

NOTES ON AND LIST OF BIRDS AND EGGS COLLECTED IN ARCTIC
AMERICA, 1861-1866.

BY

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When recently requested by President Charles N. Bell, of Winnipeg, to write a paper on Arctic breeding birds, for publication by the Historical and Scientific Society of Manitoba, I thought of including therein a similar reference to the collections made in ornithology and oölogy by the northern officers of the company subsequent to the year 1859, when Mr. Robert Kennicott, an able, amiable, and prematurely cut-off American naturalist, and representative of the Smithsonian Institution at Washington, first appeared on the Mackenzie River. During his three years' sojourn in that quarter he managed to infuse into one and all with whom he had any intercourse more or less of his own ardent, zealous, and indefatigable spirit as a collector; but for want of space, time, and the requisite material I have had to abandon that idea, and must therefore confine myself to giving a résumé of what I was personally enabled to accomplish. I trust, however, that some day an abler hand will take the matter up, in its entirety, and publish a full account of the magnificent contributions to the natural history of the Dominion of Canada obtained by the exertions of Hudson Bay officers throughout the vast territories covered by the fur trade and commercial operations of their old company. Among those of their number who happened to be then, or about that time, stationed in the Mackenzie River district, and who thus rendered very essential service, may be mentioned Messrs. B. R. Ross, James Lockhart, Laurence Clarke, Wm. L. Hardisty, James McDougall, John Reid, C. P. Gaudet, Strachan Jones, J. S. Camsell, Murdo McLeod, James Sibbiston, A. McKenzie, Andrew Flett, W. J. McLean, William Brass and W. C. King. In this connection I would further add that, while the friendly and rather extensive correspondence carried on for years with many of the foregoing by the late eminent and much lamented Prof. Spencer F. Baird, of the Smithsonian, evinced his own deep love for science, it did much to intensify their interest in, and desire to meet more fully perhaps than was otherwise possible, the views and objects of that obliging and well-conducted Institution.

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The scope of country intended to be embraced within the above somewhat pretentious heading of "Arctic America" is bounded on the north by the Polar Sea to the eastern outlet of the Mackenzie River, on the east by the coast of Franklin Bay from Cape Bathurst to its depth in Langton Harbor, on the west by the Lower Mackenzie River, and on the south by the sixty-seventh parallel of north latitude to its intersection with longitude 124° W. It may, however, be mentioned that very few specimens indeed were gathered to the southward of $67^{\circ} 30'$ N. and to the westward of longitude 129° , except from the Lower Anderson to the Mackenzie.

The period during which the following collections and observations were made extended from the beginning of April, 1862, to the end of June, 1866. No account is, however, taken of a box of specimens obtained in the summer of 1861 and presented to the late Chief Trader Bernard R. Ross. The principal scene of investigation was Fort Anderson (latitude $68^{\circ} 30'$ N. and longitude 128° W. or thereabouts), established in 1861 for the Esquimau trade and abandoned in 1866. It was situated on the right bank of the Anderson River, first visited by me in 1857. This large stream, which disembogues itself into Liverpool Bay, has its sources in the Revd. Abbé Petitot's *Ti-Dégale* (Frost-hardened Mountain), lying at "some little distance" to the north of Great Bear Lake.

The tract of country in question may be briefly described as mainly flat, but intersected by several hilly ridges or heights of land, having the principal portion of its surface more or less densely covered with forest and diversified by gentle eminences, marshy spaces, and spots of peaty soil, many streams and numerous lakes and sheets of water, greatly varying in size. Beyond the sixty-eighth degree of latitude, however, trees become sparse and stunted, except along the ravines and banks of the larger rivers, where the fringe of timber soon rapidly narrows and disappears altogether in about 69° N. Thence to the coast and from the border of the woods to the southeast, begin those vast steppes, or undulating plains, which extend for hundreds of miles and are known as the "Barren Grounds." Fewer lakes and streams are there met with, while much of the country on the west side of the Anderson, near its outlet to the Mackenzie, is said to be devoid of wood, low, and comparatively more marshy than elsewhere; and we have then the shores and smaller islands and islets of Esquimaux Lake and the adjacent Polar Sea to finish this rather meager sketch. But, for all that, I do not believe that a field of equal extent, better adapted for the breeding purposes of so interesting and important a variety, from the Yellow Warbler to the Golden Eagle, among the land, to the Least Sandpiper and the Trumpeter Swan, among the water birds of North America, exists in any other part of the northwest territories of Canada.

If the scene of operations was rich and varied, it must be admitted

that the position held during those years and the opportunities thereby afforded for making a splendid collection were exceptionally good yet, owing to ignorance and a want of interest displayed, both by Indians and Esquimaux in the beginning, one or two rather unfavorable seasons, heavy annual losses of specimens by accidents and neglect, the almost total destruction by animals of our last spring's very small list, the death by epidemic, measles, and scarlatina of the majority of our best and most experienced native collectors, in the autumn and early winter months of 1865, and the abandonment of Fort Anderson in the summer of 1866, both of which last-mentioned adverse factors prevented me from spending the nesting season of that and the succeeding year, as I had intended, on the shores and in the neighborhood of Esquimaux Lake and Liverpool Bay, very much still remains to be done by future explorers, even in this comparatively small section of the Great Mackenzie Basin, before its fauna is satisfactorily, far less exhaustively, ascertained, and the result duly communicated to the scientific world.

It will be observed from the list which follows that comparatively few of the many other species of birds which indubitably occur within the aforesaid defined boundaries, and whose eggs were not discovered or received by us, are noted therein. The notes themselves are chiefly an abridgment of the relative text, which had been condensed or quoted from the copious memoranda furnished along with the specimens, as contained in that valuable and most interesting "History of North American Birds, by Messrs. S. F. Baird, T. M. Brewer, and R. Ridgway." The three volumes of the Land Birds were published in 1874, and the two of Water Birds in 1884, both by Little, Brown & Co., of Boston, Massachusetts. For the sake of conformity, however, to the canons of nomenclature, since adopted by the American Ornithologists' Union, their recently revised and abridged Check List will be closely adhered to in the following classification.

WATER BIRDS.

2. *Colymbus holboëllii* (Reinhardt). Holboëll's Grebe.

My notes record but two nests of this grebe, one contained four and the other five eggs, and both were found at a distance of some 40 or 50 miles south of Fort Anderson.

3. *Colymbus auritus* Linnæus. Horned Grebe.

A skin or two, but no eggs, were secured near Lockhart River in June, 1861, and forwarded to the late Mr. B. R. Ross, while a female parent with five eggs was taken on a nest on the edge of a small lake about 60 miles southeast of the post in June, 1866, but they were afterwards lost in the manner already alluded to. I should say that grebes were far from numerous, even in the southern portion of the Anderson country.

7. *Urinator imber* (Gunn.). Loon.

The nest of this diver is usually found in the water on the edge of a small lake, and is but a mere depression in the center of a tolerably large mass of turf, or accumulated decayed vegetable matter, partially secured from observation by grass and reeds growing thereon, or in its vicinity. In no instance were more than two eggs taken in any of the nine recorded nests.

8. *Urinator adamsii* (Gray). Yellow-billed Loon.

During the period of reproduction this loon abounds in considerable numbers in Franklin and Liverpool bays, where several examples were shot. It is also sometimes met with on the larger lakes of the interior. Although most anxious to possess eggs of this species, we all failed to discover even one well-authenticated nest, while it is possible that the two *adamsii* eggs referred to on page 452, of vol. II, of the aforesaid Water Birds of North America, may have belonged to the Great Northern Diver. An Esquimaux of our party observed a male *Somateria v-nigra* struck and killed on the wing by a bird of this species.

9. *Urinator arcticus* (Linn.). Black-throated Loon.

This species undoubtedly breeds within the Arctic circle; but we must have secured very few specimens, as I only know of one well-authenticated set of eggs, obtained from Fort Anderson in 1865, and which are now in the oölogical collection of the U. S. National Museum in Washington.

10. *Urinator pacificus* (Lawrence). Pacific Loon.

This is the most abundant of all the divers in the region under investigation. Nests were discovered in the wooded country, in the Barren Grounds, and on the shores and islands of the Arctic coast. In situation and composition they resemble those of *U. imber*. In all about one hundred and sixty-five nests, most of which contained two eggs, were secured in course of the five seasons, from 1862 to 1866, inclusive. Some eggs of this species, as well as of many other birds, also got broken on their way to the post and in course of emptying and handling them there. I may here remark that although the several members of the family *Urinatoridæ* occasionally give utterance to rather discordant sounds while in the water, the Pacific Loon is noted for its peculiarly loud, weird, and prolonged shrill scream during the season of nidification.

11. *Urinator lumme* (Gunn.). Red-throated Loon.

Although its yearly range in summer is equal to that of *U. pacificus*, it is the least numerous of the genus, and but some forty identified nests were found within the same period of time, and in the stated localities. Most of these also had two eggs, the maximum number laid by all loons according to native report and personal observation.

36. *Stercorarius pomarinus* (Temminck). Pomarine Jaeger.

In June, 1863, an Esquimaux brought in one jaeger, and in June, 1864, another man traded a male and female specimen, which he killed near the outlet of Anderson River. On 11th July, 1865, we shot a male-bird in Franklin Bay. The first-mentioned is inadvertently stated in the aforesaid History of North American Birds to be the only example of the species procured, although the receipt of all of them was duly acknowledged by the Smithsonian Institution. We did not have the good fortune to become acquainted with its eggs.

