about three hundred yards back from the sea beach. The eggs were of a beautiful pinkish color, very different from those of the other Ducks nesting about Hooper Bay. A drake shot on the fifth of July showed no signs as yet of going into eclipse. Pairs were still to be seen sitting around the ponds, presumably late nesting birds. A week later the drakes had all left the tundra.

Four males weighed respectively 2 lbs. 9 oz., 2 lbs. 13 oz., 2 lbs. 8 oz. and 2 lbs. 8 oz. A female weighed 2 lbs. 7 oz.

**Oidemia deglandi.** WHITE-WINGED SCOTER.—Although seen commonly from the steamer all the way from Vancouver to Cordova the first part of March, this Duck was only seen once at Point Dall, when on March 18 a flock of about ten passed.

**Oidemia perspicillata.** SURF SCOTER.—A very scarce bird at Point Dall. Two pairs were seen on May 21, and on May 29, an Eskimo brought in a male he had shot.

The weight of the male was 2 lbs. 8 oz.

**Anser albifrons gambeli.** WHITE-FRONTED GOOSE.—First seen on May 8, when a single Goose which passed as we were watching the Eider flight was identified as of this species. It was flying at the end of a small flock of Pacific Eiders. On May 10 a single immature male was shot, which was in the company of a Cackling Goose. During the next few days, singles, pairs and small flocks were seen until by the middle of the month this Goose had become common.

This species was a common nester about Point Dall and the head of Igiak Bay, but seemed to prefer the higher ground rather than the low, marshy tundra. Of three nests which the writer saw, all were situated in the small hills. Two were located on a dry hillside while the third was placed on top of a large tussock situated in a marshy spot on the hilltops. The gander was always a close attendant on the goose, generally being found near the nest and never over seventy-five yards away. When any one approached, they usually stretched out flat, and unless stumbled upon accidentally, the nest was very hard to discover. Clutches ran from five to seven. The first eggs were found on May 25, when a nest with two eggs was discovered by Murie and Du Fresne. The nest was closely watched by them, and the following data on the laying and incubation period were secured. On May 25 the nest contained 2 eggs, on the 27th 3, the 29th 4, the 31st 6 and June 1st 7 eggs, the full clutch. On the morning of June 24 all seven eggs were hatched, but the young were still in the nest. For some reason the families of White-fronted Geese did not mingle with the broods of Cackling and Emperor Geese which were common along the rivers and sloughs the first few weeks in July, but kept back on the tundra about the ponds and marshy places.

I believe this Goose sheds its primaries earlier than the others. On July 14, when the Cackling and Emperor Geese seen still seemed to have full power of flight, a family of this species was found of which the female had already shed her primaries, and the male on being collected was discovered to be in such condition that he would have been flightless within twenty-four to forty-eight hours.

Shortly after the middle of July, our party left the coast and travelled inland for a short trip. It was noticed that after we had gone a few miles inland, no more White-fronted Geese were seen. It may be that in the district we were in, this species restricts its nesting to the immediate

vicinity of Bering Sea, where the ground is slightly hilly, and does not like the flatter tundra. That it does not consort with the other Geese at this season seems certain, as among the approximately two hundred Geese taken in a drive by the Eskimos, not one of this species was found.

Weights of some were as follows:—Two adult males, 5 lbs. 3 oz., 5 lbs. 8 oz. (ready to molt); two immature males, 5 lbs., and 5 lbs. 6 oz.; one immature female, 4 lbs. 10 oz.; an adult female (shot off nest) 4 lbs. 5 oz. Two unsexed birds weighed 4 lbs. 11 oz. and 4 lbs. 13 oz.

According to the above weights the breeding White-fronted Goose found at Hooper Bay should belong to the smaller race, *A. a. albifrons* as classified by Swarth and Bryant (Univ. Calif. Pubs. Zool. v. 1. 17 p. 209). However, from the three specimens available at the present time, the writer could come to no decision as to the two races. According to the weights and some measurements, my specimens belong to the smaller race, but other measurements and in one case the color of the eyelid place them as members of the larger race.

Below are given the data and measurements of each specimen:—

1. Immature, non-breeding male taken May 10, weight 5 lbs., color of eyelid not noted. Culmen 51, wing 419, tarsus 82, middle toe without claw 75.

