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SEPTEMBER, 1900.

VOL. XIV, No. 6

THE OTTAWA NATURALIST.

Published by the Ottawa Field-Naturalists' Club.

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THE OTTAWA NATURALIST.

VOL. XIV.

OTTAWA, SEPTEMBER, 1900.

No. 6.

AN ORNITHOLOGICAL INCURSION INTO FLORIDA, FEBRUARY, 1900.

By W. E. SAUNDERS.

To the casual northerner Florida is Florida, a land of oranges and palms, but the tourist finds that his ticket, which is for Jacksonville, lands him at almost the northernmost and least interesting part, and that to reach a truly tropical zone he must travel at least 200, and better 300, miles further down the coast at a cost of four cents a mile each way. When that is done, he finds the Florida of the guide books, but for at least 175 miles south of Jacksonville the orange industry has been killed by the annually recurring frosts, and the vegetation of the tropics is absent.

The extreme dampness of the atmosphere on the Atlantic coast is best illustrated by the growth of the most interesting fern of the country, the Hoary Polypody, *Polypodium incanum*. Although the house-roofs have not a steep slope, and the sun must be nearly vertical for part of the year, yet the northern half of the roofs of most of the older houses in St. Augustine was covered with this fern, growing in the moss which seemed to find an easy lodgment there. Floridians call it the Resurrection Fern, from its habit of curling up and exposing the hoary back of the frond in dry weather, and reopening flat and green on the return of dampness. In the woods of this moist climate the Live Oak, *Quercus virens*, attains an enormous spread of branches. I frequently walked twenty paces from the trunk to the tip of a long branch which would not rise more than twenty-five feet from the ground. This would give a total diameter of 120 feet, about double the height of the tree, and greater than that of most of the forest trees

of Ontario. These long limbs were thickly covered with the Hoary Polypody, and occasionally one would find the native orchids of the genus *Epidendrum* mingled with it. This fern did not appear to grow freely on any tree except the live oak, while its larger relative, *Polypodium aureum*, was found solely on the tall Palmettos, and always at a height of at least ten feet, and the ease with which short wet moss rubs off on one's trousers is a great discourager of climbing, consequently we failed to get a good specimen of this fern.

The winter visitor meets with very many familiar birds, and some few strangers in considerable numbers, but the conditions are so different to those in the north that it takes one some time to become facile in the hunt. Ninety-nine one-hundredths of the interior of Florida, as we saw it, is either open water, cypress swamp or pine barrens; that is to say, the dry land, with practically no exception, is pine barrens; and the name is well chosen. Occasional Live Oaks, Black Jack, and scrub Palmetto form the only break in the woods, and the almost absolute bareness of the soil is oppressive to a northerner. No grass, no weeds, no shrubs, no ferns—none of the thrifty upland growth of the north meets the eye.

Then where are the birds? Well, after sufficient search we find that they are mainly in the villages, where the plant growth is more varied and the food supply more abundant. In the streets of Tarpon Springs, on the Gulf coast, we could hear and see all day troops, couples and singles of the Florida Purple Grackle, and of the Boat-tailed Grackle, singing from the shade trees, feeding in the roads and in the yards, but in three weeks I did not get one chance to collect a single specimen of the Purple Grackle, and only one Boat-tail, very close to the town. This latter is a most amusing fellow. His song defies description. Some clear notes that might belong to a thrush, some grackle-tones, and a large variety of chuckles, crackles and grunts which are peculiarly his own, surprise and delight his new acquaintance. The male, while not really much larger than our Bronzed Grackle, looks so on account of his long tail, and at first sight one hesitates to recognize the female as a

Grackle at all, so light is her colour, which resembles the tint of the female Cowbird, but is lighter and browner. The Florida Purple Grackles are elegant birds, slightly smaller than our Bronzed Grackle, but so tame and so common in some towns, and with such a brilliant iridescence reflecting the rays of the bright sun, that one is moved to think that there are few handsomer birds.