37. *Stercorarius parasiticus* (Linn.). Parasitic Jaeger.

A more numerous bird than the former, especially in the Barren Grounds, where several nests were annually discovered on our collecting expeditions from Fort Anderson to Franklin Bay (1862 and 1865). A few specimens were also obtained from the Esquimaux of the Lower Anderson River. There is, of course, no darkness for several months in summer within the before defined Anderson section of the Arctic regions, while in June the sun at midnight is several degrees above the horizon. During the period, however, answering to the night in southern latitudes, we often observed in the "Barrens" and on the sea coast as many as twenty or thirty birds of the genus *Stercorarius* sitting or standing on the ground, each bird at the distance of a few yards from its fellow. They probably reposed at such times, as they never moved except when closely approached, while no eggs were ever discovered in the vicinity of these resting places. During the day, also, two or more birds were frequently noticed quietly reposing or moving very slowly along the ground, and this, too, where no nest actually existed.

38. *Stercorarius longicaudus* (Vieillot). Long-tailed Jaeger.

This handsome jaeger is quite abundant along the Anderson, in the "Barrens," and also on the Arctic coast. It lays two eggs in a depression in the soil, scantily lined with withered leaves and grasses, etc., and as their eggs greatly resemble their surroundings the nest is frequently very difficult to discover. The parent birds, by angry screams and hostile demonstrations, invariably resent the presence of intruders, and in more than one instance they became so savage in their attacks, especially the female, that she had to be shot at once in order to prevent actual injury. Over thirty nests were taken, or double as many as that of the foregoing. The several species of jaeger doubtless destroy a large number of other birds' eggs annually.

42. *Larus glaucus* Brünn. Glaucous Gull.

Altogether some twenty nests were gathered by our collecting parties, chiefly on sandy islets in the bays of Franklin and Liverpool, and a few of these were also found on islands on the Lower Anderson; but

the bird itself was observed in various localities. Fifteen of the nests contained two eggs each, and but five had as many as three. The nest was usually a shallow depression in the beach, while in one of them we discovered an egg of the Black Brant which was being incubated by a bird of this species. The egg of the goose was in a more embryo-developed stage than those of the gull, which we always considered as about the bravest of the *Laridæ* in defense of its eggs and young.

43. *Larus leucopterus* Faber. (?) Iceland Gull.

This species was not seen, or at all events no specimens found their way to Fort Anderson from Liverpool Bay; but several sets of the supposed eggs were procured on the shores of Franklin Bay early in July, 1863, and again in July, 1865.

51a. *Larus argentatus smithsonianus* Cones. American Herring Gull.

This gull is common on the Arctic coast, as well as along the Wilmot-Horton River (Barren Grounds), and a number of nests were discovered and the eggs secured in the referred-to localities, and also from islands on the Lower Anderson.

53. *Larus californicus* Lawrence California Gull.

Quite a number of specimens with eggs were received from the Lower Anderson Esquimaux, and one or two nests also were found on the margin of small lakes in the vicinity of the fort.

55. *Larus brachyrhynchus* Richardson. Short-billed Gull.

More numerous and widely diffused than the three preceding species. Its nest is usually a small cavity in the sand by the side of a stream or sheet of water; but it also frequently builds on a stump or tree, and in such cases dry twigs, hay, and mosses are used in its construction. A good many sets of eggs and birds were collected at Fort Anderson. The parents do their utmost to drive away intruders. On one occasion in the "Barrens" we wounded a male which a female *Stereorarius parasiticus* set upon as he fell into the water, evidently with no friendly intentions; but another shot killed both.

59. *Larus franklinii* Swainson and Richardson. Franklin's Gull.

Although no example specimen was secured, yet I strongly incline to think that some gulls of this species breed within the before defined section of the Arctic regions.

60. *Larus philadelphia* (Ord). Bonaparte's Gull.

Thirty seven nests are recorded as having been taken with eggs in them, between 10th June and 10th July, in the wooded country in the neighborhood of Fort Anderson and on Lower Anderson River they

were all built on trees at various heights (from 4 to 15 and even 20 feet) from the ground, and, with one exception, which was composed of down and velvety leaves held together by some stringy turf, they were made of small sticks and twigs lined with hay and mosses, etc. The parents always fly about in close proximity to the nest and scream vehemently when explorers, in the interests of science, are obliged to deprive them of their eggs or young, and not infrequently shoot one of them. They seldom lay more than three eggs.

62. *Xema sabinii* (Sabine). Sabine's Gull.

Quite a large number of nests were found on the shores of Franklin Bay, and a few eggs were also received from the Esquimaux of Liverpool Bay. Several specimens of this beautiful gull were shot at the former point. On the 1st July, 1864, we knocked over three out of a flock of sixty which came circling about our encampment; they then gracefully retired to and alighted in a pool of sea-water at a safe distance. One of the three having been merely stunned soon recovered, and after two ineffectual attempts made by an Indian to choke her, she again revived, and I set her at liberty. She flew away slowly to her friends, who received her no doubt with demonstrations of great joy, judging from the noise they made. After a few minutes they all took their departure, probably to their breeding grounds.

70. *Sterna hirundo* Linnaeus. Common Tern.

It breeds extensively on the shores of the Arctic Sea, as well as on islets in many of the inland lakes of the forest and "Barrens;" but although its eggs were not *desiderata*, and we did all we could to discourage their gathering, yet a large number were received for shipment to Washington.

71. *Sterna paradisea* Brünn. Arctic Tern.

This tern is equally common with the foregoing, and we might easily have made a considerable collection of eggs from various localities. Neither species approves of a close proximity of man to their nests.

129. *Merganser americanus* (Cassin). American Merganser.

I am strongly of the belief that this species breeds in small numbers in the country to the south of Fort Anderson, and that we received the eggs of one or two nests thereof, which were afterwards lost.

130. *Merganser serrator* (Linn.). Red-breasted Merganser.

Several nests of this not particularly numerous merganser were obtained in the vicinity of Fort Anderson, and also in the wooded parts on both sides of the river, north and south of the post. One was found on the border of the "Barrens" to the east under a fallen tree, close to

a small lake. It was a scooped-out hole lined with feathers and down and contained six eggs, with their contents in a partially embryo-formed condition; the female was snared on her nest. Ten was the maximum number of eggs found among the obtained specimens.

132. *Anas boschas* Linnaeus. Mallard.

This abundant and widely distributed duck is to be met with almost throughout the entire wooded section of country under consideration. Examples were received from various points. It lays from six to eight eggs in a nest composed of down and feathers, placed in a hole or depression in the ground contiguous to small clumps or tufts of willow, etc

133. *Anas obscura* Gmelin. Black Duck.

Not uncommon on the Anderson River; but although several birds were shot, we failed to secure even one well authenticated nest of its eggs.

135. *Anas strepera* Linn. Gadwall.

Although we obtained no specimens of this duck or its eggs, we had reason to suppose that it breeds annually in that quarter.

137. *Anas americana* Gmel. Baldpate.

Numbers of nests were discovered in different places in the vicinity of Anderson River, and a few as well near Swan River, one of the principal affluents of the Wilmot-Horton Barren Grounds.

139. *Anas carolinensis* Gmel. Green-winged Teal.

This we found to be one of the rarest among our breeding ducks, and for that reason but one nest was secured near Fort Anderson. Like those of most of the teals, it was composed of feathers and down placed in a depression on a dry piece of ground close to a clump of willows.

142. *Spatula clypeata* (Linn.). Shoveler.

Very rare, and a couple only of specimens were collected at Fort Anderson during the five or six seasons we resided there.

143. *Dafila acuta* (Linn.). Pintail.

This and (this especially) the Long tailed Duck, I think, are the most numerous of the *genera* which annually resort to the Anderson and the Arctic coast, and they are also among the first to arrive in the spring. They were always abundant in the "Barrens." The nest was usually a small cavity or depression in the ground, lined with down, withered leaves, and a few feathers, and it lays from six to eight eggs. Both species desert their nests almost immediately after the young are

hatched, and take to the water with them. From frequent observation I feel convinced that they almost invariably select land locked sheets of water for the purpose of rearing their young, while most of the other species of ducks give the preference to running streams.

147. *Aythya vallisneria* (Wilson). Canvas-back.

A few sets of eggs of this famous duck were found in the vicinity of Fort Anderson, where it is tolerably abundant during the season of nidification. The American Scaup Duck, *A. marila nearctica* Steju., is also believed to be a summer resident, but I do not think I ever found any of its eggs.

149. *Aythya affinis* (Eyt.). Lesser Scaup Duck.

Fairly numerous even to the very edge of the wooded country on the east side of the Anderson River. Over a dozen nests were secured—and they were usually found in the midst of a swamp—a mere hole or depression in the centre of a tuft of turf or tussock of grass, lined with more or less down, feathers, and hay. Nine was the general number of eggs in a nest, though a few contained no more than six or seven. *A. collaris* (Donovan) probably breeds in the same quarter.

152. *Glaucionetta islandica* (Gmel.). Barrow's Golden-eye.

Although an individual bird of this species was shot by Mr. Murdo MacLeod in the vicinity of Fort Anderson, on 29th June, 1863, and a male example obtained there on the 14th June, 1864, yet our best efforts failed to discover a single nest in that or any other quarter, and I think it may be classed among the rarest of ducks visiting that region. We never observed any specimens of the *G. clangula americana* (Bonap.), nor of the Buffle-head, *Charitonetta albeola* (Linn.), in the Anderson country.

