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## CHAMPLAIN'S ASTROLABE.

BY CHARLES MACNAMARA, ARNPRIOR, ONTARIO.

The astrolabe was an instrument for measuring the altitude and relative positions of heavenly bodies. It was probably invented by those eminent astronomers of antiquity, the Chaldeans; at any rate it was well known to the Greeks and Orientals long before Christ. Essentially it consisted of a graduated circle, across the diameter of which was a moveable bar, pivoted at the centre. In use the instrument was hung plumb, and the body whose altitude it was desired to ascertain, was sighted along the bar, the angle above the horizon being read on a scale at the edge of the circle. The name of the instrument, derived from the Greek, may be translated as "star-taker."

The astrolabe gradually developed into two different types: a large stationary spherical apparatus that was the chief instrument in observatories even into the 17th century, and a small circular model that could be conveniently carried by travellers. This portable type was often richly ornamented, and engraved with elaborate graduations and scales, but about 1480 a simple form was designed for the use of mariners, and it was apparently this model that Columbus used on his voyages of discovery. It proved, however, an awkward instrument on a pitching vessel, and shipmen generally seem to have preferred another device known as the cross-staff. Nevertheless, the astrolabe continued in use until well into the 18th century, when it was displaced by the quadrant.

In 1867 an astrolabe was found near Cobden, Ontario, on the old portage route which cuts off the great elbow that the Ottawa river makes to the north between its expanses known as Allumette lake and Lac des Chats; and as first noticed by the late A. J. Russell of Ottawa, in a pamphlet published in 1879, evidence points strongly to the instrument having been lost by Champlain on his journey up the Ottawa in 1613, more than 250 years before.

Champlain was induced to undertake this expedition by the lying story of one Nicholas de Vignau, whom he had entrusted with some minor explorations in Canada, and who had spent a winter with the natives there. On de Vignau's return

to France in 1612, he told Champlain a wonderful tale of how he had reached the North Sea by way of the River of the Algonquins—otherwise, the Ottawa. One could travel, de Vignau said, from the Falls of St. Louis (Lachine) to this sea and back again in 17 days; and he amplified his story by asserting that he had seen the wreck of an English ship on the shore, and that the Indians there could show the scalps of the crew of 80 men that they had killed, sparing only one English boy whom they were keeping for Champlain.

Deceived by this fabrication—to which de Vignau actually made affidavit before two notaries at La Rochelle—Champlain, on Monday, the 27th May, 1613, to the sound of a parting salute from his ships, set out with five companions from Isle Ste. Hélène (opposite the present city of Montreal) to seek the mythical sea. The party travelled in two canoes, and at starting consisted of Champlain, de Vignau and three other Frenchmen with one Indian; but later on one of the Frenchmen was sent back and a second Indian took his place.

A saying of the late Mr. Lindsay Russell, one time Surveyor General of Canada, was that "a multiplicity of apparatus is the hall-mark of the amateur." Champlain was an old experienced traveller, to whom voyages of discovery had become so much a matter of course that his journals never make any particular mention of his equipment, and we may be sure that he carried no "multiplicity of apparatus." But he certainly must have been provided with an astrolabe, for at three different places along his route he took observations for latitude. The first was near the foot of Lake St. Louis on the St. Lawrence, the position of which he gives as  $45^{\circ} 18'$ . Considering the crudeness of his instrument, his observation was remarkably accurate, for the correct latitude is about  $45^{\circ} 25'$ .

In these days of swift and luxurious travel, it is interesting to note that it took the explorer eight days to cover the distance between Montreal and Ottawa; and that on the way he was nearly drowned in the Long Sault rapids. Thus, he reached the Chaudière Falls on the 4th of

June, and after determining the latitude of the portage on the Hull side as  $45^{\circ} 38'$  (actually  $45^{\circ} 26'$ ) he proceeded up Lake Deschênes the same day. The barren Eardley hills on the one side and the sandy shores of Constant Bay on the other gave him a poor opinion of the surrounding country, and he puts it down as "very unpromising." The party passed the night "on a very pleasant island"—doubtless Mohr island—and on the 5th June they portaged at the Chats falls and paddled up Lac des Chats. Champlain speaks of the Madawaska river as a tributary at this point, but says nothing of the Mississippi or the Bonnechère. His remark that "the lands about the before-mentioned lake are sandy" shows that he must have gone up by the Quebec shore, and was struck by the long arid stretches of Kilroy's bay and Norway bay. In Lac des Chats they camped as usual on an island, evidently for safety, as the Algonquins were always desperately afraid of a surprise attack by the Iroquois. On this island Champlain recounts that he "saw a number of fine red cypress [cedars] the first I had seen in this country, out of which I made a cross, which I planted at one end of the island on an elevated and conspicuous spot, with the arms of France, as I had done in other places where we had stopped. I called this island Sainte Croix." Red cedar has been extinct for many years on Lac des Chats, and there is no island in the lake with any marked elevation on it, so it is impossible to identify Holy Cross island with any certainty; but probably it is one of the Braeside islands, or perhaps the island opposite Norway bay.

Next day, Thursday, 6th June, they ascended the Chenaux rapids to within about a mile of the present village of Portage du Fort, and landed on the Ontario side at a point known in after years as Gould's Landing. Champlain took the latitude of this place and says he found it  $46^{\circ} 40'$ . In reality the place is about  $45^{\circ} 34'$ ; and in some way he had made a mistake of a degree in his calculation. "Here," Champlain says, "our savages left the sacks containing their provisions and their less necessary articles in order to be lighter for going over-land and avoiding several falls which it was necessary to pass." And here de Vignau, who must have been contemplating the approaching exposure of his falsehood with ever increasing anxiety, tried to persuade Champlain that the best route was up the Ottawa, his hope, evident in the sequel, being that the long succession of rapids above Portage du Fort would bring disaster on the expedition, or at least discourage Champlain and cause him to turn back. But "our savages said to him, you are tired of living, and to me that I ought not to believe him, and that he did not tell the truth." Convinced

that the Indians knew the best way, Champlain took their advice, and the party climbed to the higher land above the river, and travelled southward a couple of miles to the first of a chain of long narrow lakes that lie across the base of the large peninsula formed by the great swing of the Ottawa river towards the north. Until railways extended into this part of Ontario in the seventies of the last century, the route here followed by Champlain was still the principal road to the upper Ottawa. Steamboats plied on Lac des Chats from the head of the Chats rapids to Gould's Landing, and thence travellers were conveyed by stage to Muskrat lake where they embarked on a steamboat that carried them to within a few miles of Pembroke.

This was the longest and hardest portage the expedition had struck yet. Champlain himself carried three arquebuses and three paddles, his cloak and "some small articles," among which it is safe to say was the famous astrolabe. The others, he says "were somewhat more heavily loaded, but more troubled by the mosquitoes than by their loads." They passed through the string of four small lakes, the first three of which are known as Coldingham, Town and Catherine, the fourth being apparently nameless, and stopped for the night on the shore of the more important Olmsted lake.

"Nous nous reposâmes sur le bord d'un estang qui estoit assez agreable, & fîmes du feu pour chasser les mousquites, qui nous molestoient fort, l'importunite desquels est si estrange, qu'il est impossible d'en pouvoir faire la descriptio." Thus Champlain: If he returned to-day, he would see many and astounding changes in the country he discovered; but among all that was new and wonderful, he would again find in the month of June the same old mosquitoes, the importunity of which is as extraordinary as ever.