It was at Tarpon Springs, too, that we met the little Ground Dove—a true dove in manners, grace and habits, but just about the size of the Shorelark. There we found them, with the Mourning Dove (also common), feeding with bunches of Grackles, Mocking Birds and Towhees in the streets, and we all thought them one of the most charming of our new acquaintances. When they flew, the inner wing feathers displayed a bright brick red colour, contrasting vividly with the greyish fawn of the rest of the bird. It was truly ludicrous to see this little fellow, thinking evidently that he was a real pigeon, walking along with the stately and graceful dove-step, and nodding his head with each footstep.

Of all the birds I have seen, none stay on the wing so continuously and with such superlative ease as the Vulture. Regardless of wind, regardless of rain, regardless of sun, they could be seen at all hours of the day from about 8 a.m. to 5 p.m., soaring without a flap of the wing; sometimes singly or in couples, sometimes in groups of twenty or thirty, and when such a company appeared every onlooker was forced to admire their grace and beauty—at a distance. Both kinds, the Black Vulture and the Turkey Vulture were common at most points. They alight on the shade trees, on the houses, and even in the back yards, showing scarcely any fear of man, and they certainly do a most useful work in this hot climate where many of the inhabitants are too indolent to take the first step towards keeping their premises clean. The peculiar position occupied by these most useful scavengers, who are said to clean up all the back yards of Florida, is well illustrated by the following occurrence.

In Tarpon Springs I said to a little girl, "See, what bird is that?" "That aint a bird, that's a buzzard," came the reply.

Driving on the ocean beach in the Indian River district, I saw

some dark objects far ahead. Turning my glass on them I saw, that one was an Eagle, feeding on what proved to be a stale fish, while a Black Vulture patiently waited four or five feet away in the hope that his superior would leave him some pickings. On our approach, both flew, but the Vulture soon returned and finished the feast when we had passed by. Eagles were abundant—to our eyes. Accustomed to consider the sight of an eagle as a rarity it was a new experience to be able to sit on the verandah by the Atlantic coast and have an Eagle almost always in sight, while sometimes two or three were visible at once. We were favoured with one or two exhibitions of the celebrated contest between the Eagle and the Osprey, for a fish just caught by the latter, but the persecuted one escaped each time, somewhat to our regret, though perhaps we should not have favoured the thief as against the industrious Osprey.

In addition to the large birds already mentioned, one can often see from his doorway Herons, Loons, Marsh Hawks, Terns, Gulls and Brown Pelicans. On Tampa Bay, which was reached on the morning of February 26th, the last were in great abundance and extremely entertaining. Our first glimpse of them was from the train as we ran out nearly half a mile on a long dock to meet the boat. Two Pelicans, utterly fearless, came up flying parallel with the train, four or five feet above the water, and only twenty yards away; gradually passing our window one of them suddenly sighted a fish, put his head down and tail up, and went in head first. The fish was near the surface, however, so he sat up at once and gulped it down in full view. This seemed to be their regular method of fishing and from the deck of the steamer whence one could scan the bay with a glass for miles, in every direction Pelicans could be seen, some resting and some flying; but it was never needful to watch long before seeing one splash in, and then sit on the water while he devoured his catch. As the train left the boat at the other side of the bay, it ran parallel with a dismantled dock, many of the posts of which still remained; most of these posts were crowned with a resting Pelican, and though only twenty-five or thirty yards from the train, the birds paid no attention whatever to anything but the business in hand, which was—loafing.

In this bay, too, we saw the first Porpoises, which played under the very bows of the advancing steamer, and whose dorsal fins were to be seen in many directions, rising and then sinking beneath the water.

Among the very small birds, one of the most interesting was the Brown-headed Nuthatch, which was confined exclusively to the pine lands and was not very common there, but when one did meet with a little band of them they were most interesting. Their habits, and particularly their happy call-notes, show a strong resemblance to those of the Pigmy Nuthatch of British Columbia, and certainly these two are the noisest birds of their size I ever met. When two or three of them get chattering at once they really make enough noise for a whole flock of ordinary birds, and in the west I was once deceived by the Pigmy into thinking there must be several Red Squirrels chattering near by. After a shot the Brown-headed Nuthatches always flew and were very quiet, so that it was with difficulty that I succeeded in obtaining two or three specimens.