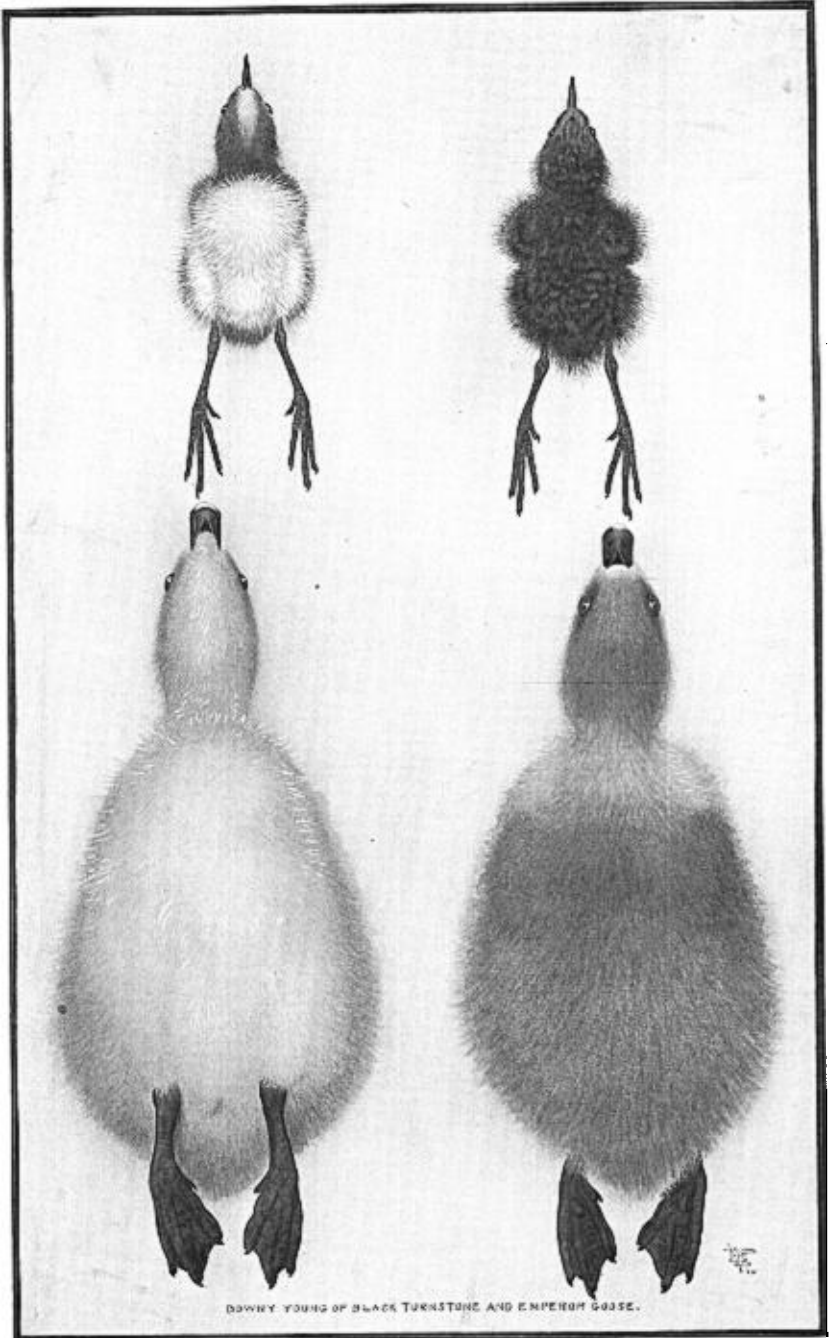
2. Adult female, shot off nest June 18, weight 4 lbs. 5 oz., color of eyelid not noted. Culmen 46, wing 409, tarsus 70, middle toe without claw 68.

3. Adult male, shot July 14, found with brood of young, weight 5 lbs. 8 oz.; eyelid yellow. Bird was about to moult primaries. Culmen 53, wing 452, tarsus 82, middle toe without claw 75.