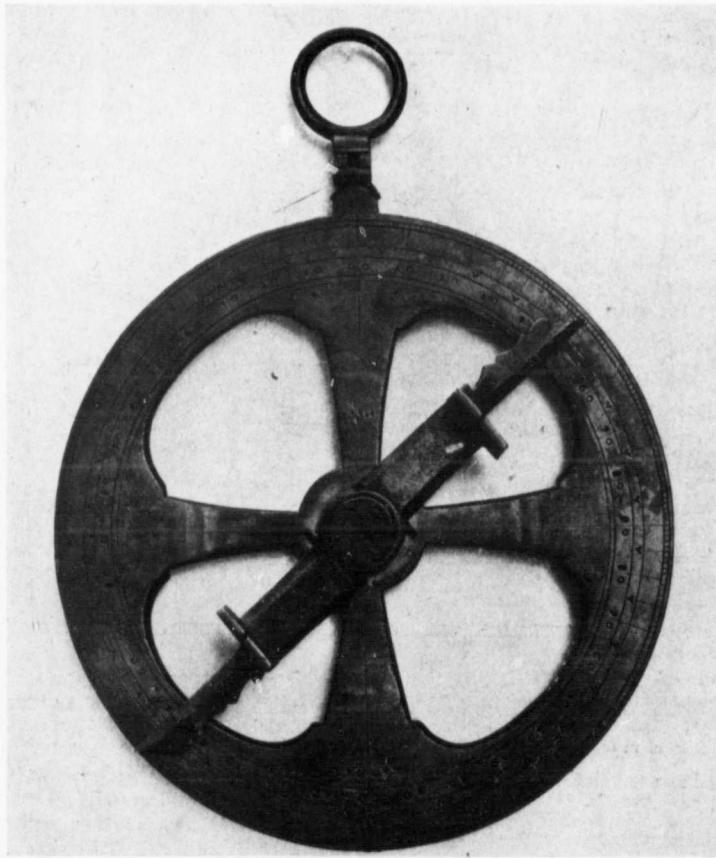
In the morning (Friday, June 7th), they paddled down Olmsted lake, and on foot crossed the three miles or so of country that separates it from Muskrat lake, as the connecting streams are not navigable even by a bark canoe. A small lake about a mile long, now called by the popular name of Green lake, lay in their way, and although Champlain does not mention it, it is very likely that the Indians were glad to take advantage of even such a short piece of water as this in their long portage. It was on the right bank of the small stream flowing out of Green lake, and some 200 yards from the foot of the lake, that the astrolabe was found. Somewhere between Olmsted lake and Muskrat lake, Champlain and his men encountered what foresters know as a windfall. The thick growth of pines had been blown down by a tornado, and it was with great difficulty that the party made their way

"now over now under these trees." The ways in which the astrolabe may have been lost are of course numberless, but there is at least a strong probability that this windfall occurred around Green lake, and that in climbing through the confusion of trees, the instrument was dropped unnoticed in the tangle.

Near Muskrat lake they found a settlement of Indians who received them kindly, and fitted out

what sterile soil. Neither the site of this village nor the extensive cemetery nearby, described at length by Champlain, has ever been discovered. A rich find awaits some lucky archeologist on Allumette island.

For our present purpose it is important to notice what Champlain says about the latitude of this place. The text of the 1632 edition of his journal reads: "Elle est par les 47 degrez." In "Voyages of



Champlain's Astrolabe; actual size is 5½ in. in diameter. From photograph kindly supplied by Mr. Samuel V. Hoffman.

two canoes to convey them on their way. From the foot of the lake they portaged once more, this time to the Ottawa, where they were met by the Chief Tessouat, and with him crossed to Allumette island. Protected by the long portages and numerous rapids, the Algonquins, feeling comparatively safe from the dread Iroquois, had established here a considerable village of wigwams and were cultivating the some-

Samuel de Champlain," edited by W. L. Grant (New York, 1907), the translator, missing the point of this expression, renders it simply as: "It is in latitude 47°." The real meaning of the phrase is perhaps best expressed in colloquial form: "It is somewhere around 47 degrees." Champlain says nothing of the loss of his astrolabe, but it is clear that he made no observation here—presumably be-

cause he was without the means—and merely estimated the position by dead reckoning from his last observation at Gould's Landing.

And now the fatal hour for de Vignau had come. His story of the North Sea seems to have been suggested by some vague report he had heard of English explorations in Hudson's Bay. But he knew nothing about Hudson's Bay, and in order to give his imaginary sea a local habitation and a name, he connected it with Lake Nipissing, which he had no doubt heard spoken of by his Indian hosts as a large body of water not many days' journey distant. Thus Champlain was led to ask Tessouat

raised loud cries, and Tessouat said: "You are a downright liar, you know well that you slept at my side every night with my children; if you were among the people mentioned it was while sleeping."

For a while the impostor brazened it out, but at last gave in and made full confession. "After meditating by himself he fell on his knees, and asked my pardon, declaring that all he had said both in France and in this country in respect to the sea in question was false, that he had never seen it, and that he had never gone farther than the village of Tessouat." His anxiety to return to Canada, he said, had caused him to concoct the story—Cana-



Green lake, near Cobden, Ont.; outlet flows through rushes at lower right-hand corner.

for canoes and men to visit the "Nebicerine" (Nipissings).

At first agreeing very reluctantly—for they were not on good terms with the Nipissings—at a later council the Indians decided that the road was too hard and dangerous, and refused to go. To overcome these objections, Champlain pointed to de Vignau as a young man who had travelled to the Nipissings without encountering such great difficulties or finding the people so unfriendly. Astonished, Tessouat asked: "Nicholas, is it true that you say you were among the Nebicerine?" It was long before de Vignau answered; then he said hesitatingly: "Yes, I was there." At this the Indians

will forgive him a little for the implied compliment to their country—and he trusted to the hardships and hindrances of the road to turn Champlain back before the lie was discovered.

The Indians were greatly pleased that de Vignau's avowals had vindicated them, but they tried to wreak vengeance on the wretched liar. "Give him to us, and we promise you that he shall not lie any more," they cried, and all set after him shouting—"their children shouting still more." But Champlain, to clear himself of the failure of the expedition, desired to have the impostor repeat his confession before the Frenchmen at the ships, and so he saved de Vignau from the wrath of the savages.



Regretting the waste of time and the hardships endured to no purpose, but patient under his disappointment, Champlain started on his return journey on the 10th June, accompanied by forty canoes, which number was later increased to eighty by accession of parties along the way, all eager to trade their furs at the Falls of St. Louis for the wonderful wares of the white man. Champlain did not recross the Muskrat lake portage, but ran the rapids down the main stream. At the Chaudière the Indians threw an offering of tobacco into the falls with appropriate ceremony, "by which means they are ensured protection against their enemies, that other-

to do with him, and Champlain says: "As for our liar, none of the savages wanted him, notwithstanding my request to them to take him, and we left him to the mercy of God." And so de Vignau disappears from history.

Anyway his troubles were all over when our story begins again after an interval of 254 years. From 1613 we jump to 1867, in which year John Lee, a farmer living in the Township of Ross, near Cobden, Ontario, took a job of clearing land for Captain Overman, of the Jason Gould, the Ottawa Forwarding Company's steamboat on Muskrat lake. Captain Overman had located lot 12 in the second



Stream from Green lake flows through alders on the right. Astrolabe was found near where figure is standing.

wise misfortune would befall them." But in his heart, man has seldom any real faith in a propitiatory sacrifice—the gods are not so easy to turn aside—and in spite of this solemn rite, several times the Indians were thrown into a panic at night by false alarms of an Iroquois attack.

Arrived at the ships on the 17th June, Champlain called his chief men together, and had de Vignau "make declaration of his maliciousness" before them. The wretch pleaded hard for forgiveness, "and in view of certain considerations" Champlain pardoned him. The subsequent fate of the impostor is not on record. The French would have nothing

concession of Ross, about two miles from the town of Cobden; and it was here that the astrolabe we must attribute to Champlain, was found in August, 1867, by John Lee's son, Edward George, at that time a boy of 14 years, and now a well known resident of the third line of Fitzroy, a few miles from Arnprior. How he discovered the astrolabe cannot be better told than in Mr. Lee's own words, as he related it to me in August last:

"One day we were working just below Green lake in a bush of mixed hardwood and pine. I don't remember the number of the lot now, but it was afterwards occupied by John Sammen, father

of Mr. Sammon, of the Copeland House, Pembroke. When noon came, pa sent me home for his dinner, and when I got back with it he sat down to eat it, while I went on drawing the logs with our team of oxen, Buck and Brin, to the heaps where they were being burned. We burned timber those times that would make a man's fortune now-a-days. There was an old fallen red pine that lay downhill with its top in the little creek that comes out of Green lake. Pa had chopped the trunk of this tree into three logs, and I drew two of them away with the oxen, but the third log, just below the branches was not chopped clean off, and I hitched the oxen to it and pulled it around sideways so as to break it off. I had to dig away the moss and marl that the old tree lay in so as to get the chain around the log, and when the log swung around it rolled back the moss like a blanket, and there on the ground I saw a round yellow thing, nine or ten inches across, with figures on it, and an arm across it, pointed at one end and blunt at the other. Alongside of it was a lump of rust that might have been chains or something like that, but I did not pick it up. I showed the compass to pa, and he put it on a stump a little way up the hill. Just then Captain Roverman (sic) came along to see how the work was going, and old Captain Cowley was with him. Pa showed them the compass and they took it away, and pa said they promised to give me \$10.00 for it, but I never got a farthing nor saw hide or hair of the compass since. Poor pa let them have it, but if I had got it up to the house, ma would not have given it to them that easy. The compass was lying about two or three rods from the edge of the creek. I never saw water enough in creek to float a canoe."