The pine barrens also held, in troops, a large number of warblers, mostly Pine and Palm, both of them feeding on the ground and constantly rising from the rear rank and flying over to the front. But the only other new and striking bird of the barrens was the Cockaded Woodpecker, which is black and white, some what after the pattern of our Hairy Woodpecker, only blacker. The full plumaged male, which unfortunately I did not meet, has a large red patch on each side of the head, but in all my birds this patch was white. This bird has an interesting note, something like that of the Red-bellied Woodpecker with which it associated.

Throughout all Northern Florida the most abundant bird was the Myrtle Warbler, and in the shade trees of Ste. Augustine it fairly swarmed. The Shrikes, too, were quite common, and very tame, paying only the slightest attention to the casual passer, and if alarmed soon returning to the same perch. Some of them may have been the southern variety, but the only one I shot was the same that we have in Ontario in summer.

Four birds whose notes the visitor does not soon disentangle are the Cardinal, Tufted Tit, Carolina Wren and Mocking-bird.

My three weeks were only sufficient to enable me to make a good guess at the author. The latter is the most prominent singer in the towns, living all over, and probably nesting in back yards as our Robin does. The Robin was there too, and was much hunted by the poorer people *for food*. These birds fed mainly on the Palmetto berries in the towns, and were too wild in the woods to be watched. As our visit ended in early March we did not hear a really fine song from the Mocking-bird, but still we found him a fairly constant singer. The Cardinal, though conspicuous, had scarcely begun to tune up, but the Carolina Wren, in the woods, gave us beautiful thrush-like songs from little bunches of scrub Palmetto, where he was difficult to see.

One of the interesting water birds, seen on the Ocklawba River only, was the Limpkin, a large and beautiful Rail-like bird of a rich seal brown colour, with vivid white streaks, which often alights in trees, although its feeding place is the marshy edges of the rivers. The Anhinga, or Snake-bird, was seen once or twice, but never at short range except for a mere glimpse, while the Herons, which were simply innumerable twenty-five years ago, are now nearly extinct, and the few that are left are wild inhabitants of the open country where a near approach is impossible.

Another bird whose acquaintance we made at the water only, though not a water bird, was the Fish Crow, coloured exactly as our crow, and of the same size, but one could guess them by their flight, and if the bird spoke there was no longer any doubt, as the voice was a harsh weak croak, quite trifling when compared with our vigorous northerners. We saw these birds only when flying to and from the salt water, and had no opportunity of making any closer acquaintance.

A summary of all the birds seen during the trip, lasting from February 13 till March 3, shows 64 old acquaintances, 6 that are very rare in the north, and 23 that were absolutely new, and while the proportion of well known birds was large, yet the new ones—winter residents of Florida—were in many instances so common and so interesting that it seemed as though there were new ones on hand at every turn. The only nests seen were a few of the Eagle and Osprey, along the water courses, and they were inac-

cessible to the tourist who had left his climbing irons in the frozen north.

I have mentioned the dislike of Floridians to work, and the more one lives in the south, the more he feels the southern langour creeping over him. It is said that a man becomes a "regular Florida cracker" in seven years, but I should guess that the average time required would be less. Coming north again, one could feel the air, hour by hour, becoming more invigorating and bracing, and when finally Canada was reached it seemed only a fitting end that the train should be run into a blizzard and incur five hours' delay on a four hours' run, but even this could not depress the spirits of one, who, after breathing the languid air of the south for a few weeks, once more felt the tonic qualities of a snow-laden atmosphere.

A CONDENSED SUMMARY OF THE FIELD-WORK
ANNUALLY ACCOMPLISHED BY THE OFFICERS OF
THE GEOLOGICAL SURVEY OF CANADA FROM ITS
COMMENCEMENT TO 1865.

By D. B. DOWLING.

The reports published during the above term are not in any sense annual reports and it is often difficult to follow the annual wandering of the members of the staff, especially during the compilation and publication of the report for 1863. The impression is very general that owing to the reduced grant the staff were employed during this interval mostly in the office on the compilation. The field-work was nevertheless carried on, although the results were absorbed in the published volumes. As the reports previous to 1863 are not available to many, this summary may be considered as a supplement to the preface of the latter volume.