154. *Clangula hyemalis* (Linn.). Old-squaw.

The Long-tailed Duck breeds in great numbers in the neighborhood of Fort Anderson, along the Anderson River, on the Barren Grounds, and on the shores of the Arctic Sea. Considerably over one hundred nests were taken, and the eggs varied from five to seven, the latter being the maximum number recorded in any one instance. In its make the nest is generally very similar to that of *Dafila acuta*. From personal observation, also, I have come to the conclusion that the usual quantity of down necessary for a duck's nest is seldom met with before a full set of eggs has been deposited, and that the process of lining with down, which is plucked off from the body of the female, goes on simultaneously with their laying. Thousands of "Old Squaws" were seen apparently feeding and otherwise disporting themselves in the waters of Franklin Bay. If present, it is rather surprising that we never came across a duck of the Harlequin species—*Histrionicus histrionicus*.

161. *Somateria v-nigra* Gray. Pacific Eider.

This interesting eider breeds in immense numbers on the shores of Franklin Bay; it is also very abundant on the coast and islands of Liverpool Bay. The nest is usually a shallow cavity in the ground, more or less plentifully lined with down. The eggs are generally five, and but rarely six and seven in number, of a pale sea-green color, "with a tinge of olive." We found some nests on a sloping bank at a distance of three hundred or more feet from the sea. Others were also on the main land, but the bulk of those secured by us were obtained from sandy islets in the bays. Over one thousand eggs of the *S. v-nigra*, I think first made known by us, were forwarded to Washington. The male bird is very wild and difficult of approach, especially after being once fired at. On one occasion we discovered a nest containing four eggs from observing a white owl engaged in eating them. Female birds appeared to be always largely in excess of males in the bay.

162. *Somateria spectabilis* (Linn.). King Eider.

Tolerably numerous in Franklin Bay, where an aggregate of some two hundred eggs were secured on the several summer (1862 to 1865) visits paid to that quarter. The nest is similar to that of the above eider, and when not disturbed the female usually lays from four to six eggs. In color they are generally of a light shade of olive gray, and some are of a grayish green. In addition to the eggs above mentioned the contents of about twenty nests were also received from the Esquimaux of Liverpool Bay. A few birds occasionally breed in close proximity to *S. v-nigra*, and the male is nearly as wary in keeping beyond gunshot.

163. *Oidemia americana* Sw. and Rich.. American Scoter.

This duck undoubtedly breeds in the Anderson River country, although we never succeeded in obtaining any authenticated specimens. There are also some other breeding water birds whose eggs have no doubt eluded discovery.

165. *Oidemia deglandi* Bonaparte. White-winged Scoter.

The Velvet Duck breeds in large numbers throughout the region under review, as several nests were found in the "Barrens," some near the Fort, a few on the Lower Anderson and in other parts of the wooded sections; these were always depressions in the ground, lined with down, feathers, and dry grasses, and placed contiguous to ponds or sheets of fresh water, frequently amid clumps of small spruce or dwarf willow, and fairly well concealed from view. The number of eggs found in a nest varied between five and eight.

166. *Oidemia perspicillata* (Linn). Surf Scoter.

The remarks made under *O. deglandi* happen to be, in almost every respect, equally applicable to the present species, the only difference noted being that generally less hay and feathers was observed in the composition of its nest, while only one contained as many as eight eggs, the usual number being from five to seven. Both Scoters were very abundant on the seacoast, especially the last mentioned.

169. *Chen hyperborea* (Pallas). Lesser Snow Goose.

The Esquimaux assured us that large numbers of "White Wavies" annually breed on the shores and islands of Esquimaux Lake and Liverpool Bay, but, strange to say, we never observed any in the Barren Grounds proper or on the shores of Franklin Bay. The Esquimaux brought in to Fort Anderson about one hundred eggs, which they claimed to have discovered among the marshy flats and sandy islets on the coast of the former, as well as from similar localities on and in the vicinity of the lake of that (Esquimaux) name.

169a. *Chen hyperborea nivalis* (Forster). Greater Snow Goose.

The foregoing remarks are also applicable to this goose, and, no doubt owing to both species having until lately been considered as mere varieties, there has been some mixing up of their eggs, a question which future explorations will doubtless solve. It is, however, believed that here, as well as on Lake Athabasca, the former precede the latter by some days in their arrival in spring. I have always regretted that I was unable to carry out my intention of devoting at least two seasons to a personal exploration of the breeding grounds of this and many other birds which resort to the so-called "Esquimaux Lake" and the shores of Liverpool Bay.

170. *Chen rossii* (Baird). Ross's Snow Goose.

A male bird of this species was shot at Fort Anderson on 25th May, 1865, where it is by far the least abundant of the genus during the spring migration. The Esquimaux assured us that it did not breed in Liverpool Bay, and it may therefore do so, along with the great bulk of the two larger species, on the extensive islands to the northwest of the American continent. At Fort Chipewyan, Athabasca, however, it is the last of the geese to arrive in spring, but among the first to return in the autumn.

171a. *Anser albifrons gambeli* (Hartlaub). American White-fronted Goose.

A considerable number of nests of this "Gray Wavy" was discovered in the vicinity of fresh-water lakes in timber tracts, as well as along the Lower Anderson River to the sea. Some were taken on the Arctic coast, and several also on islands and islets in Franklin Bay. In all

about one hundred nests were secured. The nest, which was always a mere shallow cavity in the ground, in every observed and reported instance had more or less of a lining of hay, feathers, and down, while the maximum number of eggs in no case exceeded seven. On 5th July, 1864, on our return trip from Franklin Bay, we observed thirty molting ganders of this species on a small lake in the Barrens. Our party divided, and by loud shouting and throwing stones at them they were driven to land, where twenty-seven of them were run down and captured. Their flesh proved excellent eating; it is seldom, indeed, that I have come across a Gray Wavy that was not in good condition in the far North.

172. *Branta canadensis* (Linn.). Canada Goose.

This well-known goose breeds throughout the entire wooded region of the Mackenzie Basin. Nests were discovered in the vicinity of Fort Anderson and to the borders of the forest on the east and west sides of the river of that name, but none were met with in the Barrens proper, nor on the Arctic Coast. Several deserted hawks' nests on trees were found occupied by incubating female birds of this species. We forwarded one hundred and seventy eggs of *B. canadensis* to the Smithsonian.

172a. *Branta canadensis hutchinsii* (Sw. and Rich.). Hutchins's Goose.

A large number (fifty) of nests of the smaller Canada Goose was found on the Lower Anderson, as well as on the shores and islands of the Arctic Sea. All but one were placed on the earth, and, like that of the preceding species, it was composed of hay, feathers, and down, while six was the usual number of eggs. The exceptional case was a female parent shot while sitting on four eggs in a deserted crow's or hawk's nest built on the fork of a pine tree at a height of about 9 feet. At the time, the ground in the vicinity thereof was covered with snow and water, and this may have had something to do with her nesting in so unusual a place.

172b. *Branta canadensis occidentalis* (Baird). White-cheeked Goose.

If no eggs were taken, it is almost certain that this large Canada Goose is to be met with occasionally at least, if not annually, on the Anderson, as we had methinks more than one undoubted skin or part thereof brought in during our residence there.

174. *Branta nigricans* (Lawrence). Black Brant.

This goose is exceedingly abundant on the Arctic coast of Liverpool Bay, but it is comparatively rare in Franklin Bay. Large numbers of eggs were obtained by the Esquimaux in the first mentioned, but hardly any in the latter locality. We never, however, observed any

of those birds passing the post on their usual spring and autumn migrations. Six hundred and fifty eggs were packed up for shipment from Fort Anderson.

180. *Olor columbianus* (Ord). Whistling Swan.

The maximum number of eggs taken in the twenty nests of this swan, which I find recorded, was five, while the nest itself was always placed on the ground, and several were also found on the coast and islands of Liverpool and Franklin Bays in the Arctic Ocean.

181. *Olor buccinator* (Richardson). Trumpeter Swan.

Several nests of this species were met with in the Barren Grounds, on islands in Franklin Bay, and one containing six eggs was situated near the beach on a sloping knoll. It was composed of a quantity of hay, down, and feathers intermixed, and this was the general mode of structure of the nests of both swans. It usually lays from four to six eggs, judging from the noted contents of a received total of twenty-four nests.

204. *Grus americana* (Linnaeus). Whooping Crane.

We never succeeded in finding a nest of this crane, which undoubtedly breeds in Arctic America as well as in the country to the southward, as a few flocks were observed flying past Fort Anderson both in spring and autumn.

205. *Grus canadensis* (Linn.). Little Brown Crane.

A skin was obtained from an Esquimau of the Lower Anderson in the autumn of 1863, and an egg was found in a nest in Franklin Bay in June, 1864. A second was discovered the following season on an island in Liverpool Bay, while the eggs (two each) and parents of two other nests, received from the Lower Anderson in the spring of 1866, were afterwards among those referred to as having been destroyed by animals. The nest is usually but a mere cavity in the sandy soil, thickly lined with dry grasses, etc.

222. *Crymophilus fulicarius* (Linn.). Red Phalarope.

This bird is fairly abundant on the shores of Franklin Bay, where nests were obtained amid marshy flats in the first week in July, 1864, and again in July, 1865.