Considering that it was more than fifty years since Mr. Lee had found the astrolabe and that he had never seen it or any reproduction of it since, his description of the instrument, while not quite correct, is remarkably close to the reality, and does great credit to his memory, as well as giving his story the undoubted stamp of truth. It will be noticed that as a plain man making no pretence to book learning, Mr. Lee never ventures on the name "astrolabe," but always speaks of the instrument as a "compass." Sometimes in conversation, with a real feeling for style, to avoid iteration, he refers to it as "the item."

Captain Overman eventually gave the astrolabe to Mr. R. W. Cassels, of Toronto, president of the Ottawa Forwarding Company, but this priceless relic of the founder of Canada was so lightly appreciated by Canadians that it was permitted to leave the country, and in 1901 an American connoisseur, Mr.

Samuel V. Hoffman, of New York, added it to his large collection of astrolabes. It is still in Mr. Hoffman's possession, and to him I am much indebted for the photograph of it illustrating this article.

In comparison with the exquisitely finished instruments of precision carried by the modern explorer, Champlain's astrolabe is a very rough production. A careful description of it is given by Russell in his pamphlet already referred to. The instrument, which has the date 1603 engraved on it near the bottom, is of brass, and is of  $5\frac{3}{8}$  inches diameter. The metal is  $\frac{1}{8}$  inch thick at the top and increases to  $\frac{3}{8}$  inch at the bottom, the extra weight below being intended to give steadiness in use. A ring at the bottom, to which, Russell surmises, a weight was to be hung for additional stability on shipboard, was accidentally broken off before the astrolabe came into Mr. Hoffman's hands. The suspension ring at the top has a double hinge to ensure the instrument hanging plumb. (The fine statue of Champlain in Major's Hill Park, Ottawa, shows the great explorer holding his astrolabe upright in his hand, but this is an artistic license; in making an observation, the instrument was held suspended from the top.) The circle is divided into single degrees, and it was possible, as Champlain's observations prove, to determine latitude by aid of the instrument to within 15 minutes of a degree or even less.

Last October under Mr. Lee's guidance, I visited the place where the astrolabe was picked up. Lee had not been there for many years, yet he had no difficulty in finding the place, and the surroundings agreed accurately with the description he had given me two months before. Naturally, tremendous changes have taken place in the 300 years since Champlain and his men, heavily laden, "et plus greuz de mousquites que de leur charge," forced their way through the primeval woods. The sombre pine forest that then rolled unbroken over the ridges and valleys has long disappeared, and the somewhat hilly land is now laid out in well cultivated farms with clumps of hardwood bush here and there. Hardwoods grow to the water's edge around Green lake, except at its foot, where there are some old farm buildings, and a large sloping field, along the bottom of which the small stream that issues from the lake flows through alders and poplars. It was on the right bank of this "creek" a few yards from the water, and about 200 yards below the lake, that Lee found the astrolabe in the moss. There is no prominent object in the landscape to mark the exact spot, and where the instrument lay is now cultivated ground. But

to fix the position as nearly as may be, it should be noted that the slope of the field becomes a little steeper just here and forms a slight shoulder, and the stream begins a small deviation towards the south. The stream is not nearly large enough to navigate a canoe, and there is nothing to show that it was ever any larger. But its valley leads in an approximately direct line to Muskrat lake, and there is no doubt that Champlain and his party portaged

along it both for the guidance of the flowing water and because it was their shortest road.

In the preparation of this article I have to thank Mr. A. F. Hunter, secretary of the Ontario Historical Society, for bibliographical references and other assistance; and I am also under obligation to Mr. L. P. Sylvain, of the Library of Parliament, Ottawa, for ready permission to consult the Government's rare Canadiana.

## BIRDS OF NORTHERN SASKATCHEWAN AND NORTHERN MANITOBA COLLECTED IN 1914 BY CAPT. ANGUS BUCHANAN.

By J. H. FLEMING.

Almost the first knowledge we have of the ornithology of the Saskatchewan region is contained in a series of papers published in the *Ibis* of 1861-62-63, by Capt. Blakiston, who spent the winter of 1857-58 at Fort Carlton, on the Saskatchewan river, and in 1858 collected at various points in what is now the Province of Saskatchewan. In these papers Capt. Blakiston incorporated much information from Vol. II of the *Fauna Boreali-Americana* of Richardson and Swainson, and other published sources. Since then our knowledge of the birds of southern Saskatchewan has been constantly enlarged, but strangely enough the ornithology of the great region drained by the Churchill river and lying to the north of what was till 1912 the northern boundary of the province, has had little or no attention paid to it. Notes on its birds were made by James M. Macoun, who in 1888 travelled from Lesser Slave lake east by way of the Athabasca and Churchill rivers to Lake Winnipeg; these notes were eventually published by John Macoun in his "Catalogue of Canadian Birds." Less than a dozen birds are in the U.S. National Museum collected at Du Brochet lake in 1890, and Pelican Narrows in the Churchill river in 1891; probably collected by Henry MacKay, and Joseph Hourston for Roderick MacFarlane; these are the only skins I have seen from this region taken before 1914. During the years 1892-93-94, J. Burr Tyrrell in the course of his explorations of the Barren Grounds more than once traversed the Churchill river, and his official reports<sup>1</sup> contain the best description we have of this region; in these reports there are short references to birds. When Edward A. Preble wrote his great report on the Natural History of the Athabasca-Mackenzie region<sup>2</sup> he included all that

was known of the birds of the Churchill river up to 1908.

When the boundaries of Saskatchewan were, in 1912, extended north to include a part of the old Northwest Territory, so little was known by the Provincial Government of the natural history of the northern part of the country that Angus Buchanan determined to investigate the country lying between the Saskatchewan river and the Barren Grounds. He left Prince Albert on May 6, 1914, and descended the Beaver river to Lake Ile-à-la-Crosse, and the Churchill river, thence continuing upstream on Reindeer river, and Reindeer lake, entering the Cochrane river on July 18, and Lake Du Brochet on August 1. His base camp was made north of this lake, and here he proposed to winter, but hearing of the outbreak of the war in late October, he decided to return, reaching Regina on January 15, 1915, after an absence of eight and a half months, during which he travelled nearly two thousand miles by canoe and dog-sleigh. The birds collected during this expedition were divided, part were deposited in the Provincial Museum at Regina, and the rest handed over to me; they form a very important addition to our knowledge of the birds of the region drained by the Churchill river, and are in fact the first collection made in northern Saskatchewan.

After making a short report<sup>3</sup> of his trip, to the Provincial Museum at Regina, Mr. Buchanan returned to his home in Scotland, enlisted in the Legion of Frontiersmen (25th Royal Fusiliers) as a private, was sent to East Africa, and served throughout that campaign, rising to the rank of captain, and received the Military Cross, and on being invalided home requested me to prepare a list of the birds collected in 1914. I had already examined the birds in the Museum at Regina in 1915

<sup>1</sup>Annual Report, Geological Survey of Canada, VIII (new series) Part D, pp. 5D to 120D, Ottawa, 1896. *Ibid.*, IX, 1896, Part F (1897).

<sup>2</sup>A Biological Investigation of the Athabasca-Mackenzie Region. North American Fauna No. 27. Bureau of Biological Survey, Washington, 1908.

<sup>3</sup>Report of the Chief Game Guardian, 1914, pp. 33-34, 37-39, Regina, 1915

and I am indebted to Mr. H. H. Mitchell, of the Provincial Museum, Regina, for the loan of any that were needed for comparison. The data on the birds themselves is exceedingly full, and Capt. Buchanan has furnished me with a list of the specimens together with notes on the colors of the soft parts, food, etc., from this I have quoted when necessary, but excepting in three instances have not used the sight records, which will be given fully in a forthcoming book by Capt. Buchanan.

*Columbus holboelli*, Holboell's Grebe.