The information is drawn from the reports from 1843 to 1866, the Life of Sir Wm. Logan by Prof. B. J. Harrington, and information from Dr. Robert Bell.

GEOLOGICAL SURVEY OF CANADA.

Before the union of the Provinces of Upper and Lower Canada, several petitions were sent to the Governor and notices of bills given in the Legislature of Upper Canada for the creation of a Geological Survey. A vote of £1,500 had been passed in 1841, but the selection of a geologist was not made until 1842, when W. E. Logan received the appointment. He arrived in August at the capital, Kingston, but finding the political situation very complex, he made several excursions at his own expense to various localities. A visit was made to Marmora to see the iron mines of that region, and also to Brockville, Kingston Mills, Oliver's Ferry and Perth. The first report of this work of 1842 was only preliminary, and was afterwards incorporated in the report of 1843. Private business called him away to England in the autumn, and while there he secured the services of Alexander Murray as assistant.

1843.

Logan landed at Halifax on May 31st from England. He visited the Joggins on his way to Gaspé and made a complete section of the rocks there. He next visited Dorchester, Richibucto and Mirimichi and examined the coast for fifty miles from Bathurst, and also along the south side of the Bay of Chaleurs from Jacket River to Pockshaw. Then he worked between Cape Rosier and Paspébiac.

Murray arrived from England in May and called at Kingston, but commenced his work at Toronto by examining the country between the Credit and Don rivers. Then he went to Lake Simcoe and explored its shores. From Simcoe he went down the Severn River to Lake Huron and along the coast to Coldwater River and as far as Penetanguishene. Returning to the narrows of Lake Simcoe and to Barrie he struck west through Nottawasaga Township following the Niagara escarpment for a short distance but returned to the Lake Ontario shore, visiting Scarborough, Pickering and Whitby. Next from Oakville he traced the rocks west through Esquesing and back by Nelson and Trafalgar Townships. Subsequently he examined the country lying

between the Grand River as far up as Paris, and Lake Ontario east to the Niagara River.

1844.

Logan and Murray left Montreal in May and proceeded to Gaspé arriving June 1st. They commenced work at Cape Rcsier and continued to Cape Chat and then ascended the Chat River to the vicinity of the Notre Dame Mountains. Crossing to the Cascapedia River, their Indians built bark canoes, in which they descended to the mouth and coasted to Paspebiac. From there Murray was sent up the Bonaventure River, while Logan visited Port Daniel and returned to New Richmond. The coast was examined to Dalhousie and the Restigouche to Campbellton and thence to the mouth of the Matapedia. Up this stream they journeyed to Lake Matapedia and from thence by road the country was examined on foot.

1845.

Logan this year commenced the exploration of the Ottawa River. With J. McNaughton he surveyed not only the main river but several tributaries. He ascended the Rivière à la Graisse and the Rivière du Nord some distance, the Mississippi River to Pakenham, the Madawaska to High Falls, and the Bonnechère to Jessups Rapids. From Portage du Fort he went around Calumet Island, and passing Coulonge Lake reached Pembroke. From the mouth of the Mattawa he made a visit to Lake Nipissing.

Murray spent the summer in Gaspé where he made surveys on the Matane, Ste. Anne and St. John rivers. Later in the year he collected fossils at Thetford, Ont.

1846.

The nucleus of a museum was this year moved from 40 St. James street to Little St. James street, Montreal.

Logan and Murray, with McNaughton as surveyor, formed a party to explore the north shore of Lake Superior. James Richardson is said to have accompanied this party.

De Rottermond, who had been acting as chemist, resigned.

Dennison Olmstead, Jr., received the appointment but owing to ill health could not assume the duties. He died early in the year.

T. Sterry Hunt, at the age of 21 years, received the appointment and came to Montreal the following February.

1847.

Logan devoted most of the season to work on the south side of the St. Lawrence, from Montreal and Lake Champlain to the Chaudière River.

Murray went to explore the northern shore of Lake Huron. He took four Indians from Montreal. Going by Detroit he took steamer to Sault Ste. Marie and from there explored the north shore and the Manitoulin Islands to Manitowaning. He left La Cloche on August 16th to survey the French River to Lake Nipissing.