***Branta canadensis hutchinsi.*** HUTCHINS' GOOSE.—One specimen of this Goose was taken on May 23. From the size of its testicles, it was evidently an immature, non-breeding bird. It is much lighter colored on the breast than specimens of the Cacklers taken in the same region. Compared with a breeding male of *minima* it is larger, with a considerably heavier bill. Its dimensions are as follows: culmen 40 mm.; wing 398 mm.; tarsus 78 mm.; middle toe with claw 80 mm. The weight was 4 lbs. 6 oz.

About the middle of June, while collecting on the flats about Igiak Bay, Brandt took a set of eggs of the *canadensis* group which proved on comparison to be much larger than other sets of *minima*. Unfortunately the old birds were not collected. This set may have been eggs of *hutchinsi*.

Our work with the Geese of this group was very unsatisfactory. They were not found nesting about Point Dall, and it was not until we visited Igiak Bay later in the season, by which time the young were all hatched, that we met with them on their breeding grounds. The Eskimos, however, recognize the difference between *hutchinsi* and *minima* and have different names for the two. According to their story the larger one nests more in the interior. This was also borne out by a quarter-breed, Peterson, who has lived all his life in this tundra district about seventy miles back from the coast. He claimed that both Geese nested commonly in the district where he lived, but that the larger one was the most numerous. A thor-



DOWNY YOUNG OF BLACK TURNSTONE AND EMPEROR GOOSE

ough survey of the breeding Geese of this territory would undoubtedly go far toward settling the status of the two. Personally the writer tends to agree with Major Brooks (Condor, 1913, p. 123) in believing *minima* to be a distinct species.

***Branta canadensis minima.*** CACKLING GOOSE.—The first Cackling Geese were seen on May 8, and by the middle of the month they had arrived in full force. During the last half of May, singles, pairs and flocks of three or four were seen commonly, wandering aimlessly about the tundra, as if looking for company. Those shot all proved to be immature, non-breeding birds. They were very tame, coming to almost any kind of call. Probably they had been driven out of the flock on arrival at the breeding grounds by the older mated birds. Twice a single Cackler was seen in company with a White-fronted Goose. After having seen the same birds in their winter haunts, I found the gullibleness of these Geese on their arrival in the north almost beyond belief. The Eskimos are very adept at calling them. They often wave their caps to attract the birds' attention at the same time imitating their call "Kaluk, Kaluk." When the Geese approach the note is changed to a sort of low cluck. Once two of us witnessed a group of four or five Eskimo children as they called up a single Goose, and although shot at two or three times with bows and arrows, it repeatedly returned. At another time a Goose was passing over Murie, who was walking about forty yards from me. I called loudly to attract his attention, pointing above his head, when to my surprise the Goose suddenly swung, dipped toward the ground and circled around me about twenty yards away.

For some reason the Hooper Bay side of Point Dall was not used as a breeding ground, although this species nested commonly on the flats about Igiak Bay to the north and on the tundra back of Hooper Bay. The first nest was found on June 3. I did not myself visit the breeding grounds of this bird before the young were hatched, but from information supplied by Murie and Brandt, the nests were generally placed on some little islet in the ponds. Sets averaged about five eggs each. By July 8 when headquarters were moved from the tip of Point Dall to Igiak Bay, most of the young of these Geese were a week or two old. On July 14, however, a newly hatched brood of four young was found and collected with the two adults. In all pairs of these Geese seen, it was very noticeable that the gander was much larger than the goose. It would seem that this difference in size between the sexes as well as that of age should be taken into account in studying the *canadensis* group.

The enemies these Geese have to contend with are numerous. Three species of Jaegers prey on their eggs, although probably the Geese suffer much less from these thieves than do the smaller species, who are less vigilant in protecting their nests. The large Glaucous Gull, however, is very destructive to the young. In travelling up the sloughs and rivers with our boat, we would often encounter family parties of these birds. Immediately the old birds took to flight, the large Gulls would appear,



and, given half an opportunity, kill the goslings. This was especially noticeable when, in trying to band the young, we would chase them ashore. Often after banding a brood, we would have to wage war on the Gulls to save the goslings from destruction. Snowy Owls, which were common nesters in this vicinity, also took their toll. One afternoon an hour or so after banding a brood of young Geese, Murie found two of them beside the nest of one of these Owls.