223. *Phalaropus lobatus* (Linn.). Northern Phalarope.

Occurs in great abundance during the breeding season in the wooded country and in the Barren Grounds right to the coast, where it is, however, not numerous. The nest, like that of the Red Phalarope, is a slight depression in the ground, lined with a few dry leaves and grasses, and is almost invariably situated on the margin of small pools

or sheets of water. Upwards of seventy nests were secured, the number of eggs being always four. Although the parent usually left the nest, both birds would sometimes exhibit great uneasiness and utter loud cries of distress on the approach of man.

230. *Gallinago delicata* (Ord). Wilson's Snipe.

Not particularly numerous in the Anderson country, as we found comparatively few nests. I may here remark that the nests of all the snipes and sandpipers are much alike in composition, number of eggs, and situation.

232. *Macrorhampus scolopaceus* (Say). Long-billed Dowitcher.

The few nests of this species as recorded were taken between the 21st of June and the 1st of July, the eggs were always four in number, but it is not a very abundant bird in the Anderson section of the Polar regions. *M. griseus* (Gmel.) probably breeds in the same quarter.

233. *Micropalama himantopus* (Bonap.). Stilt Sandpiper.

The Stilt Sandpiper was fairly abundant on the shores of Franklin Bay, where a number of nests with eggs and young were discovered. It is, however, very rare in the interior, only one nest having been taken at Rendezvous Lake on the borders of the wooded country east of Fort Anderson. On one occasion we could not help admiring the courage and ingenuity displayed by both parents in defense of their young, which resulted in saving two of the latter from capture.

239. *Tringa maculata* Vieill. Pectoral Sandpiper.

We failed to discover any nests of this rather rare species. A few birds were seen flying past the Fort, and one or two were shot.

240. *Tringa fuscicollis* Vieill. White-rumped Sandpiper.

Several nests of this sandpiper were found on or near the Arctic coast of Franklin Bay. One of these taken July 3 contained four eggs with very large embryos. Another discovered on the following day held but three eggs. A third found in the Barren Grounds on 29th June was, like the rest, a shallow cavity in the ground, lined with a few decayed leaves, containing four eggs, also having very large embryos. A fourth, obtained on the banks of a small river, held four eggs whose contents were, however, in a far less developed condition than the others.

241. *Tringa bairdii* (Coues). Baird's Sandpiper.

On 24th June, 1864, a nest containing four eggs was found in the Barren Grounds, in a swampy tract between two small lakes, and was composed of a few decayed leaves placed in a small cavity or depression in the ground, shaded by a tuft of grass. The female bird glided

away from the nest on being approached, passing closely by me, and then fluttered along drooping her wings as if wounded, endeavoring thus to lead me away therefrom. It is very uncommon in any northern quarter through which we passed, although nests were subsequently discovered in the same as well as in other localities.

242. *Tringa minutilla* Vieill. Least Sandpiper.

This species was found breeding abundantly at Fort Anderson, on the borders of as well as in the Barren Grounds, and on and near the Arctic coast. Upwards of twenty nests were secured, and in all respects the latter were similar to those already described under this genus.

246. *Ereunetes pusillus* (Linn.). Semipalmated Sandpiper.

Fairly abundant in the Barren Grounds, but more so on the shores of Franklin Bay, where a number of specimens with eggs were secured. The female when disturbed frequently glides from the nest, pretending to be disabled and thereby endeavors to draw away intruders. Occasionally the nests are hidden by tufts of grass. In reference to one of these, procured on 30th June, 1865, between two small brackish lakes near the seashore, it may be mentioned that one of our party, a French Canadian servant, once heard the female parent utter a shrill note of alarm as she flew away when he approached her nest. After searching about for a few minutes he failed to find the eggs, and he then hid himself in order to watch where she would alight on her return. In a short time she came back accompanied by three companions, all of which flew and moved about, but not discovering anything they seemed to hold a brief consultation, after which they separated, the female to her eggs. Another search failed to discover the nest, and the female returned again with the same birds, who appeared to be in a state of great excitement, judging from the chattering they kept up. After a little while they again separated, when the nest was found and the parent shot. The report of the gun brought the others once more to the spot, but they soon beat a hasty retreat. The nest was a mere depression in the midst of a tussock of hay, and lined with a few withered leaves and grasses.

248. *Calidris arenaria* (Linn.). Sanderling.

On 29th June, 1863, we discovered a nest of this species, "the only one at that time known to naturalists," on the Barren Grounds about 10 miles west of Franklin Bay. The nest was composed of withered hay and leaves placed in a small cavity or depression in the ground, and it contained four eggs, which were quite fresh. The female was snared. It is a very rare bird in that quarter, and we never afterwards succeeded in finding another nest. "The eggs measure 1.44 inches by 0.95 to 0.99 in breadth, and their ground color is a brownish olive,

marked with faint spots and small blotches of bi[s]tre. These markings are very generally diffused, but are a little more numerous about the larger ends. They are of an oblong-pyriform shape."

251. *Limosa hæmastica* (Linn.). Hudsonian Godwit.

Not very common, although several nests were taken near the post and on the Lower Anderson River. The nests were all mere depressions, or small holes scooped in the earth, thinly lined with decayed leaves, and in almost every instance they contained four eggs. "Three of the eggs received from the Anderson are in the Smithsonian collection. In two of these the ground is of a deep raw-umber color, or an olivaceous drab. There are no well-defined spots, but the apex of the larger end is deeply stained with a dark burnt-umber color. A few very indistinct spots of a paler shade of this tint are visible over the general surface of the eggs. The other egg has a ground color of a paler umber-drab, and the markings are quite distinct. These are small irregular blotches, longitudinal in their direction, and of a deep burnt-umber tint. The apex of the larger end is covered by a broad patch, in which all the markings of a very dark umber, almost black, run into each other. These eggs are pyriform in shape, and measure 2.15 by 1.41, 2.12 by 1.39, and 2.22 by 1.40 inches."

255. *Totanus flavipes* (Gmel.). Yellow-legs.

Probably the most abundant and certainly the noisiest of all the waders met with. Nests were found at Fort Anderson, on the Lower Anderson, in the wooded country to and along the rivers which flow through the Barren Grounds. In many instances the male bird was seen perching on trees in the vicinity, but when young were present both parents were particularly noisy, and did all that was possible to attract away intruders, while the former soon learned to run and screen themselves from view in the grass. Over thirty nest entries are recorded, while it is among the earliest of the waders which arrive and breed in the region under review.

262. *Tryngites subruficollis* (Vieillot). Buff-breasted Sandpiper.

This species is common in the Barren Grounds east of Horton River and on the Arctic coast. Between the 26th of June and the 9th of July upwards of twenty sets of eggs were secured, and there were four in every nest, which was a mere depression in the soil, scantily lined with a few withered leaves and dried grasses. When the nest was approached the female parent usually made a low flight to a short distance.

263. *Actitis macularia* (Linn.). Spotted Sandpiper.

Not being *desiderata*, comparatively few eggs were collected, although the bird itself is numerous along the Anderson and Lockhart Rivers, and in many other parts within the defined boundaries. It was not, however, observed by us on the shores of the Arctic Sea.

265. *Numenius hudsonicus* Latham. Hudsonian Curlew.

We did not encounter this curlew on our several eastern journeys to and from, nor on the coast of Franklin Bay; but it is by no means very rare in the "Barrens" to the west of the Lower Anderson, where the Esquimaux discovered some thirteen well identified nests with eggs.

266. *Numenius borealis* (Forster). Esquimaux Curlew.

This species breeds abundantly in the Barren Grounds to the eastward of Fort Anderson—and, except when otherwise described, these are the "Barrens," which are invariably referred to, right up to the Polar Sea. The nests in every observed instance were mere holes or depressions in the ground. Great difficulty was frequently experienced in finding them, as the eggs closely resembled the surrounding vegetation, and the mother, as a rule, glided off while we were still at some distance. Thirty sets of eggs were gathered, including several from the aforesaid Lower Anderson "Barrens." Among the many joyous bird notes which greet one while crossing these grounds, especially on a fine sunshiny morning, none seemed more familiar or pleasanter than the prolonged mellow whistle of the Esquimaux Curlew.

270. *Charadrius squatarola* (Linn.). Black-bellied Plover.

Our first introduction to this handsome and somewhat rare Arctic plover was on Island Point in Franklin Bay, on 4th July, 1864. The nest contained four eggs and was composed of a small quantity of withered grasses placed in a depression on the side or face of a very gentle eminence. Both parents were seen and the male shot. We at first mistook them for the Golden Plover, which they so much resemble, but their note and a close comparison of skins soon undeceived us. On the following day another nest with four eggs was discovered, and a third also was met with, over which a snare was set; but, unfortunately, while we slept, a Snowy Owl (*Nyctea nyctea* Linn.) devoured the captured female, together with her four eggs. In 1865, seven nests were gathered by our party in the same quarter. It is probable that both parents relieve each other during the process of incubation, as a male bird was snared on one of the nests. We never received a single skin or egg of this, but plenty of the Golden Plover, from the Esquimaux of the Lower Anderson or from the shores of Liverpool Bay.

272. *Charadrius dominicus* Müll. American Golden Plover.