Hunt spent part of the summer with Logan, but afterwards went to Lachute and Grenville to collect fossils from the limestones of the Ottawa. He visited the falls on the Gatineau and examined the rocks there, and also the iron-ore at Hull. From there he went to Perth and examined the apatite deposits of North Burgess. The mineral, perthite, was analyzed by his pupil, Mr. Hartley. Mineral waters were collected from Caledonia Springs, Tuscarora, Charlotteville and Ancaster, Ont.

1848.

Logan spent only two months in the Eastern Townships when he determined to pay a visit to Lake Huron. There he examined the Bruce Mines, and with Marray ascended the Thessalon River before returning to the Eastern Townships.

Murray made a short excursion up the Grand River to Galt and then went to Goderich, examining the rocks on the Ashfield, Maitland and Bayfield rivers. Then he proceeded along the lake shore to Sarnia, and by Lake St. Clair to Windsor. Then from Detroit he took steamer to Sault Ste. Marie and joined Logan at Bruce Mines. Separating from Logan on September 5th, he went along the coast to Spanish River and ascended it for sixty miles.

After examining the Wallace mining location he coasted the east coast of Georgian Bay to Penetanguishene and Collingwood.

Hunt visited mineral springs at St. Leon, Caxton, Champlain, Quebec, Varennes, Sabrevois and St. Benoit, Que.

1849.

Logan and Murray spent most of the summer in the Eastern Townships between the Chaudière and the Temiscouata road. As coal was supposed by some to occur near Murray Bay and Bay St. Paul, Que., and petitions for borings had been sent to the Legislature, Logan was asked to make an examination. This took some time, and he did not finish his work in the Eastern Townships.

Hunt accompanied Logan on the St. Francis and Chaudière rivers, but later visited portions of the west to collect soils. Mineral waters also occupied part of his attention.

1850.

The Provincial Act creating the Survey expired in March, and it was August before it was renewed.

Logan was part of the time in London superintending the collection of exhibits for the Exhibition, but later continued the examination of the gold-bearing gravels of the Chaudière.

Murray spent the summer in Western Ontario tracing the rocks of the Niagara escarpment.

Hunt was with Logan in the Chaudière district. In September he went to the north shore of the St. Lawrence below Quebec and then returned to Montreal to continue laboratory work.

Richardson collected fossils at Cornwall.

1851.

Logan went to England with the exhibit but returned in August, then, with Richardson, studied the outcrop of the Potsdam sandstone near the St. Lawrence.

Murray worked between the Ottawa and St. Lawrence rivers east of Gananoque. He made a short excursion to Enniskillen Township, in Western Ontario, to examine into the reports of mineral pitch or petroleum. He also collected fossils at Edwardstown and in Township Beverly, Wentworth, Ont.

Hunt spent some time with Murray in Eastern Ontario, and then went to the village of St. Nicholas, Kamouraska County, Que., to examine metamorphic rocks. Several short excursions were also made to collect mineral water.

1852.

The museum was moved in the spring from Little St. James street to St. Gabriel street, to a building formerly the residence of the Hon. Peter McGill.

Logan went to England but returned in May and began an examination of the north shore of the St. Lawrence between Montreal Island and Cape Tourmente.

Murray examined the country between Kingston and Lake Simcoe tracing the outcrop of the lower fossiliferous rocks.

Richardson assisted Logan between Montreal and Three Rivers.

Hunt continued his investigations of the mineral waters of Canada.

1853.

Logan examined the rocks at Grenville, Que.

Murray ascended the Muskoka River and descended by the Ottawa to Allumette Lake. Then he ascended the Bonnechère and passed from it to the Madawaska. Ascending the York or south-west branch he crossed several tributaries of the Ottonabee River and came out by Balsam Lake.

Hunt made analyses of dolomites and limestones and also continued his investigation of the mineral waters of Canada.

Richardson collected fossils at Stafford, Fitzroy and Ottawa, Ont.

1854.

Logan studied the rocks at Point Levis and collected material for the Exhibition at Paris.