Set of five eggs taken on Churchill river, June 6; bird seen at close range.

*Gavia immer*, Loon, Great Northern Diver.

An adult taken on Reindeer lake, July 8.

*Larus brachyrhynchus*, Short-billed Gull.

An adult female taken on Reindeer lake, July 9; one more seen on same date; this is very far east for this gull. "Iris, clear blackish-grey; edge of eyelid surrounding eye, deep orange chrome; corners of mouth, pure orange chrome; feet, pale whitish-yellow." Dr. Oberholser regards this gull as a subspecies of *Larus canus*.<sup>4</sup>

*Larus delawarensis*, Ring-billed Gull.

A male taken on Ile-à-la-Crosse lake, May 23; adult except for the black primaries and terminal black band of the tail, probably a non-breeding bird. "Bill, medium dark greenish-yellow, with strong black ring around bill a short distance from tip; eyelids, and corners of mouth, deep orange-chrome; feet, pale greenish-yellow." Seventeen others seen with this bird.

*Larus philadelphia*, Bonaparte's Gull.

Four specimens, one adult male (thought by the collector to be a non-breeding bird), taken on the Cochrane river, July 20. "Iris dark; bill black; legs and feet, orange-chrome." One adult female, taken on Cochrane river, July 25, "Iris dark; eye-ring, dark crimson; bill, black; corners of mouth, reddish-flesh color; legs whitish orange-chrome; feet, more rich chrome." Two juvenile birds taken on Lake Du Brochet, Cochrane river, August 1, one of these, a female, is marked "Iris, dark; bill, medium dull blackish-grey; both mandibles dark from nostril out; legs, feet, and webs, whitish skin color with pale brown joints." This species is believed to breed in trees, and it is unfortunate in view of the young birds taken, that the nesting site was not found.

*Xema sabini*, Sabine's Gull.

Three seen and a pair of adults taken on Sandy lake, Churchill river, June 9; the female is marked "Iris, black; pure red eye-ring; bill, black to one-eighth beyond nostril, remainder of tip medium dull lemon yellow; feet, black."

*Sterna hirundo*, Common Tern.

A juvenile female with primaries not fully grown, taken on Cochrane river, August 14. Seen in company with parents and another young bird.

*Mergus americanus*, Merganser.

A male in very worn immature plumage, taken on the Churchill river, June 1. "Iris, dark; bill, medium deep crimson, crown of upper mandible, black; feet, bright orange-chrome."

*Mergus serrator*, Red-breasted Merganser.

An adult female taken on Lake Ile-à-la-Crosse, May 23. "Iris, clear deep umber brown; bill, all red except along crown of upper mandible which is dark horn-brown; legs and feet, rich reddish orange-chrome."

A downy young female, length 14.75 in., taken on the Cochrane river, August 15. "Iris, pale clear brownish sage-green; bill, blackish-brown over crown of upper mandible for entire length, except tip, sides of upper mandible and entire lower mandible pale dull buffish yellow; legs and feet, dull brownish-grey; webs, dull umber-brown. Bird in company with mother and about a dozen young."

Set of twelve eggs taken on rocky island in Reindeer lake, July 12. "Nest, found on ground concealed beneath ledge of rock; eggs almost hard on rock and rim of nest composed of small leaves and twigs profusely mixed with blackish-grey down."

*Nettion carolinense*, Green-winged Teal.

A pair taken on the Beaver river, May 18.

*Oidemia perspicillata*, Surf Scoter.

Three specimens, one adult male, taken at Lake Ile-à-la-Crosse, May 31; two adult females taken on the Reindeer river, June 30. "Flock of about twelve scoters together, all in pairs."

*Phalaropus fulicarius*, Red Phalarope.

A male taken on Sandy Fly lake, Churchill river, June 11.

*Steganopus tricolor*, Wilson's Phalarope.

Two specimens, an adult female taken on Crooked lake, May 13. "Bird alone, resting as if tired out, perhaps migrating." The other an adult male taken on the Beaver river, May 19. "Male and female together on floating weeds, on edge of small lake off Beaver river; birds in company with pair of Dowitchers and Lesser Yellow-legs."

*Gallinago delicata*, Wilson's Snipe.

Nest taken near Lake Ile-à-la-Crosse, May 31. "Four eggs, slightly incubated, nest of damp grasses on ground among low snow-berry bushes. Flushed bird off nest three or four times to-day and yesterday."

*Macrorhamphus griseus griseus*, Dowitcher.

Five specimens, a pair taken on Crooked lake, May 13, have been compared with a series of this form and of *M. g. scalopaceus*. Another pair

<sup>4</sup>Auk, XXXVI, 1919, pp. 83-84.



taken on the Beaver river, May 19, and a male on Lake Ile-à-la-Crosse, May 23.

*Pisobia fuscicollis*, White-rumped Sandpiper.

A female taken on Sandy lake, Churchill river, June 10, and a male taken on Sand Fly lake, Churchill river, June 11.

*Pisobia bairdi*, Baird's Sandpiper.

Four specimens, a female taken near Fort Du Brochet, Reindeer lake, July 17; and a male and two females taken on the Cochrane river, July 23.

*Pisobia minutilla*, Least Sandpiper.

Four specimens, a female, Reindeer lake, July 13. "Bird alone breeding on island, apparently had nest." A female taken July 29, and a pair taken on the Cochrane river, July 30.

*Pelidna alpina sakhalina*, Red-backed Sandpiper.

A female, Churchill river, June 8. "Shot on small stony island, in company with seven Semipalmated Sandpipers."

*Ereunetes pusillus*, Semipalmated Sandpiper.

Two pairs taken on the Churchill river, June 2, from a flock.

*Calidris leucophaea*, Sanderling.

Three specimens taken from a flock of four, Cochrane river, July 21; "probably non-breeding birds."

*Helodromus solitarius solitarius*, Solitary Sandpiper.

"A female with large egg in oviduct;" Beaver river, May 18.

*Actitis macularia*, Spotted Sandpiper.

Two adults, a male, Crooked river, May 15, and a female, Lake Ile-à-la-Crosse, May 23. Two sets of four eggs each, taken on the Churchill river, June 10 and 13, also a downy young taken on the Cochrane river, July 29.

*Charadrius dominicus dominicus*, American Golden Plover.

An adult female taken when in company with Kildeer Plover, on the Churchill river, June 2. "Eye, bill, and feet black."

*Oxyechus vociferus*, Kildeer.

Seen in company with the Golden Plover, but no specimens taken.

*Aegialitis semipalmata*, Semipalmated Plover.

Four specimens, a male, Lake Ile-à-la-Crosse, May 23; a pair, Cochrane river, July 23, and a female taken July 29, also on the Cochrane river.

*Arenaria interpres morinella*, Ruddy Turnstone.

Four specimens, a female found alone on Lake Ile-à-la-Crosse, on May 22; a male also found alone on the same lake on the 23rd; and two females taken from large flock on June 9, on the Churchill river.

*Canachites canadensis canadensis*, Hudsonian Spruce Partridge.

Eight specimens, six adults and two downy young.

A pair with nest and eggs taken at Lake Ile-à-la-Crosse, May 25; male not preserved. "Eggs, six in number, fresh; nest on ground close in at foot of alder bush; site, dry open poplar knoll, surrounded by dense spruce and tamarack swamp; nest of dry leaves, same as carpet of surrounding ground, a few feathers lining nest." A male, same locality, May 29. A female in moult, and a downy young, Reindeer lake, July 10, the female has pin feathers on the sides of the head, and new tail feathers are appearing. A downy young, Cochrane river, July 20, was with other young and female parent when taken. A male taken August 3, a female, August 4, and a male, August 7, all adults, Lake Du Brochet. The young could fly, though the first was only five inches in length.

*Lagopus lagopus lagopus*, Willow Ptarmigan.

One specimen, Fort Du Brochet, Reindeer lake, November 4. "Same day first Barren Land Caribou of the season were shot."

*Accipiter velox*, Sharp-shinned Hawk.

An adult male, Otter lake, Churchill river, June 20.

*Astur atricapillus atricapillus*, American Goshawk.

A female, and set of three eggs, Beaver river, May 16.

*Buteo platypterus*, Broad-winged Hawk.

Three specimens, a melanotic male, Crooked river, May 14, is chocolate brown except for the tail bars, which are normal; a male taken in same locality on the 15th, and a female taken on Beaver river, May 16.