This beautiful species is very numerous in the Barren Grounds, from the outskirts of the forest to the shores of the Polar Sea. The nests were precisely similar to those of *C. squatarola*. They were also as difficult to detect, and for the same reason, a harmonizing resemblance of the egg markings to the surrounding soil and a timeous departure of the female bird from her nest. In a very few instances, where she happened to be surprised by a close approach, she would pretend lameness and

flutter away from our very feet. On one occasion our party spent half an hour in a close but fruitless search, during which the female resorted to various maneuvers to hide the nest; but on our withdrawal to a short distance she at last revealed it by settling down upon her eggs. I find one hundred and seventy nests recorded among my notes. Except when there was reason to believe that the full number had not been deposited four eggs were always met with. In one instance, however, there was as many as five, and in another but one, the contents of which were found in a well-developed condition. Foxes also destroy many eggs and young of this and other species during the season of nidification. The frequently varying but sweetly clear and melodious notes of this Plover are almost constantly heard whilst traversing their usual breeding grounds.

274. *Ægialitis semipalmata* Bonaparte. Semipalmated Plover.

This bird is quite common on the before defined coast of the Arctic Ocean and along the Anderson and Lockhart Rivers, as well as in the country between Fort Anderson and Fort Good Hope, Maekenzie River. Most of the twenty nests taken contained four eggs, and several but two or three. When closely approached, the female usually glided from her nest and ran a short distance before flying, occasionally drooping her wings and pretending lameness. The nest is a mere cavity in the sand lined with a few withered leaves and grasses.

283. *Arenaria interpres* (Linn.). Turnstone.

In June, 1864, a dozen birds were observed at Fort Anderson, and one was shot. This species breeds on the shores of Liverpool and Franklin Bays, and on the Lower Anderson River. Several nests were secured in the latter region; but none were met with in the Barren Grounds. Four was the maximum number of eggs in a nest, which was similar to that of other waders.

LAND BIRDS.

298. *Dendragapus canadensis* (Linn.). Canada Grouse.

Although no nest was discovered, this grouse has been frequently observed in the forest country south of Fort Anderson.

301. *Lagopus lagopus* (Linn.). Willow Ptarmigan.

This species is exceedingly abundant in the neighborhood of Fort Anderson on the Lower Anderson River, and in the wooded country to the eastward. It is not, however, common in the Barren Grounds, especially from Horton River to Franklin Bay, where it is replaced by *L. rupestris*. The nest is invariably on the ground, and consists of a few withered leaves placed in a shallow cavity or depression. The

female sometimes only leaves it when almost trodden under foot—in fact, several were swooped upon and caught thereon by hand! They usually begin to lay about the end of May or beginning of June. The process of moulting or the gradual assumption of their summer plumage commences a week or two earlier. The female lays from seven to ten, twelve and occasionally as many as thirteen eggs, which I find was the greatest number recorded, and we had reason to know that some at least of the nests were used by Ptarmigan several seasons in succession. When very closely approached, as stated, the female would frequently flutter off, sometimes spreading her wings and ruffling her feathers as if to attack or frighten away intruders; and at others, calling out in distressed tones and acting as if she had been severely wounded. In one instance, where an Indian collector had found a nest which then contained seven eggs, he placed a snare thereon; but on returning to the spot a few hours afterwards, he was surprised to find that six of the eggs had disappeared in the interim, and, as no egg shells (the male escaped) were left behind, they were, in all probability, removed by the parents to a safer position. The male bird is generally not far away from the nest; and his peculiarly hoarse and prolonged note is very frequently heard, the more especially between the hours of 10 p. m. and 2 a. m. Both, however, displayed great courage and devotion in protecting their young, which we often encountered on our return coast trips, from capture. In course of the five exploring seasons, nearly five hundred nests and considerably over three thousand eggs of this species were secured in the Anderson region. In the end of September, during October, and early in November, annually, *L. lagopus* assemble in large flocks; but during the winter it was seldom that more than two or three dozen were ever noticed in single companies. They are, however, most winters very numerous in the neighborhood of Fort Good Hope and other Hudson Bay Company's posts in the Mackenzie River district; but as the spring sets in they begin to migrate northwards. It is very doubtful if many breed to the south of latitude 68° north—at least, in the valley of the Anderson.

302. *Lagopus rupestris* (Gmel.). Rock Ptarmigan.

This ptarmigan is not near so plentiful as *L. lagopus*, and we only met with it in any considerable numbers from Horton River, Barren Grounds, to the shores of Franklin Bay. Very few nests were found to the eastward of that river, or on the coast or "Barrens" of the Lower Anderson. Its nest is similar, but it lays fewer eggs than *L. lagopus*, as nine proved to be the rarely attained maximum among an aggregate record of sixty-five nests—the usual number was six and seven, and there were some which held only four and five eggs. Several of these would doubtless have contained more had they been discovered at a later date. It was no easy matter, however, to find the nests of this species, as the plumage of the birds and the color of the eggs both

strongly resembled the neighboring vegetation. At the same time the female sat so very closely that more than one was caught on the nest; and I recollect an instance where the female bird, on the very near approach of our party, must have crouched as much as possible, in the hope that she might not be noticed, which would have happened had not one of the smartest of our Indian collectors caught a glance of her eye. Although lots of male "Rockers" were observed on our summer trips, feeding and otherwise disporting themselves in the "Barrens," yet comparatively few nests were obtained, and except in 1862 not one well identified example was discovered west of Horton River, but during winter scores of *L. rupestris* were met with in the forest country east of Fort Anderson.

308. *Pediocætes phasianellus* (Linn.). Sharp-tailed Grouse.

This grouse breeds in the pine forests on both sides of the Lockhart and Upper Anderson Rivers, where one or two nests were met with, but the eggs were afterwards lost.

331. *Circus hudsonius* (Linn.). Marsh Hawk.

In June, 1865, an Esquimau snared a female bird on her nest on a willow bush along the Lower Anderson River. It contained five eggs. In June, 1866, a nest composed of twigs and grasses, etc., was found in a similar position; there were six eggs, but they were unfortunately among those lost that season.

334. *Accipiter atricapillus* (Wilson). American Goshawk.

This species is confidently believed to breed, in small numbers however, in the wooded country between Fort Good Hope and the Anderson.

342. *Buteo swainsoni* Bonap. Swainson's Hawk.

In July, 1861, we discovered a nest of this species which was built on a spruce tree along Onion River, the principal tributary of the Lockhart. It contained two well-grown birds. Both parents were about and made a great ado in endeavoring to protect their offspring. The male was shot. In June, 1865, another nest was found on the top crotch of a tall pine in a ravine some 20 miles southeast of Fort Anderson. In composition it was similar to the nest of an *Archibuteo*. The female was shot as she got off her nest, which contained but one egg in a well developed stage. The male was not seen.

347a. *Archibuteo lagopus sancti-johannis* (Gmel.) American Rough-legged Hawk.

This form of *A. lagopus* is abundant in the Anderson district, as specimens have been obtained from all parts of the surrounding forest to the borders of the Barrens, as well as from the Arctic coast. I

find that no less than seventy nests were collected during the period of exploration treated of by my notes. About fifty-five of them were built in the crotches of trees not far from the top, and at a height of 20 or 30 feet from the ground. They were composed externally of sticks, twigs, and small branches, rather comfortably lined with hay, mosses, down, and feathers. The remaining fifteen were situated near the edge of steep cliffs of shady rock on the face of deep ravines and on declivitous river banks, and they were usually made of willow sticks and twigs, but with a thicker lining of hay, moss, and other soft materials. The eggs varied from three to five, never more than the latter number, and their contents were like those of some other birds' eggs gathered by us, in different stages of incubation in the same nest. The parents invariably manifested great uneasiness and frequently gave utterance to vociferous screams of anger and distress when their nests were approached. Early in June, 1864, one of our Indian employés found a nest containing three eggs on a high ledge of bituminous shale, and, as the rule was to secure the parent bird in all possible cases for identification, having missed killing both he placed a snare about the nest, but on going to it later in the day he was disgusted at finding the snare set aside, the eggs gone, and the birds not to be seen; but as there were no shell remains he presumed that they had removed the eggs to a safer position, which he, however, failed to discover. "Dozens," and not as stated "hundreds," of skins of this species were forwarded by us to the Smithsonian Institution.

349. *Aquila chrysaëtos* (Linn.). Golden Eagle.

From various points along the valley of the Anderson River to its outlet in Liverpool Bay and from the mouth of the Wilmot Horton in Franklin Bay, an aggregate of twelve nests of this eagle were obtained by us in the course of the seasons from 1862 to 1865, inclusive. Ten of this number were built against the face of steep and almost inaccessible banks of shale or earth at a height sometimes of 70 or 80 feet, and from 20 to 30 feet below the summit. One thus examined, in 1864, was found to be of considerable size, and it was composed of a large platform of built-up twigs and sticks, having a bed of hay, moss, and feathers in the center, and, as this and other similarly constructed nests appeared to be annually renovated prior to reoccupation, they must ultimately assume vast proportions. Pillaged nests are however frequently deserted for a period, but in one instance where the female had been snared upon her nest and the eggs taken it was found occupied the following season probably by the widowed male with another mate. She was shot and proved to be a mature bird. In two instances only were the nests constructed near the top of tall spruce pines; the sandy nature of the soil in their vicinity was not favorable for building on cliffs. But in no case, however, did any of our party find or our collectors report having seen a large accumulation of bones or other food débris on or in the

neighborhood of the nests. All of these but one contained two eggs, while the oviduct of that particular female contained the other. In confinement, even when taken young, they are fierce and perhaps untamable, though they readily eat the food given to them, whether it be fish or meat. One of four, thus reared at Fort Anderson a year or two later, ferociously killed two of her partners. They kept their plumage in a very cleanly condition, and they always grasped their food in the talons of either leg and tore it with their beaks. After feeding they invariably removed any blood or other impurities which might have adhered to the beak by scratching it with their talons or rubbing it against the bars of their cage. The eagles in question were kept in a cage in the dwelling house during the colder months of the winter, but in April we had them removed to a larger one outside, where they exercised themselves by jumping off and on their roosting poles, and they also seemed much interested in all that they observed taking place within the Fort Square. It is, however, remarkable in this connection that the parent birds may be said to have never given any trouble while their nests were being robbed. Mice, lemmings, and marmots form no unimportant item in the diet of this eagle, one of which was once seen hunting Parry's Spermophile or Marmot, near Langton Harbor, Franklin Bay.