Murray examined the Meganatawan River and commenced the survey of Lake Nipissing.

Hunt examined the triclinic felspars of the Laurentian and also various ores.

Richardson and E. Billings collected fossils at Point Levis, Que.

1855.

Logan and Hunt went to Paris. A large collection of graptolites from Levis were taken to Prof. James Hall, at Albany, to be described.

Murray, with Prof. Hall, visited some of the fossil localities in Ontario. Then he went to Lake Nipissing by way of Lake Huron and surveyed the west coast from the outlet.

Hunt reported on iron-ores, cement, plumbago, peat, and the extraction of salt from sea-water.

Richardson and Billings collected fossils at Levis, Que., and Thetford, Ont.

1856.

Logan was knighted January 29th. He stayed most of the summer in Toronto trying to get another Act passed for the Survey.

Murray, with Mr. Brown as assistant, ascended the Sturgeon River from Lake Nipissing for 52 miles, then the Maskinongé for 30 miles, and crossed to the Wahnapiatae River and back to the French River. Another survey was made from the Wahnapiatae by the Whitefish River to Lake Huron.

Hunt continued laboratory work.

E. Billings was appointed Palæontologist on August 1st.

Richardson went in June by way of the Mingan Islands to Anticosti. At both places examinations were made, but the greater part of his time was spent at the latter place. Logan seems to have made him a short visit and collected fossils.

Capt. E. D. Ashe was employed on longitude determinations by means of the electric wire.

R. Barlow, one of the engineers employed on the construction of the Victoria Bridge, was appointed chief draughtsman June 1st.

S. Barlow was employed to assist his father at mapping, appointed Dec. 1st.

1857.

Logan was detained in Montreal at the meeting of the American Society for the Advancement of Science. He went to Gren-

ville in October and spent a few weeks tracing the limestone bands of the Laurentian.

Murray, with J. Johnston as assistant, made a survey of the mouth of the French River and then went to the Bruce Mines and Echo Lake to study the copper deposits. A survey was made of Echo Lake and River, the northern part of Great Lake George, Little Lake George and Garden River. He also collected fossils at Galt and Woodstock with Billings.

Richardson, with Scott Barlow as assistant, surveyed the Magdalen River and the coast of Gaspé to Gaspé Bay. A traverse was made from Griffin Cove to Peninsula Cove in Gaspé Bay, then up Dartmouth River and to Grand Etang.

R. Bell was another of the party and collected objects of natural history on which he specially reported. After the St. Lawrence was reached, the party crossed over to the Saguenay and ascended to Lake St. John. Richardson and Barlow walked across to Bay St. Paul.

Billings ascended the Ottawa and Bonnechère rivers, collecting fossils. At Eganville he engaged J. McMullen, and with him visited Lake Clear in Sebastopol Township. He then returned and ascended the river to Golden Lake. The rocks of the fourth chute were examined while the water was shut off. Later he visited Galt, Woodstock and Port Colborne, Ont.

Hunt continued his chemical work on the dolomites of Canada and also investigations on fish manures.

Ashe reported on his longitude determinations.

1858.

Logan spent six months in the Grenville region and ascended the Rouge River to Iroquois Chute. In August he attended the meeting of the American Society for the Advancement of Science.

D'Urban accompanied Logan to Grenville and collected natural history specimens.

James Lowe was employed by Logan in the Grenville region.

Murray and Johnston, with S. Barlow as assistant, continued the examination of the copper deposits north of Lake Huron between the coast and Thessalon River. They connected their work to Echo Lake and around Rock Lake. They also examined the coun-

try and coast between Thessalon and Mississagui Rivers and surveyed the upper part of the latter.

Richardson, with Bell as assistant, explored the country between Rivière du Loup and Ste. Anne de Monts and along the coast to Marsouin River. He ascended the Ste. Anne River and crossing overland to the Barn-shaped Mountain he continued to Lake Matapedia and descended to Dalhousie, collecting fossils down to Patapedia. He ascended the Patapedia and crossed by the lakes of the Metis River to the St. Lawrence. Before returning to Montreal he visited several townships south of Rimouski and Trois Pistoles, Cacouna and Rivière du Loup.