*Haliaeetus leucocephalus alascanus*, Northern Bald Eagle.

An adult male, taken on the Churchill river, June 12; three downy young taken on Reindeer lake, two on the 7th and one on the 10th of July. These latter are marked, "Iris, dark amber brown; bill, dark horn color; cere, slightly more light brown, corner of mouth, pale whitish-yellow; legs and feet, whitish-yellow."

*Falco columbarius columbarius*, Pigeon Hawk.

Seven specimens, an adult female (two other birds seen), Reindeer lake, July 13; a female in company with four or five almost fully fledged young, three of which were taken, Lake Du Brochet, August 3; the young have wings and tail not fully grown and traces of down on the head; the old bird is in very worn plumage with one fresh blue tail feather, but showing no other signs of the blue plumage. Two fully fledged young birds (two others seen), Lake Du Brochet, August 7.

*Pandion haliaëtus carolinensis*, American Osprey.

Three specimens, a female, Crooked lake, May 13; a male, taken with nest, Lake Ile-à-la-Crosse, May 25. "Nest containing single egg on very top



of broken-off dead jack pine; nest mainly built of twigs, inside thickly lined with damp mud, grass and moss; fish scales on edge of nest; the male bird was bringing both talons full of damp moss to nest when shot." A female taken with nest and two eggs, Churchill river, June 6.

*Surnia ulula caparoch*, American Hawk Owl.

A male taken on Lake Du Brochet, August 1.

*Picoides arcticus*, Arctic Three-toed Woodpecker.

An adult male, Cochrane river, July 13; yellow crest, much worn, exposing the white bases of the feathers.

*Picoides americanus fasciatus*, Alaskan Three-toed Woodpecker.

An adult female, Fort Du Brochet, October 22.

*Sphyrapicus varius varius*, Yellow-bellied Sapsucker.

Two males, Big river, May 7 and 11.

*Colaptes auritus borealis*, Boreal Flicker.

One female, Cochrane river, July 21; the male seen. There is another adult female in the United States National Museum taken at Lake Du Brochet, September 26, 1890. This form is included in the range of *luteus* in the A.O.U. Check List.

*Sayornis phoebe*, Phoebe.

A male, Reindeer river, June 30.

*Nuttallornis borealis*, Olive-sided Flycatcher.

Two males, Lake Ile-à-la-Crosse, May 27 and 28.

*Empidonax trailli alnorum*, Alder Flycatcher

Three specimens, a male, Churchill river, June 6; two from the Cochrane river, July 27 and 28, the latter a female. All taken in willows at edge of marsh.

*Empidonax minimus*, Least Flycatcher.

A female, Lake Ile-à-la-Crosse, May 29, and a male, Reindeer river, June 28.

*Perisoreus canadensis canadensis*, Canada Jay.

One immature bird, Reindeer lake, July 11, is somewhat difficult to place; it compares well with one of about the same age from 40 miles southwest of Calgary, Alberta, August 4, 1895; and is not so dark above as a younger bird from near Latchford, Ontario, June 10, 1906. Preble refers to a breeding bird from Pelican Narrows, Churchill river, in the United States National Museum,<sup>5</sup> and in fact Reindeer lake is well within the known range of *canadensis*.

*Corvus corax principalis*, Northern Raven.

Five specimens; three from Churchill river; a young bird taken from the nest, June 2; an adult female, June 18, and a young bird fledged and in company with parent and two other young; two adult males taken December 15, one on Lake Du Brochet, the other on Reindeer lake.

*Corvus brachyrhynchos* subsp? American Crow.

An immature female taken on the Reindeer river, June 29; this bird compares well with a breeding female from Craven, Saskatchewan, much better than it does with Ontario birds, and may better be placed with the Western Crow, *C. b. hesperis*, but owing to lack of material of comparable age I hesitate to do so.

*Euphagus carolinus*, Rusty Blackbird.

Three specimens from Lake Du Brochet, August 7, an adult male, "Iris, clear yellowish-white," an immature (female?) "Iris, medium clear umber brown;" and an immature male, "Iris, pale sage green."

*Carpodacus purpureus purpureus*, Purple Finch.

Two adult males, Big river, May 9; a female seen with these.

*Acanthis linaria linaria*, Redpoll.

Three specimens, an adult male with rosy breast, Cochrane river, July 21, "Bird in company with one young; bill, dark brownish." Two males, an adult and young, Lake Du Brochet, August 10; "bill, flat black" in the young.

*Plectrophenax nivalis nivalis*, Snow Bunting.

One specimen, Reindeer lake, October 23. "Large flocks of these birds for the past fortnight."

*Passerculus sandwichensis* subsp? Savannah Sparrow.

Three specimens, one from Lake Ile-à-la-Crosse, May 27; an adult male from Fort Du Brochet, July 17; and a juvenile female, Cochrane river, July 28. These are very dark birds, much more so than *alaudinus* should be, and very different from the light race that breeds in southern Saskatchewan which is, no doubt, *nevadensis*.

*Passerberbulus lecontei*, Leconte's Sparrow.

Two specimens, one of a pair, Churchill river, June 2; a male, Haultaine river, June 6. "Birds breeding here."

*Zonotrichia querula*, Harris's Sparrow.

Seven specimens, an adult female, and a juvenile male, Cochrane river, July 26; an adult male, Cochrane river, July 30. "Male and female with fledged young." A female and young bird, Cochrane river, July 31; a female, Cochrane river, August 3. "Bird in company with others, probably her fully fledged young." An adult female, Lake Du Brochet, August 6. Adult's "bill, dull senna brown," juvenile's, "bill blackish-brown, yellow along edges of mandibles and at corners of mouth." So little is known of the early plumages of this sparrow that a description of the young of July 31, may not be out of place: length 3.75 in., pileum with feathers brownish-black, indistinctly edged with grayish-buff, producing a dark crown with a few grayish-buff spots; throat and chin grayish-buff, throat with a

<sup>5</sup>North American Fauna No. 27, 1908, p. 402.

few blackish-brown spots; chest brownish-buff streaked with brownish-black; flanks buff with brown streaks, rest of under parts buffy-white; above brown streaked with black, upper tail coverts brownish-buff tail darker than in adult; wing coverts tipped with buff.

*Zonotrichia leucophrys gambelii*, Gambel's Sparrow.  
Three specimens, an adult male and a juvenile male, Reindeer lake, July 16; and a young male, Cochrane river, July 26.

*Spizella monticola monticola*, Tree Sparrow.

A male, Reindeer lake, July 11. "Two pairs breeding on an island, first seen on trip." A female, Fort Du Brochet, July 17. "Bird had young almost fully fledged."

*Spizella passerina passerina*, Chipping Sparrow.

A male, Lake Ile-à-la-Crosse, May 27.

*Melospiza melodia melodia*, Song Sparrow.

A pair, Reindeer river, June 28.

*Melospiza lincolni lincolni*, Lincoln's Sparrow.

A male, Reindeer river, June 29.

*Melospiza georgiana*, Swamp Sparrow.

A male, Churchill river, June 6. "Small colony of these birds breeding at this place."

*Passerella iliaca iliaca*, Fox Sparrow.

Four specimens, all males, one Reindeer lake, July 11; three, Cochrane river, July 18 and 24, and August 3. The July 24 bird was carrying food to fledged young.

*Petrochelidon lunifrons lunifrons*, Cliff Swallow.

Two females, Churchill river, June 9; a pair, Cochrane river, August 6, fully fledged young in company with these last.

*Iridoprocne bicolor*, Tree Swallow.

Two specimens, a female, Crooked river, May 15; a young male, Lake Du Brochet, August 6. Two sets of eggs taken on the Churchill river, June 11; nests in old woodpecker holes in dead poplars.

*Riparia riparia*, Bank Swallow.

A male, Sandy lake, Churchill river, June 9.

*Bombicilla garrula*, Bohemian Waxwing.

Two specimens from Cochrane river, a juvenile male taken July 28. "Iris, dark, not reddish-brown, like adult." An adult female, July 30.

*Bombicilla cedrorum*, Cedar Waxwing.

A male, Key lake, June 25.

*Lanius borealis*, Northern Shrike.

A male, Cochrane river, October 19.

*Vireosylva olivacea*, Red-eyed Vireo.

A male, Dead lake, Churchill river, June 17.