352. *Haliaeetus leucocephalus* (Linn.). Bald Eagle.

Several nests were found with eggs and young in them on Lockhart and Anderson Rivers. They were built on high trees close to the river banks and composed of dried sticks and branches lined with deer hair, mosses, hay, and other soft materials. There were from two to three eggs in each nest. In one instance the parents made hostile demonstrations when their nest was being robbed, but they generally flew away and kept at a safe distance. They are not very numerous, and it is doubtful if any breed to the northward of Fort Anderson.

354a. *Falco rusticolus gyrfalco* (Linn.). Gyrfalcon.

This gyrfalcon is common in the wooded country on both sides of Anderson River. Over twenty nests were secured, and with only two exceptions, which were built, one on a ledge of rocks and the other against the side of a deep ravine, they were found close to or near the top of the tallest trees in the neighborhood. They were similar in composition, but smaller in size than those of the Bald Eagle; and while the number of eggs was either three or four, their contents were frequently found in differing stages of development. Both parents invariably manifested much anger and excitement when interfered with or even distantly approached. They made a great noise, and, indeed, oftener than once their folly in coming to scream loudly over our heads attracted attention to some that would otherwise have escaped notice. The earliest date of finding a nest was May 10. The eggs were quite

fresh, though one taken five days later contained partially formed embryo. In a few cases young birds were in the same nest along with eggs, the contents of which were but little changed, and in another an egg perfectly fresh was found with several ready to hatch. This Falcon is supposed to be a "winterer" in the northern territories of Canada, where its prey is said to consist chiefly of partridges. The allied *F. rusticolus* (Linn.), or probably *F. islandus* (Brünn.), breed in small numbers in the same region, as the Indians often spoke of a large hawk, twice observed by myself, which had successfully eluded all attempts to capture itself or its eggs.

356. *Falco peregrinus anatum* (Bonap.). Duck Hawk.

This falcon constructs no nest whatever so far as I know. It lays its eggs on the most inaccessible ledge of a river cliff of strata, earth, or rock. Four is the usual number, and in some instances the eggs were larger than in others. All of the discovered nests were found in the country to the southward of the post, and it is doubtful if they breed much beyond latitude 68° north. The Duck Hawk makes a great ado when its eggs are taken. Early in August, for several successive years, young birds of the season, fully fledged, but still attended by their parents, were noticed along the limestone and sandstone banks of the Mackenzie River.

357. *Falco columbarius* Linn. Pigeon Hawk.

This falcon ranges along the Anderson River almost to the Arctic coast of Liverpool Bay. Several of their nests had apparently been built by them on pine trees, and others on the ledges of shaly cliffs. The former were composed externally of a few dry willow twigs and internally of withered hay or grasses, etc., and the latter had only a very few decayed leaves under the eggs. In one instance the oviduct of the female contained an egg almost ready for extrusion. It was colored like the others, but the matter was still so soft that it adhered to the fingers on being touched. This peculiarity was noticed in the case of several among a number of similarly discovered eggs, although a few examples taken from the oviduct of the same species were perfectly white. I would also mention the following interesting circumstance: On the 25th of May, 1864, a trusty Indian in my employ found a nest placed in the midst of a thick pine branch of a tree at a height of about six feet from the ground. It was rather loosely constructed of a few dry sticks and a small quantity of coarse hay. It then contained two eggs. Both parents were seen, fired at, and missed. On the 31st he revisited the nest, which still held but two eggs, and again missed the birds. Several days later he made another visit thereto, and to his surprise the eggs and parents had disappeared. His first impression was that some other person had taken them. After looking carefully around, he perceived both birds at a short distance, and this

led him to institute a search which soon resulted in finding that the eggs must have been removed by the parent birds to the face of a muddy bank at least forty yards distant from the original nest. A few decayed leaves had been placed under them, but nothing else in the way of lining. A third egg had been added in the interim. There can hardly be any doubt of the truth of the foregoing facts.

358. *Falco richardsonii* Ridgway. Richardson's Merlin.

This species is supposed to breed in the same region as *F. columbarius*, and in all probability some of the eggs appearing thereunder may have belonged to Richardson's Pigeon Hawk.

364. *Pandion haliaëtus carolinensis* (Gmel.). American Osprey.

If this species does not extend quite to Fort Anderson, I feel satisfied that I have seen more than one specimen, though not sufficiently near to be shot, between that post and Fort Good Hope on Mackenzie River.

367. *Asio accipitrinus* (Pallas). Short-eared Owl.

Twelve nests of this species were found in various situations in the "Barrens," as well as in wooded tracts, but all were on the ground and mere depressions apparently scraped for the purpose, and lined with dried grasses and withered leaves; a few feathers were noticed in about half of them, and they seemed to have been plucked from her breast by the parent bird. She occasionally sits very close on her nest. The number of eggs in a nest varied between three and five, and but one contained as many as seven. On 30th June, 1865, an Owl was observed flying about a particular spot in the Barren Grounds, and we concluded that its mate was not far off, a suspicion confirmed by its uneasy excitement as soon as a search was instituted. Myself and four of our party were thus fully engaged over an hour ere success rewarded our efforts by the female getting off her nest in the center of a small clump of dwarf willows, one foot in height, just as she was almost trodden upon. It was composed of withered grasses and feathers, and contained five eggs. We must have frequently approached her in the course of our protracted search.

370. *Scotiaptex cinerea* (Gmel.). Great Gray Owl.

I should not say that this owl was in "great abundance" in the Anderson region, as inadvertently stated on page 33, vol. III, of the Land Birds. We certainly observed very few specimens, and we found but one nest, that referred to in the same paragraph, on the 19th July, 1862, near Lockhart River, on the route to Fort Good Hope. It was built on a pine spruce tree at a height of about twenty feet, and was composed of twigs and mosses thinly lined with feathers and down. It contained

two eggs and two young, both of which had lately died. The female left the nest at our approach and flew to another tree at some distance, where she was shot.

371. *Nyctala tengmalmi richardsoni* (Bonap.). Richardson's Owl.

This owl, or a bird closely answering to the description, was repeatedly observed in the country between Fort Good Hope and the Anderson River.

375b. *Bubo virginianus arcticus* (Swainson). Arctic Horned Owl.

A similar remark to that made regarding No. 371 will also prove correct under this owl, or to the *B. virginianus subarcticus* of Hoy.

376. *Nyctea nyctea* (Linn.). Snowy Owl.

This species is not plentiful in the Anderson country, while every effort made to secure even one specimen nest with its eggs proved unsuccessful. On one occasion we noticed a white owl hunting marmots (*Spermophilus empetra*) in the barren grounds; and there can be no doubt that this and other owls sometimes rob ptarmigan and ducks, etc., of their eggs.

377a. *Surnia ulula caparoch* (Mill.). American Hawk Owl.

The Hawk Owl is not uncommon in the region of Anderson River, although only four nests were discovered and the eggs taken therefrom. All of these were built in pine trees at a considerable height from the ground. One was actually placed on the topmost boughs, and, like the others, it was constructed of small sticks and twigs lined with hay and moss. The male and female of the latter were shot, and the nest contained two young birds, one of which was apparently ten days and the other three weeks old, together with an addled egg. All of the others, however, but one, had six eggs, and in a single instance as many as seven were secured. The parents always disapproved of our proceedings. Very few owls were observed on the lines of march traveled over during the seasons of 1864 and 1865. This species winters in Arctic America.

390. *Ceryle alcyon* (Linn.). Belted Kingfisher.

Although several birds were seen on the Anderson and elsewhere, and some skins were obtained from the Esquimaux, yet we never found any nests, nor received its eggs from any of the natives.

400. *Picoides arcticus* (Swainson). Arctic Three-toed Woodpecker.

It is believed that this species breeds and also winters in the Arctic regions. My notes record the finding at Fort Anderson, on 30th May, 1863, of a nest containing three perfectly fresh eggs—a mere hole in a

dry pine several feet from the ground. A female bird answering to the given description was shot in its vicinity. It may, however, have been an example of *P. americanus*.

401a. *Picoides americanus alascensis* (Nelson). Alaskan Three-toed Woodpecker.

Although no reference is made to their receipt in the said Land Bird's History, my notes record that on 5th June, 1864, both parents were shot in close proximity to the nest, which contained four eggs. It was a hole in a dry spruce, at a height of six or seven feet—the eggs were lying on the decayed dust of the tree and their contents were perfectly fresh. On 21st June, 1864, a nest probably of the same species was found in a similar position, and it was occupied by four young birds of a week or ten days age. One of the parents was seen in the vicinity. This bird was formerly known, and the specimens receipted by the Smithsonian, as *P. hirsutus*.