On July 30, we reached a small Eskimo village situated on the Kashunuk Slough about twenty-five miles inland from Hooper Bay. Here we organized a small Goose drive, as our time was getting short and we wished to band as many Geese as possible. The next day, taking along about twenty Eskimos, we ran up the slough a few miles to where a smaller river came into it. Here at the tip of this wide V of land, the natives set up a net in the shape of a pocket with the sides about twenty feet long. While this was being done, a dozen of the younger men started out to drive in the Geese. They left in pairs at about five minute intervals, one following the bank of the Kashunuk Slough, the other the bank of the tributary. In about half an hour all were out of sight. Almost two hours later we saw in the distance the line of returning natives. Evidently they had gone some distance along the sides of the V formed by the two rivers, and then cutting inland and forming a line across the mouth, had marched toward the net. When they were still four or five hundred yards off, we began to see the Geese walking along ahead of them, so at the orders of the older Eskimos who had stayed with us, we formed two human wings out from the sides of the net. Soon the Geese were near, and we could see stalking majestically in their midst a half-grown Little Brown Crane. He seemed to have no fear and was entirely unruffled by the excited behavior of the Geese. When the line of drivers had gotten within about a hundred yards the fun began. Geese were everywhere trying to break through the line, and often succeeding. If one got past it was waste of effort to chase him, as meanwhile a dozen would escape through the break left in the line. Even after the birds were inside the net, the excitement still continued, as the mesh was very large and by struggling a Goose could force its way through. This was soon remedied by spreading a piece of canvas around the net, but not before the calm and collected crane had twice gone through like a slippery eel. After the birds were securely penned, the natives took the adult Geese for food, according to our agreement with them; while the members of our party, each with an Eskimo assistant to hold the birds, commenced banding. One hundred and thirty-five half-grown Geese were banded, about three-fifths of which were Cackling, the remainder being Emperor Geese. The natives secured between thirty-five and forty adults. All these were examined, but no *hutchinsi* were found among them.

Dr. Nelson in his 'Report upon Natural History Collections made in Alaska' 1887, speaks of the first plumage of this Goose as follows:—"Head and neck almost uniform with the rest of the body and without any trace

of the white cheek-patches." A young male taken as a specimen in the above drive, and which has the primaries about two-thirds grown, has the head and neck black and the white cheek-patches as in the adult, although the latter are slightly speckled and lined with black. The under parts, however, are much grayer than in the adult, but the upper breast, just below the black neck, has the typical brownish tinge of *minima*. It may be that some of the so-called intermediates in color between *hutchinsi* and *minima* are young birds in their first fall and winter plumage.

Measurements of a pair of breeding *minima* with typical deep brownish breasts are as follows: ♂ culmen 33, wing 401, tarsus 72, middle toe with claw 64; ♀ culmen 31, wing 361, tarsus 62, middle toe with claw 61. These birds were taken with newly hatched young and weighed: ♂ 3 lbs. 12 oz., ♀ 2 lbs. 8 oz. A typical dark-breasted immature non-breeding ♀ taken May 18 weighed 3 lbs. 2 oz., and its measurements are as follows: culmen 27, wing 350, tarsus 61, middle toe with claw 61.

Weights of other Cackling Geese shot for food were, males 3 lbs. 6 oz. (im), 3 lbs. 8 oz., 3 lbs. 4 oz., 3 lbs. 12 oz., 4 lbs. 2 oz.; female 3 lbs. 2 oz.

**Branta nigricans.** BLACK BRANT.—The main flight of this Goose evidently passed farther inland than our camp at the tip of Point Dall. Probably in their migration they cut across the base of this Point. While a number of these birds were seen, they were not nearly as plentiful as we had been led to expect they would be. The first appeared on May 20. After that some were seen every day until May 29, when a little flight seemed to be on. The flocks did not follow the sea coast, but cut across the tundra almost anywhere, having no regular line of flight that we could see. They flew high and very steadily. No notes were heard. From May 30 to June 9 small flocks were seen nearly every day, either travelling or feeding in Hooper Bay. On the last day three were noticed, the last to be seen. Of the five specimens taken, all were adults, except one immature bird shot June 6.