*Lanivireo solitarius solitarius*, Blue-headed Vireo.

A male, Lake Ile-à-la-Crosse, May 28.

*Mniotilta varia*, Black and White Warbler.

A male, Beaver river, May 17.

*Vermivora peregrina*, Tennessee Warbler.

Three males, two from Lake Ile-à-la-Crosse, May 27, and June 2, one from Dead lake, Churchill river, June 17.

*Dendroica aestivo aestiva*, Yellow Warbler.

Two males, one Lake Ile-à-la-Crosse, May 27, the other Reindeer lake, July 4; this latter is only a little more worn than the May bird.

*Dendroica coronata*, Myrtle Warbler.

Three specimens, two adult males, from Big river, May 7 and 8; a juvenile, Cochrane river, July 27. Hoover's Warbler, *D. c. hooveri* has recently been revived by Dr. Oberholser and the range of this western race of the Myrtle Warbler is given as reaching east to central Mackenzie, but the adult taken May 8, which I have been able to compare with a series of both the supposed races; is nearer to *coronata*.

*Dendroica striata*, Black-poll Warbler.

A male, Beaver river, May 18.

*Dendroica palmarum palmarum*, Palm Warbler.

A male, Beaver river, May 18.

*Sciurus noveboracensis noveboracensis*, Water-Thrush.

Three specimens, a female, Beaver river, May 20; a male, Knee lake, Churchill river, June 6; and a female, Reindeer river, June 28. These are close to Grinnell's Water-Thrush, *S. n. notabilis*, in color.

*Wilsonia pusilla pusilla*, Wilson's Warbler.

A male, Lake Ile-à-la-Crosse, May 26.

*Sitta canadensis*, Red-breasted Nuthatch.

A male, Lake Ile-à-la-Crosse, May 25.

*Penthestes hudsonicus hudsonicus*, Hudsonian Chickadee.

Three specimens, a pair taken at Big river, May 8; and a young bird, Cochrane river, July 24. This last is interesting though full-grown (length 5 in.), the pileum instead of being soft grayish-brown is blackish-brown, forming a distinct cap, while the hind neck and back are brownish-gray.

*Regulus calendula calendula*, Ruby-crowned Kinglet.

Three specimens, a male, Lake Ile-à-la-Crosse, May 28; a female taken with nest containing young, Churchill river, July 3; and a male taken, Reindeer lake, July 9. The nest taken July 3 is described as follows: "Nest in young spruce tree about ten feet high, nest against limb and about eight feet up. Nest contained seven young, about fourteen days old."

*Hylocichla aliciae aliciae*, Gray-cheeked Thrush.

Two males, Big river, May 11; Churchill river, June 18. This latter is in very worn plumage. "Bird in company with mate."

*Hylocichla ustulata swainsoni*, Olive-backed Thrush.

Two males, Ile-à-la-Crosse, May 25; and Black Bear island, Churchill river, June 14.

*Hylocichla guttata pallasii*, Hermit Thrush.

A male, Beaver river, May 18.

## RANDOM BOTANICAL NOTES.

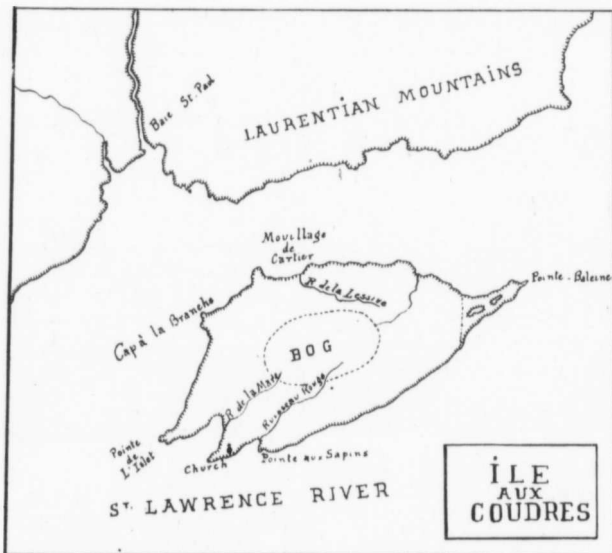
## III. ISLE-AUX-COUDRES, QUE.

BY BRO. M. VICTORIN, LONGUEUIL COLLEGE, QUE.

For the purpose of furthering phytogeographical researches bearing upon the semi-halophytic section of the St. Lawrence river, and with the special aim of collecting specimens of *Carex* for monographical work, we alighted by noontide on June 22, 1917, on the Baie St. Paul wharf; our plant-press and other botanical outfit, though not imposing too much on the sturdy shoulders of the natives, nevertheless excited their curiosity to the utmost.

ically and botanically. We have given elsewhere<sup>1</sup> the impressions gathered from that quaint romantic spot which has preserved to an almost incredible degree, the language, customs and traditions of the 17th century and which, moreover, retains the most remarkable originality of not being spoiled by tourists. The following lines intend only to record briefly the botanical data collected.

Isle-aux-Coudres is of about fifteen miles' cir-



Like most of the members of the botanical fraternity, we have never succeeded in making clear to the average guide, driver or paddler, the point of view of the botanist. Notwithstanding this failure and through the good offices of François Bouchard, we crossed the channel and landed on Isle-aux-Coudres towards four o'clock. At the west end of the island, there is no other sort of wharf than François Bouchard's back, but this is as sure as a cantilever bridge. One who takes a strong hold about the fellow's neck crosses the wide expanse of mud and *Fucus* stretching at low tide between the water and the shore proper without injury to his boots.

A full week was spent visiting the island histor-

cumference and lies in the course of the St. Lawrence river about fifty miles below Quebec city. Though the inspection of a map would make one think that it belongs to the north shore, from which it is separated only by a relatively narrow channel, yet, like most—probably all—of the St. Lawrence islands it is on the southeastern side of Logan's fault, and is really a detached part of the south shore, showing the same inclined strata of shale and limestone as the near-by Cambrian Sillery of L'Islet. The whole island is an upland of from 50 to 100 feet elevation surrounded by a narrow alluvial

<sup>1</sup>Fr. Marie-Victorin, *Croquis laurentiens: Isle-aux-Coudres*. Le Parler Français, Vol. XVI, No. 4, pp. 164-171. 1917.

prairie. The centre is slightly depressed and occupied by an extensive bog which suggests that the place was, in geologically recent times, somewhat atoll-shaped. The river waters are decidedly fresh, less so at the lower end. The wave action—very powerful, save on the northern side sheltered by the high Laurentian cliffs of the mainland—has produced a noticeable bar of sand and gravel behind which has developed a continuous lagoon generally transformed into a marsh by the invasion of halophytes.

The leading plant in this particular habitat is the polymorphic *Carex acuta* L. (= *C. goodenoughii* J. Gay); the abundant rhizomes form a felted entanglement about as troublesome to farmers as the familiar couch grass. It is locally called "teigne," a very expressive word with the French Canadians, indicating something not easy to get rid of. Various sedges and flowering plants help *C. acuta* in filling the lagoons: *Carex recta* Boott, *Carex canescens* L., var. *disjuncta* Fernald, *C. Tuckermanni* Dewey, *C. crinita* Lam., *C. maritima* Müell., *Caltha palustris* L., *Spathyema foetida* (L.), Raf., which occurs also in dry ground, *Menyanthes trifoliata* L., *Taraxacum officinale* Weber, var. *palustre* (Sm.) Blytt., *Cardamine pennsylvanica* Muhl., *Pedicularis palustris* L., *Sisyrinchium angustifolium* Mill., *Galium palustre* L., *Triglochin maritima* L. *Myosotis laxa* Lehm., and true *Viola cucullata* Ait., a name regarding which there has been some confusion in recent years.

No botanist would neglect a favorable opportunity to visit a northern bog. So, we started one fine morning with a party of barefooted youngsters roused to a high pitch of enthusiasm by trout prospects in the "Rouisseau Rouge." "Rouisseau Rouge," which derives its name from the dark color of the acid waters, is a brook discharging the bog waters into the St. Lawrence.

The Isle-aux-Coudres bog does not seem to differ materially from those of Rimouski and Temiscouata. As far as we have been able to see there is no free water in it. At this early season the water table was so high that we were able to inspect only the outer zone. With the usual *Kalmia augustifolia* L. *Kalmia polifolia* L. and *Ledum groenlandicum* Oeder, we were glad to see for the first time the fine flowers of *Rubus Chamaemorus* L. The amber-colored fruits are known everywhere in this district as "blackbières" an obvious corruption of the English word "blackberry." All those who have seen the ripe fruit of this plant will, no doubt, wonder at such a linguistic feat.