412. *Colaptes auratus* (Linn.). Flicker.

It is by no means scarce in the valley of the Anderson; but as its eggs are not in demand very few indeed were gathered for transmission to Washington.

420. *Chordeiles virginianus* (Gmel.). Nighthawk.

A few straggling birds have been observed in the far north; but I never came across its nest except in the Clear Water River, Athabasca, where one containing two eggs was found on the ground in the end of June, 1873.

468. *Empidonax hammondi* (Xantus). Hammond's Flycatcher.

From an article published in Volume II of the "Proceedings of the United States National Museum, 1879," by the late eminent and well-known oölogist, Dr. Brewer, of Boston, I find a reference to some eggs of this Flycatcher obtained from "Anderson River," which I conclude were sent to the Smithsonian among a number of unidentified specimens, as I can discover no specific record thereof, nor of an example of *Myiodioctes pusillus*, entered in the Receipt List of Birds, under either heading, in my field notes.

474. *Otocoris alpestris* (Linn.). Horned Lark.

Nine nests of this lark were received at Fort Anderson—a few of them from the Esquimaux, and the others were collected by us in the Barrens and on the coast of Franklin Bay. The nest was usually composed of fine hay neatly disposed and lined with deer hair. Several of the parent birds were secured by snares placed thereon.

484. *Perisoreus canadensis* (Linn.). Canada Jay.

Tolerably numerous in the wooded country, even to its northern and eastern limits; but none were observed by us in the Barrens proper west or east of Horton River, nor on the Arctic coast. While snow is still on the ground it usually builds its nest in spruce or tamarac trees—often in the middle of a swamp—on the branches close to the trunk and well concealed from view, and at a height of about nine or ten feet. They are constructed of hay and feathers, supported underneath by twigs and willow sticks laid crosswise and partly interlaced. On 11th May, 1863, an Indian discovered a nest and one egg perfectly fresh, along with two young birds a few days old. Another nest contained four eggs, the contents of which were in a more or less developed stage of incubation. It is very probable that the one referred to, as well as all other specimens of the “Whisky Jack” procured from the lower Anderson and Mackenzie Rivers, may really belong to Ridgway’s recently determined form of this Jay, *P. canadensis fumifrons*.

486. *Corvus corax principalis* Ridgway. Northern Raven.

This species is abundant at Fort Anderson and on the lower Lockhart and Anderson Rivers; and although not seen by us there, it may possibly breed on the shores of the Arctic Sea. All but one of the eight recorded nests were situated on tall pines, and composed of dry willow sticks and twigs and thickly lined with either deer hair or dry mosses, grasses, and more or less hair from various animals. The average number of eggs was six, but instances of seven and eight were common. In the months of February and March, 1865, a raven became almost domesticated at Fort Anderson. At first it fed on garbage outside of the fort with a companion; but shortly after it came alone, alighting within the stockade square, and would allow itself to be very closely approached by the inmates. Several young dogs soon became familiar therewith, and they would even frolic and gambol together. It was never known to attempt to injure the smallest of them, nor did they ever offer to annoy it. While this raven seemed to have full confidence in the people of the fort it kept at a careful distance from all Indian or Esquimaux visitors. It, however, suddenly disappeared one day, having probably come to grief. On 11th June, 1863, an Esquimaux brought me an egg of a Pigeon hawk and the head of a crow, having, as he declared, shot it on the nest, which was built on the topmost crotch of a pine tree—the latter therefore probably either ate the other eggs, shells and all, if there were any, or dispossessed the former birds with the view of occupying it herself.

488. *Corvus americanus* Audubon. American Crow.

On 10th May, 1865, an Esquimaux snared the parent bird on a nest which was built on the top of a tall spruce on the Lower Anderson River—a mass of dried twigs and branches lined with hay, mosses, and

sundries—it contained four eggs. Another, taken near the fort on 5th May, 1866, had five eggs with largely developed embryos in them.

509. *Scolecophagus carolinus* (Müll.). Rusty Blackbird.

This bird is fairly abundant in the neighborhood of Fort Anderson; but examples were frequently observed as far as the eastern limits of the forest, as well as near the "crossing" on Horton River, in about latitude 69° N. and longitude 125° W. The twenty-five nests discovered in these several localities were built on trees at a height of from 5 to 8 feet from the ground. Five eggs was the maximum number found in any one nest. The parents manifested great uneasiness when their nests were approached, and they would often fly from tree to tree in order to attract one away from the spot.

515. *Pinicola enucleator* (Linn.). Pine Grosbeak.

In the spring of 1861 an Indian discovered a nest of this species on a pine tree some 60 miles south of Fort Anderson, but unfortunately while descending therewith he fell and destroyed both nest and eggs; and although we frequently observed some birds at the post and elsewhere, we never succeeded in finding another nest.

521. *Loxia curvirostra minor* (Brehm). American Crossbill.

Several birds resembling the published description of this species were seen at Fort Anderson, fired at and missed on 20th June, 1862, but the closest search failed to discover any nests.

522. *Loxia leucoptera* Gmel. White-winged Crossbill.

A male and female specimen of this crossbill was obtained during our residence on the Anderson, where examples—some of which were subsequently lost—of *special desiderata* were kept in hand for the benefit of our Indian and Esquimaux collectors. The former assured me that they had occasionally observed birds of both, but especially this species, in the country to the southward of the fort.

527a. *Acanthis hornemannii exilipes* (Cooper). Hoary Redpoll.

Common on Anderson River. They build their nests on low pine and willow bushes, and the eggs are usually four and five in number. This is believed to be one of the "winterers" in that quarter. *A. hornemannii* may also be a residenter.

528. *Acanthis linaria* (Linn.). Redpoll.

A similar remark will apply here as under the preceding, both species being about equally abundant in the wooded country. In all we received and exported about eighty nests belonging to Nos. 527a and 528, and we found them more abundant in 1864 than during any other season.

534 *Plectrophenax nivalis* (Linn.). Snowflake.

The only authenticated nest and eggs (No. 10433) in the Smithsonian Museum in 1874 was that discovered by us on 8th July, 1864, in a small hole large enough to admit of the female, and it was placed at a distance of nearly 2 feet from the entrance, in a sand bank along the shores of Franklin Bay. "The nest is deeply saucer-shaped, and composed of wiry grass stems, with a few feathers in the lining. External diameter 3.75 inches, internal about 3, depth 2.50 externally and 1.50 internally. The eggs, five in number, are of a dull white, with perhaps a faint bluish cast, sprinkled and spattered with a dilute yellowish rufous, the markings most numerous towards the larger end. They measure 0.95 of an inch in length, by 0.64 in breadth." The parent bird was snared on the nest. In 1865 we observed a number of *P. nivalis* on the same coast, but failed to find another nest.

536. *Calcarius lapponicus* (Linn.). Lapland Longspur.

Altogether eighty-three nests of this species were obtained in the Barren Grounds, as well as on the shores of Franklin Bay. One from the latter, found on 27th June, 1864, was like all the others, built on the ground, "and is deeply saucer-shaped, measuring 3.75 inches external and 2.30 inches internal diameter; the depth 2.75 exteriorly and 1.50 interiorly. It is composed of coarse wiry grass stems and softly lined with feathers of *Lagopus*. The eggs, five in number, have the ground color light umber-drab, faintly blotched with deeper livid slate, and with a few straggling black lines, much as in certain *Icteridæ* and in *Chondestes*. They measured 0.86 of an inch in length by 0.63 in breadth."

537. *Calcarius pictus* (Swains.). Smiths's Longspur.

Very abundant in the country to the eastward of Fort Anderson, in the Barren Grounds and on the Lower Anderson River. These several localities yielded an aggregate of one hundred and fifty nests. They were all on the ground, and usually in open spaces or plains, but some were also placed in the vicinity of trees. The average number of eggs was four; occasionally as many as five. "The nests were constructed of fine dry grasses, carefully arranged and lined with down, feathers or finer materials similar to those of the outer portions. In a few there were no feathers, in others feathers in varying proportions, and in several the down and feathers composed the chief portion of the nest, with only a few leaves and a little hay as a base for the nest."

540 *Pooecetes gramineus* (Gmel.). Vesper Sparrow.

On 26th June, 1864, we found a nest of this species containing six eggs, in a sparsely wooded tract of country east of Fort Anderson. The female was snared. The bird, as well as the nest and eggs, all strongly

agreed with the published description, but, as it is stated in the history referred to that no specimens were obtained by us, I must conclude that they were lost en route or that we had erred in our identification.

542*a*. *Ammodramus sandwichensis savanna* (Wilson). Savanna Sparrow.

Numerous on the Anderson, and, although frequenting marshes, it generally makes its nest on dry ground, of course, with a lining of the finer grasses. There are usually from four to six eggs in a nest.

542*b*. *Ammodramus sandwichensis alaudinus* (Bonap.). Western Savanna Sparrow.

Very abundant in marshy and sparsely wooded tracts or plains near Fort Anderson and on the lower river, seeing that "upwards of two hundred nests with eggs" were collected in that quarter. They were all placed on the ground and composed of dry stems of grasses, lined with finer materials of the same. Sometimes the nests are lined with a few feathers and deer's hair. The number of eggs in a nest was four or five.

556. *Zonotrichia leucophrys intermedia*, Ridgway. Intermediate Sparrow.