Weights of four of these birds were as follows: Three adult birds 3 lbs. 4 oz., 3 lbs. 10 oz., 4 lbs. 14 oz.; and of an immature male 2 lbs. 14 oz.

**Phalacte canagica.** EMPEROR GOOSE.—The first Emperor Goose seen by our party was on May 15, when a single bird was noticed flying along the coast. Five days later two more appeared and from then on they became common. Up to June 5, the majority of these Geese seen seemed to be birds preparing to nest in the vicinity, as they were in pairs or small parties, flying low about the tundra. On the above date, however, quite a large flight of Emperors passed over high on their way to the north. The following day a few more flocks went by. No more of any consequence were noticed until June 10, when several bands were seen migrating through, and the next day there was again quite a flight. On June 18 another flight seemed to be starting, as three or four flocks were seen passing overhead. This last migration was at its height on the next day, June 19, when about a dozen flocks, varying from fifteen to forty, went by. During the next two days a few more flocks passed, but after June 23, none but local birds

were seen. As far as could be judged through powerful binoculars, these late migrating Geese were adults, and it may be that the birds nesting farther north do not leave their wintering grounds until much later than the more southern breeding birds.

These Geese lose very little time in starting to nest after their arrival on the breeding ground, as on May 27 a female was shot that already had her breast partly picked. The first eggs were not found, however, until June 2. Sets seemed to run between five and seven in number, but six was the highest found by our party. About Point Dall they seemed to prefer as nesting sites the inland ponds and marshes situated in the low rolling hills, rather than the marshy flats bordering the bay and sea. Nests were generally placed close to water, either near the bank of some pond, on an island, or on the top of a large tussock in some wet, marshy place. They were lined with moss, grass and down from the parent. The females sat very close, generally not flushing until one was within ten or fifteen feet. The surprising thing, however, was in not finding the gander in close attendance. At first it was thought that the male probably took little interest in the nest, but this was found not to be entirely correct. At one nest, situated on an island in a pond, what was presumably the gander was seen several times sneaking about several hundred yards away. In another case when a female was disturbed from her eggs, she was joined by two other Geese when she lit some way off. One of these, thought to be her mate, kept constantly with her, while the other stayed some little distance away. As there was another Emperor nest less than a quarter of a mile off, it was presumed that the odd bird was also a gander and mate to this other hen. As soon as the young are hatched, the male joins his mate, however, and helps take care of the goslings. In all broods seen about the sloughs and rivers later in the summer, two adult Geese were always present. One morning on visiting the nest on the island above referred to, the first thing that caught our eye was a newly hatched chick sitting on the edge of the nest beside its mother. As we drew closer the female flushed, and with her went the gander, who had evidently been crouched on the ground about ten feet away. All five eggs had hatched and the young were already dry. The goslings were surprisingly tame, making no attempt to leave the nest, although both old birds had lit in the lake about fifty yards away and the hen was calling loudly. After a few minutes they did crawl out, but to our surprise came to us as we stood photographing them, utterly ignoring the old Geese. Du Fresne, wishing to get photographs of the adults, took one of the young and placed it some distance from the nest as a decoy. The minute he backed away, however, it started in pursuit of him, so that finally he had to tether it by the foot to a bunch of grass. Meanwhile the other four seemed perfectly content to sit in my lap, where they were sheltered from the wind; and if I covered them with my hands, would snuggle down and give contented little chucking calls. We had these five for two days and they fed readily on finely cut grass and hard boiled egg. They became so that when the

cover of their coop was lifted, all would stretch up their heads and peep for food.

The following data on the incubation period were obtained: Nest found June 4 with five eggs (full set). On the morning of June 29, three eggs had hatched, one egg was infertile, and the other had a fully developed chick in it, but the yolk sack had not as yet been drawn into the body. One gosling escaped into the lake with the female, when she was disturbed, but in about ten minutes she brought it ashore and commenced to brood. Evidently when very young they cannot remain long in the water without getting chilled. So solicitous was she of this chick, that by sneaking quietly toward her, it was easily captured.