The genus *Carex* is always worthy of investigation in northern bogs. Here were found *C. trisperma* Dewey, a small form of *C. pauciflora* Lightf., and a new variety of *C. paupercula* Michx., which

Mr. M. L. Fernald of the Gray Herbarium has recently described<sup>2</sup> as follows:

"*Carex paupercula* Michx., var. *brevisquama* n. var., squamis 3-4 mm. longis perigynium subaequantibus. Scales 3-4 mm. long, about equalling the perigynium. Quebec: Isle-aux-Coudres, Charlevoix Co., June, 1917, Bro. M. Victorin, No. 4021 (type in Gray Herbarium).

Remarkable for its very short scales which give the plants a distinctive aspect, the long acuminate scales of typical *C. paupercula* being 5-8 mm., in length and much exceeding the perigynium. M. L. Fernald, Gray Herbarium."

The departure from the typical form is indeed striking and in the light of more abundant material might prove specific. The plant grew in a dense mass forming a small tussock.

Mr. M. L. Fernald had already made a detailed study of *C. paupercula* and its allies,<sup>3</sup> indicating clearly that the plant described by Michaux<sup>4</sup> is in reality a northern extreme of the *C. irrigua* of J. E. Smith.<sup>5</sup> Consequently, Michaux's name has priority. Furthermore, Michaux's plant, collected at Lake Mistassini has been shown to be of restricted boreal distribution, the species being represented southward by three distinct variations which may be summarized as follows:

#### CAREX PAUPERCULA AND ALLIES.

Pistillate spikes short-oblong, 4-10 mm. in length.

Pistillate scales 2-3 times as long as the perigynium.

##### 1. *C. paupercula*.

Pistillate scales about equalling the perigynium.

##### 2. *C. paupercula* var. *brevisquama*.

Pistillate spikes cylindric, 10-18 mm. in length.

Pistillate scales dark, castaneous; culms glabrous.

##### 3. *C. paupercula* var. *irrigua*.

Pistillate scales green with brown border; culms scabrous.

##### 4. *C. paupercula* var. *pallens*.

*Carex paupercula* Michx.—Northern Quebec; Lake Mistassini and the Shikshocks Mountains of Gaspé.

*Carex paupercula* Michx., var. *brevisquama* Fernald—Quebec; known only from the type locality, Isle-aux-Coudres.

*Carex paupercula* Michx., var. *irrigua* (Wahlemb.) Fernald—Boreal and alpine Europe, subarctic regions and cold bogs of America: Quebec, Ontario, Nova Scotia, Massachusetts, Pennsylvania, Utah.

*Carex paupercula* Michx., var. *pallens* Fernald—Nova Scotia, Maine, New Hampshire, Massachu-

<sup>2</sup>Rhodora XX: 152, 1918.

<sup>3</sup>Rhodora VIII: 73, 1906

<sup>4</sup>Flora Boreali-Americana II: 172, 1803.

<sup>5</sup>Hoppe, Caric. Germ.: 72, 1826.

setts, Connecticut, New York, Michigan, Vermont, Minnesota, British Columbia, Ontario.

To finish with the sedges, we will mention *C. stipata* Muhl., *C. brunnescens* (Pers.) Poir., and *Carex angustior* Mackenzie found here and there on the island, giving a total of thirteen species met with—a rather small number.

In June very few grasses are suitable for collecting and only *Poa pratensis* L. and *Poa alsodes* Gray were gathered.

Among early-flowering genera, the often associated *Viola* and *Antennaria* hold an important place. The collection of true *Viola cucullata* Ait. in damp ground has already been mentioned. In the woods outside the bog zone, *Viola renifolia* Gray, var. *Brainerdii* (Greene) Fernald, is abundant. On shaded ledges near the water, *Viola septentrionalis* Greene was growing profusely with the snow-white *Antennaria canadensis* Greene. No other *Antennaria*—not even the ubiquitous *A. neodioica*—was detected on the island.

Nobody who has read the history of this country can leave Isle-au-Coudres without paying a visit to Cap à La Branche where in the times of Wolfe, Nicette Dufour and François Savard captured the grandson of Admiral Durrell. Cap à La Branche is naturally but a low cliff covered with bushes and with a few white cedars which are supposed to have been Dufour and Savard's hiding-place—a snug one indeed. A brooklet runs down and supplies sufficient moisture to induce a gorgeous growth of *Saxifraga virginensis* Michx. and *Draba arabisans* Michx.

At the Pointe-de-L'Islet, on exposed ledges facing the sea, the short grass was strewn with the innumerable white flowers of *Cerastium arvense* L., and the strict rose-tinted inflorescences of *Arabis brachycarpa* (T. and G.) Britton.

Close observers have already remarked that the older settlements in Quebec exhibit unusual floristic features which should be attributed to historical factors. The first settlers, the missionaries, the "Médecins du Roi," the nuns, were far from being *minus habens* and the gardens inside the palisade usually contained the best drug plants in favor at the time. When cultivation happened to cease on that particular spot, the plants had very often gained a strong foothold and were able to persist for centuries. A striking example of this is the abundance and persistence to date of *Serapias helleborine* L., on Mount Royal, Montreal Island, the only instance of an introduced orchidaceous plant that I know of.

On Isle-aux-Coudres we have observed an extraordinary abundance of Boraginaceae: *Echium vulgare* L., *Cynoglossum officinale* L., *Echinosper-*

*mum Lappula* Lehmm. *Myosotis laxa* Lehmm., *Lithospermum arvense* L. and others. The peculiarity can be noted about Quebec city and Mr. M. L. Fernald finds the same to be true of the old Gaspé settlements.

*Hyoscyamus niger* L. which we found rooted in the beach gravels on the southern side is evidently another introduction traceable to the drug-garden of early days. Singularly enough our field experience with this plant in Quebec has shown it to occur mainly on island beaches of historical fame: Il: des Soeurs (Chateauguay), Ile Sainte-Hélène (Montreal), Isle-aux-Coudres. Moreover, it has been noted that this weed introduced into New England by early settlers and recorded there as far back as 1672, has almost completely disappeared. It is a remarkable fact, adds Mr. M. L. Fernald,<sup>6</sup> that in Quebec, all along the St. Lawrence river, it is maintaining its own and its weed-character.

*Tragopogon pratensis* L. is common about buildings at Isle-aux-Coudres. It seems to be an introduction of the same class. The only other locality I know of in Quebec is about the base of Beloeil Mountain where it thrives in the old orchards.

Owing to the lack of sodium chloride in the surrounding waters the halophytes are few. *Fucus vesiculosus* L., however, is very abundant on the slanting rocks of the tidal shores, and is almost wholly relied upon as a fertilizer for potato fields. A scanty colony of *Cañile edentula* (Bigel) Hook., and a few bluish rosettes of *Mertensia maritima* (L.) S. F. Gray, were found among purpose offal at the Pointe-de l'Islet.

We have as yet said nothing of the trees and shrubs; these have intentionally been kept for the end. The first thing a botanist is likely to look for when setting foot on Isle-aux-Coudres is the Hazelnut (*Corylus rostrata* Ait.) from which the place (*l'ysle ès Coudres* of Cartier) has derived its name. And yet, we have searched in vain for it all around. My friend, Jean-Baptiste Desgagné—a most important man, simultaneously farmer, postmaster, captain and sexton—informs me that he faintly remembers having seen one small bush in his youth . . . but he is not sure! There is some difficulty to reconcile this fact with Jacques Cartier's assertion which runs thus: . . . *et entre autres il y a plusieurs coudres franches fort chargées de noisilles aussi grosses et d'une meilleure saveur que les nôtres, mais un peu plus dures. Et par cela nommasmes ysle-es-coudres.*<sup>7</sup>

Abbé Casgrain, presumably solely on Cartier's authority reasserts the same: "Comme au temps

<sup>6</sup>Fernald, M. L., Notes from the Phaenogamic Herbarium, I. *Rhodora* XII: 191, 1910.

<sup>7</sup>Cf. Brief récit et succincte narration, etc., of Cartier, 1545. Manuscript in the British Museum.