Hunt continued work on the intrusive rocks of Montreal Mountain and the metamorphic Silurian rocks of the Eastern Townships.

1859.

Logan went to the Mingan Islands in June, and in July to Burlington and St. Alban's, Vermont. In September he was in Carleton Place, and afterwards visited Acton and the copper mines of the Eastern Townships.

Richardson accompanied Logan, but afterwards visited Perry, Lubec and Bangor, Maine. He also collected fossils in Western Ontario at Bosanquet and Thetford.

Murray was also employed most of the summer along the north side of the Ottawa River, taking latitude observations and making surveys in the vicinity of Grenville.

Bell was sent to explore the north shore of Lake Huron in the vicinity of the Manitoulin Islands, where he also collected fossils. Returning to Owen Sound he traced the outcrop of the Silurian along the Niagara escarpment to Lake Ontario.

Billings collected fossils near Montreal.

1860.

Logan continued making measurements at the copper mines in Acton and Milton Townships, Quebec. He records observations on the Island of Montreal, and visited Orleans Island and Point Levis in September.

Richardson made a long traverse along the north shore of

the Gulf of St. Lawrence to the Straits of Belle Isle, from near the Mingan Islands.

Murray was instructed to make explorations west of Sault Ste. Marie, on the coast of Lake Superior. His assistant this year was R. Bell, who made many of the necessary surveys, such as a triangulation of Bachewanung Bay and Goulais Bay and River. A visit was paid to the Limestone Mountains near Lake Anne on the south shore. After Murray had sailed for Sarnia, the party under Bell coasted the north shore to Bruce Mines, calling at the Manitoulin Islands, and collecting fossils. From Collingwood, Bell ran several long lines of levels through the townships south, and also established heights of points on the Blue Mountains. The surface geology of this region was also studied.

Lowe made surveys in Grenville and Chatham Townships, Quebec.

1861.

Logan was mostly in the Eastern Townships, but in November he visited Phillipsburgh and Swanton, Vermont, making many sections of the Phillipsburgh series, which were published in the report of 1863.

Richardson spent the season in Newfoundland on the west shore.

Murray visited several points along the escarpment near Owen Sound, and then went up the lake to Drummond Island, calling at Colpoys Bay, Gun Point and Flowerpot Island. The first part of September he was on Barr River and Lake George.

Bell worked out the distribution of the formations westward of the Niagara escarpment in the counties of Grey, Bruce, Huron, Wellington, Waterloo, Perth, Brant and Haldimand. He also collected specimens for the International Exhibition of 1862.

Lowe made surveys in the vicinity of Grenville, Quebec, in De Salabery Township.

1862.

Logan was a juror at the International Exhibition, London, but made a short trip in August to Point Levis and Island of Orleans. In September he paid a visit to Phillipsburgh and Swanton, Vt.

Murray traced the limestone band north of Lake Huron in the Huronian rocks east of the Mississagui River and upward to Wahcomataganing Lake above Salter's base line to the contact with the Laurentian ; also eastward along the Marsh River to Blind River and north-west to the narrows of Macomang Lake.

Richardson spent a short time in Newfoundland visiting Burnt Cape, Table Head and St. Paul Bay.

Bell surveyed the Dartmouth, York, Malbay and Grand rivers in Gaspé, Que., and also made large collections of fossils at Port Daniel and Gaspé Bay.

Lowe made surveys in the vicinity of Grenville, Que.

1863.

Logan visited Sherbrooke, Ascot and Point Levis in February and was in the vicinity of Montreal during June and July, but visited Point Levis and Orleans Island in August. In the fall he visited Albany, N. Y.

Richardson and Bell spent the summer in the Eastern Townships.

Murray, with S. Barlow as assistant, explored the country north of Lake Huron, surveying the following : Lakes Macomang and Tandanaidah on Blind River, and from Trout Lake to the Little White River.

Lowe made surveys in Ponsonby Township, Que.

T. C. Weston was collecting fossils with Richardson and visited Maine with Logan.

In autumn R. Bell was appointed Professor of Natural Science at Queen's College, Kingston.

1864.