During the first half of July, broods of these Geese were seen commonly back of Igiak and Hooper Bay. When the young are first hatched, the old birds appear to take them to the rivers and sloughs up and down which they travel feeding on the banks. It was during this period that we noticed how the Glaucous Gulls persecuted them. Whenever a brood was encountered as we travelled the sloughs in our boat, the old Geese would fly off and the goslings would scatter. Immediately these big Gulls gathered, and as soon as a chance offered, would swoop down on a young one. Later when we attempted to band these Geese, this was a serious handicap, as necessarily broods became much scattered and were at the mercy of marauders. Under natural conditions many goslings must be destroyed, as often the old Geese were seen at some distance from their young; and wherever there was a brood, there was almost sure to be a Gull or two hanging about. When the young became partly grown and the adults are about to moult their primaries, the broods retire from the river banks into the tundra. During the latter part of July, very few Geese of any kind were seen as we travelled along the Kashunuk Slough. Just prior to this time the Geese gather in bands, which are generally a mixture of Emperors and Cacklers, the White-fronted Geese seeming to keep aloof from the two other species.

From what evidence we could gather, it would seem that the Emperor Goose never nests farther back than ten miles or so from the coast. As the majority of Eskimo villages in this region are situated near the coast, it is this species that suffers most in their Goose drives. Generally the natives go to the same spot each year for their drives, which are made about the end of the first week in August.

A young bird about two-thirds grown, taken on the second of August, shows no signs of the white head and neck, but has the feathers of these parts dark gray. In this stage the bill is black, iris brown, and legs and feet olive brown. An immature female shot May 30 has very worn plumage. The head and neck are white as in the adult, but there are black feathers scattered through the white of the cheeks; and in front of the eye there is a dusky spot about the size of a five cent piece, in which are mixed a few white feathers. The back is much duller than in the adult and the breast is a dirty yellowish gray. The coloring of the soft parts is the same as in

the adults, the iris being brown, legs orange, and bill in general bluish white.

So far as the writer knows, the only description of the downy young of this species is a very brief and general one by F. E. Blaauw (*Ibis*, 1916, p. 252) based on a chick hatched in his aviary. Therefore below is given a description of a gosling about thirty-six hours old in my collection. Names of the gray tints are according to Ridgway's 'Color Standards'.

Upper parts from mouse gray to deep mouse gray, slightly lighter on upper forehead, crown, occiput and cheeks; lower forehead at base of bill narrowly clear white. Nape and sides of neck noticeably lighter than back. Flanks and under side of tail deep mouse gray shading into the white of lower breast and abdomen. Throat and upper neck white. Lower neck and upper breast white with slight grayish tinge. Bill black with extreme tip of both mandibles white. Legs and feet olive.

The strong, rank odor of these Geese spoken of by other writers was not noticed among the birds we took. Many of them were eaten and not found at all unpalatable.

Weights of five males taken were 6 lbs. 12 oz., 5 lbs. 8 oz., 6 lbs. 2 oz., 5 lbs. 10 oz. and 6 lbs. 10 oz. Six females weighed 6 lbs. 10 oz., 6 lbs. 5 oz., 4 lbs. 10 oz. (im.), 5 lbs. 2 oz., 6 lbs. 14 oz. and 5 lbs. 3 oz. (im.). Two unsexed immature birds weighed 4 lbs. 13 oz. and 4 lbs. 14 oz.

**Olor columbianus.** WHISTLING SWAN.—The first birds seen appeared on May 8, a group of four passing overhead. Twelve were seen the next day, and two the day after. From then on, only an occasional straggler made its appearance. We did not get into the nesting grounds of this Swan until late in the summer, so very little was observed. It seems to prefer the interior of the tundra, not nesting within ten miles of the coast. On July 26 and 27, while travelling along the Kashunuk Slough in a motor scow, a few Swans were encountered. Several were seen that could not fly, besides a pair with young, one of the adults of which still had the use of its wings. On one of these days, encountering two flightless birds, we gave chase with the boat. After a few hundred yards the two separated, and the bird which we followed soon showed signs of distress, flopping over the water with its mouth open. A hundred yards or so more and it took to the bank, where Du Fresne soon ran it down. It was an adult, with no signs of the new primaries as yet showing. A band was placed on its leg and it was released.

(*To be concluded.*)