*jadis, cette plage est encore pleine de beaux et grands arbres de plusieurs sortes, et il n'y a qu'à étendre la main pour cueillir sur les coudres franches, les grappes de noix.*"<sup>8</sup>

Cartier's landing place, the so-called "Ruisseau à la lessive" is yet in its natural state, and it is very hard to believe that ecological conditions have changed enough in four centuries to expel the hazelnut from the island. Were it not for the express mentioning of the fruits, our opinion would be that Cartier was simply mistaken as to the identity of the shrub, and that his hazelnut was nothing else than the Common Northern Alder [*Alnus incana* (L.) Moench] which is very abundant in the damp places about "Ruisseau à la lessive." The European Hazelnut is taller than ours and in this respect much like our Alder.

The sloping gravels that lead from the tableland to the beach are occupied by an association of trees and shrubs very likely—as hinted above—in their natural state. At the time of our visiting the white corymbs of a thorn (*Crataegus flabellata* (Bosc.) K. Koch.) were to be seen all over together with the ripe catkins of *Salix rostrata* Richardson var. *luxurians* Fernald. Others were *Nemopatheles mucronata* (L.) Trel., *Amelanchier sanguinea* (Pursh) DC. var. *gaspensis* Wiegand, and the northern variety of the Balsam Poplar (*Populus balsamifera* L., var. *Michauxii* Henry). This interesting tree exhibited its peculiar short cordate leaves.

Pointe-à-la-Baline, the lower end of the island,

<sup>8</sup>Casgrain, Abbé R. H., Excursion à l'Île-aux-Coudres.

is occupied by a flat and low gravel barren where only isolated patches of *Juniperus siberica* Burgsd., and stunted white spruce have been able to maintain their own. Not a blade of grass, not a weed, not a dandelion. The dwarfed trees assume the peculiar short conical shape and the densely felted habit observed on Anticosti. Sometimes the lower branches have developed and lie flat on the ground, and in a few instances, the tree, after ending in a point spreads anew giving to the whole the appearance of two superposed trees. This restricted growth and accompanying modifications is no doubt due to the continuous stress of the prevailing wind, the well-known *nord-est* of the lower St. Lawrence region.

One of the most puzzling things we collected during our short stay at Isle-aux-Coudres was a striking seminal variation of the Sugar Maple (*Acer saccharum* L.) It is known as distinct by the natives and Mr. Desgagné calls it "*Erable blanche*." There is a grove of these trees at the Pointe-aux-Sapins, past "Ruisseau Rouge" and not far from the church. While taking a walk over there after supper in search of sunset effects, we noticed the peculiar appearance of the thin leaves, glaucous underneath some of which are perfectly three-lobed, and the remarkable fruit with wings curving inwards. The tree is clearly the var. *glaucum* of Sargent in its essential characteristics. We do not think it is necessary, however, in the absence of material from somewhere else, to impose upon the plant a new name, as it may be but a freak of a teratological instance.

## NOTES AND OBSERVATIONS.

BREEDING OF MOURNING DOVE NEAR OTTAWA, ONTARIO.—On the afternoon of July 3, 1919, it was reported to me that a Passenger Pigeon was nesting in the orchard of Mr. R. T. Richardson, of Woodroffe Farm, near Britannia. I went out in the evening and Mr. Richardson showed me the nest, on a horizontal branch of an apple tree, on the northeast side, about six feet from the ground. The bird remained quietly on the nest and allowed us to examine her from all sides, first from a distance with field glasses, and later from a distance of only three or four feet. The bird had the typical light buffy grayish head and neck, with paler throat, and a small dark spot on each side of the head; wings with some dark spots—an undoubted specimen of the common Mourning Dove, *Zenaidura macroura carolinensis* (Linnæus). The lack of slaty blue on head and upper throat and the small size easily proved that the bird was not the Pas-

senger Pigeon. The Mourning Dove is rare this far north in the east, although it ranges well to the northward in the prairie provinces. Mr. Richardson said that the dove had been sitting on eggs for about two weeks, and when she finally fluttered off to the ground and away over the grass, we saw two blackish pin-feathered squabs on the scanty platform of a nest. The Passenger Pigeon is now believed to be extinct, but all of the many supposed occurrences of this species which have been investigated carefully have proved to be Mourning Doves. The two species have a general resemblance to each other, in shape, color, and proportions, and may be confusing when seen alone. The observer who will remember that the Mourning Dove averages only about 12.5 inches in total length while the Passenger Pigeon averages 17.0 inches as well as being fully twice the bulk of the former

species, as well as the distinctive color differences mentioned above, need make no mistake.

Mr. Richardson stated that he had caught as many as eighteen pigeons in a net at one time in the early days near Ottawa, and that the pigeons would soon clean up a field of peas, alighting along the rows and rapidly moving along, making short flights over each others' heads as soon as the spot was cleared of peas.

R. M. ANDERSON.

BACHMAN'S SPARROW AN ADDITION TO THE CANADIAN FAUNA.—One does not often have an opportunity of making an addition to the list of birds found in Canada, but when such an accomplishment is sought, the best place for the focus of effort is Point Pelee, where there is the maximum of chance to get southern stragglers. In the Bird Book, at Camp Coves, the headquarters of ornithological enthusiasm at the Point, there is a list of the species not yet recorded there, but regarded as among the immediate probabilities. In that list along with Pine Grosbeak, Red-bellied Woodpecker, Carolina Chickadee, and others, stood the name of Bachman's Sparrow, but on April 16, 1917, that name was erased. On that day, as the writer in company with Prof. J. W. Crow, was examining a lot of shrubbery at the north end of Mr. Langell's large orchard, our ears were met with a peculiar trilling song divided into two periods, the first at a lower pitch and much more rapidly delivered, than the second. The difference in pitch was one-fifth, and the speed of the first phrase was almost exactly twice that of the second. Neither of us recognized the song, and we were delighted on shooting it to find that we had the first Bachman's Sparrow to be recorded for Canada. The bird was a male and measured as follows: length 154 mm., wing 65, tail 63, tarsus 18. Records for northern Ohio are scanty, but there is a recent one for a locality opposite Point Pelee, recorded, I believe, in the Wilson Bulletin. The specimen is number 4140 in my collection.

W. E. SAUNDERS.

THE STATUS OF BEWICK'S WREN IN ONTARIO. The record of occurrence of this species in Ontario is brief and the number of observers concerned still briefer. It has been regarded as strictly casual, and the following statement of our knowledge of it

is made with the hope of changing the present estimate.

The first specimen was taken by the writer on Dec. 12, 1908, about 25 miles west of London. The day was fairly mild, with a little snow on the ground, and the wren was found in the roots of a fallen tree, busily hunting for food. Recognizing it as an unusually dark wren, it was collected with the hope of gaining some knowledge about the family. When it proved to be a Bewick's a new species for Canada, interest was increased, but further search was unproductive until on April 24, 1909, one was heard singing, and was collected, from a tree immediately beside the "shack" at Point Pelee. The addition of another specimen on the 26th, from a different part of the Point, was the first real hint received that the bird was anything but a casual. Then our knowledge stood still for years. Stories came to our ears of large dark wrens, seen near the edge of the marsh in the winter and there was always the surmise that one of these might be taken, and prove to be a Bewick's, thereby supporting the idea that it was a regular inhabitant of the province. That hope has not been realized, and the identity of those so-called marsh wrens, wintering at the Point, is still a mystery. But on April 1, 1917, another Bewick's Wren was seen and heard to sing within 25 yards of the house. The next day, Sunday, he was still around, and on Monday came the great event in the world of wrens, when we saw and heard no less than five birds, and felt that we would not be too destructive in taking one of them, which we did.

Our experience at the Point is that every so often (a phrase that succinctly expresses the exactness of our knowledge in the matter) there comes a day when some species has its day of migration. We have seen the days of Bluebirds, Blue Jays, male Marsh Hawks, Black Poll Warblers, etc., and, here, at last, seemed to be the day of Bewick's Wren. Five in one day of a species of which all the previous years had disclosed but three, was truly a great number, and tells in terms not to be denied, that Bewick's is a regular resident of Ontario, whose exact domicile in summer is yet to be disclosed. Time alone will tell if this theory is correct, and it may easily prove that the instance is one of varying abundance, so often exhibited in the case of species studied at or near their northern limit.

W. E. SAUNDERS.

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