Later investigations have resulted in determining that all references to *Z. gambeli* (Nutt) given in Baird, Brewer and Ridgway's History of North American Birds should apply to this new species, which replaces the other in northern Alaska, as well as on the Lower Anderson and Mackenzie Rivers. The Intermediate Sparrow breeds in great numbers in the wooded sections of Anderson district. The nests were nearly always placed on the ground, in the tufts or tussocks of grass, clumps of Labrador tea (*Ledum palustre*), and amid stunted willows. They were composed of fine hay and lined with deer hair, occasionally mixed with a few feathers. Several were made entirely of the finer grasses. The usual number of eggs was four, but a lot contained as many as five and six. Upwards of one hundred nests were collected in the region referred to.

559. *Spizella monticola* (Gmel.). Tree Sparrow.

This is perhaps the most abundant Sparrow found breeding in the valley of Anderson River, as is evidenced by the number of nests, two hundred and sixteen, secured. They were almost invariably composed of hay or dried grasses, intermixed with a little stringy bark and lined with feathers. Most of them were found on the ground and the others on dwarf willow, at a height of from one to four feet. Four and five eggs, occasionally as many as six and seven, appeared to be the complement. It is possible that the Alaskan form *S. monticola ochracea*, Brewster, may also nest in this quarter.

567. *Junco hyemalis* (Linn.). Slate-colored Junco.

This species breeds in the forest and to the border of the Barrens, where several birds, nests, and eggs were secured. These were always on the ground and made of fine hay lined with deer hair. Four and five eggs were the usual numbers found in them.

585. *Passerella iliaca* (Merrem). Fox Sparrow.

Tolerably common on both banks of the Anderson, and two or three nests were also discovered in the vicinity of a small stream named Swan River, in the Barren Grounds. Most of the nests were built on trees, and they resembled those of *Turdus aliciae*, but a few found on the ground, however, were composed of coarse dry grass, lined with some of a finer quality, a few deer hairs, and a sprinkling of fresh moss. The complement of eggs varies from four to five.

612. *Petrochelidon lunifrons* (Say). Cliff Swallow.

In 1856, about one hundred and sixty nests of these Swallows were, for the first time, built under the eaves of the three principal buildings of Fort Good Hope, Mackenzie River, but, as many of the young were destroyed by Indian boys, only one hundred nests were constructed at the same place the following season. In 1866 a bird of this species was observed closely examining the eaves of the houses at Fort Anderson, but, probably not finding them suitable or in consequence of having been rudely disturbed by an Indian boy throwing stones thereat, it flew away and never returned. They however breed in large numbers along the banks of the Lockhart and Anderson Rivers, whence several examples were obtained.

616. *Clivicola riparia* (Linn.). Bank Swallow.

This species is to be met with in considerable numbers during the season of nidification. It builds its nests in holes in sandy clayey banks on Anderson River. Several birds and eggs were taken, but, not being in much request, their collection was discouraged.

618. *Ampelis garrulus* Linn. Bohemian Waxwing.

Up to 1874 "the only instances on record of the discovery of the eggs of this interesting bird in America were those of a nest and one egg taken, by the late Mr. Kennicott, at Fort Youkon, Alaska, in 1861, and of a nest and egg found the same season in a pine tree on Anderson River, in about latitude 68° north. Both are now in the Smithsonian Institution at Washington." Several skins of the bird were obtained at Fort Anderson in 1862, but the most diligent search failed to secure any more nests or eggs.

621. *Lanius borealis* Vieill. Northern Shrike.

A nest of the Northern Shrike, containing six eggs, was obtained at Fort Anderson on 11th June, 1863. "This is in many respects in striking contrast with the nests of its kindred species of the Southern States, far exceeding them in its relative size, in elaborate finish, and warmth. It is altogether a remarkable example of what is known as felted nests, whose various materials are most elaborately matted together into a homogeneous and symmetrical whole. It is seven inches in diameter and three and a half in height. The cavity is proportionately large and deep, having a diameter of four and a half inches and a depth of two. Except the base, which is composed of a few twigs and stalks of coarse plants, the nest is made entirely of soft and warm materials, most elaborately interworked together. These materials are feathers from various birds, fine down of the Eider and other ducks, fine mosses and lichens, slender stems, grasses, etc., and are skillfully and artistically wrought into a beautiful and symmetrical nest, strengthened by the interposition of a few slender twigs and stems without affecting the general felt-like character of the whole. The eggs measure 1.10 inches by .80, and are of a light-greenish ground, marbled and streaked with blotches of obscure purple, clay color and rufous brown." A second nest of a less elaborate character, containing eight eggs, was subsequently discovered on Anderson River, to the northward of the post.

646. *Helminthophila celata* (Say). Orange-crowned Warbler.

This is one of the rarest Warblers which breed on the Anderson, where several of its nests, containing from four to six eggs, were found. They were made of hay or grasses, lined with deer hair, feathers and finer grasses, and placed on the ground in the shade of a clump of dwarf willow or Labrador tea.

652. *Dendroica æstiva* (Gmel.). Yellow Warbler.

Very abundant throughout the entire wooded region of Arctic America, where it builds on dwarf willows and small scrub pine, at a height of a few feet from the ground. As their eggs were not wanted, we did all that was possible to discourage their collection.

655. *Dendroica coronata* (Linn.). Myrtle Warbler.

This Warbler is not numerous on the Anderson, where some thirteen nests were found, built on low spruce trees, and a few were also placed on the ground. It lays from four to five eggs.

661. *Dendroica striata* (Forster). Black Poll Warbler.

More plentiful than *D. coronata*, although only twenty-one nests were secured. They were similarly situated, and contained four or five eggs, and two or three of them were found on the ground.

697. *Anthus pensilvanicus* (Latham). American Pipit.

There is reason to believe that this bird is also among those that resort to Anderson River during their annual season of reproduction.

739. *Parus cinctus obtectus* (Cabanis). Siberian Chickadee.

On 1st June, 1864, a nest of this species, containing seven eggs, was found near Fort Anderson, in a hole in a dry spruce stump, at a height of about 6 feet from the ground. It was composed of a moderate quantity of hare or rabbit fur, intermixed with a sprinkling of dried moss. The female parent was snared on the nest, but the male was not seen. The contents of the eggs were tolerably fresh. It has since turned out that "this was the first specimen of the Siberian Chickadee obtained on the American Continent." As birds of the genus undoubtedly winter in that region, additional examples of this, and some also of *P. atricapillus septentrionalis* (Harris) and *P. hudsonicus*, Förster may be discovered there some day.

749. *Regulus calendula* (Linn.). Ruby-crowned Kinglet.

There can be no doubt that this kinglet is to be met with during the summer season on the Anderson River, as both Indians and Esquimaux assured me that they had seen birds exactly similar to a Good Hope specimen shown to them.

757. *Turdus aliciaë* Baird. Gray-checked Thrush.

This thrush is very abundant in the Anderson River region, not only wherever trees are to be had for nesting purposes, but also in situations where none exist. "More than 200 specimens (mostly with their eggs) having been sent from Fort Anderson to the Smithsonian Institution." The greatest number were built on trees in the usual manner, but some few of them were placed on the ground. One nest was also taken on the banks of the Wilmot-Horton River.

761. *Merula migratoria* (Linn.). American Robin.

One of the most numerous and widely distributed of American birds, but not being *desiderata*, scarcely any of its eggs were received at Fort Anderson, where, on the contrary, both Indians and Esquimaux were enjoined not to interfere with its nests. A few were also met with on the banks of the Swan and Wilmot-Horton Rivers, in the Barren Grounds. Comparatively few parents display greater courage and devotion in the defense of their young than Robin Red-breast.

NOTE.—In the preparation of the foregoing list and relative notes at this remote point in British Columbia I have labored under the disadvantage of having but a rather limited number of necessary books to refer to, and may, therefore, have unwittingly fallen into a few errors which a fuller access would have obviated. I may further add that during the period of which they treat a few examples of fish, insects,

plants, and shells were gathered for the Smithsonian Institution, besides a considerable collection of ethnological specimens pertaining to the Esquimaux of the Anderson and Mackenzie Rivers, while a list of the mammals obtained and observed by me in the northern regions of the Dominion may possibly form the subject of a similar but shorter paper in the near future.

R. MACFARLANE.

FORT ST. JAMES, STUART'S LAKE.

NEW CALEDONIA DISTRICT,

British Columbia, June 25, 1889.

ADDITIONAL NOTE.—Early in July, 1889, the manuscript of the aforesaid notes was transmitted to President Bell, but several months passed before it was read by him at a meeting of the Historical and Scientific Society of Manitoba, Winnipeg. Two or three more months elapsed ere the paper itself was published as Transaction No. 39, Season 1888-'89. The sample copy thereof received by me at this place contained so many printer's errors, besides some introduced nomenclature, that I asked Mr. Bell to have it reprinted; but as this was impossible, I have decided on publishing an edition of the notes in question, which I hope will prove more acceptable to naturalists, as the referred-to blemishes have been removed, while I have also made a few corrections and additions kindly pointed out by a friend (Capt. Charles E. Bendire, U. S. Army), in Washington, who, from his long and important connection with the Smithsonian Institution and the U. S. National Museum, had become well acquainted with the variety and extent of the Fort Anderson collections.

R. MACFARLANE.

CUMBERLAND HOUSE, CUMBERLAND DISTRICT,

Saskatchewan, N. W. T., November 25, 1890.