Logan visited Quebec in May, making measurements and examinations at Point Levis. In July a short trip was made to the Eastern Townships. The publication of the Atlas to the report of 1863 obliged him to go to England, where he remained till spring.

Richardson spent the summer in the Eastern Townships.

Murray left early in the spring for his new field of labour in Newfoundland.

Weston was sent to Troy, N.Y., to collect fossils. He spent some time at Bald Mountain and Glen Falls.

Lowe made surveys in St. Jerome Township, Que.

1865.

Logan arrived in Canada early in June. He ascended the Petite Nation River in September, but was recalled to Montreal by his brother's death.

Richardson spent the summer in the Eastern Townships.

A. Michel, mining engineer, was engaged to explore the gold-bearing gravels and quartz veins of the Chaudiere River, Que.

Bell was employed during the summer on an exploration of Manitoulin Island. H. G. Vennor, accompanied him.

Thomas Macfarlane examined the north-east shore of Lake Superior and visited the copper mines of Portage Lake, Michigan.

Weston was sent to Anticosti and Silver Brook, Gaspé, to collect fossils.

Hunt made assays of gold-ores from the Chaudiere River, Que.

Lowe made surveys in Suffolk and Petite Nation Townships, Que.

THE KENTUCKY COFFEE TREE.

(*Gymnocladus Canadensis*.)

By REV. JOHN MORRISON, London, Ont.

When on my holiday trip in the summer of 1898, I visited my friend H—— and his beautiful home on the east side and closely overlooking the little river Sydenham, just over the boundary of Lambton County, in Kent. As I tied up my horse I was surprised to notice beside the driveway some five or six very fine specimens of the *Gymnocladus Canadensis*, about four inches in diameter and fifteen feet high. On enquiring where he got them, I was doubly surprised when told that fifteen years before he dug them up about a mile away on the western side of the river believing them to be walnuts; that only quite recently had he discovered they were not walnuts, and he did not know what they were, nor did anyone who had looked at them, and one man urged him to cut them down lest they might be of a poisonous nature. I informed him what they were, and not having time then I was compelled to wait a year. Then, when on my annual holiday I spent some

time searching for them, but failed to find them. On August 7th this year I went there determined if there were any of them growing in the locality to find them, and after some time spent in a most careful search I was rewarded by finding on a plat of ground not more than one hundred feet square about fifty specimens. About a dozen will average from three and a half to four and a half inches in diameter and twenty-five feet high. There are some fifteen or sixteen others from one inch and a half to two and a half in diameter and ten to twelve feet high; the others are from one foot to four feet in height, and there are some six or eight stumps averaging six inches in diameter where the largest ones in the group have been cut down.

They grow upon a little knoll on the edge or rather in the midst of a swampy piece of ground about a quarter of a mile west of the River Sydenham and within half a mile of the northern boundary of Kent County, or on the old maps of twenty-five years ago within the southern boundary of Lambton. I searched carefully to find traces of a parent tree from which they might have come but failed. That they are native and not planted I am satisfied. I conversed with a member of the family on whose farm they grow; she has lived there for many years and her father before her—one of the old settlers. She knew nothing at all about them, and as they are half a mile from the farm-house and buildings, it is another evidence they were not planted, at least by any white person within two generations.

In Macoun's Catalogue of Canadian Plants, pt. I, p. 123, we are told of their being found (native, I take it) on Pelee Island, and nowhere else in Canada unless planted. Now, what are we to believe regarding this group—nearly one hundred miles as the crow flies north-east of Pelee Island; has a young tree or a seed been planted there generations ago by the neutral Indians, who are believed to have used Pelee Island as part of their highway from the south into Canada (see Archæological Report, 1899, pages 32-33) and so started the group now found, or are they the "last of their race" driven south by the cold climate which succeeded the warm semi-tropical climate which once prevailed over all this country? Who will solve this riddle? In any case the discovery is a most interesting one to the lover of the rare and strange in the scientific field, and I gladly respond to the invitation of Prof. John Macoun, the Dominion Botanist, (to whom I reported my find) to write it up, believing there are many who will be interested to know of it.

ENTOMOLOGICAL NOTES.

A HINT TO GARDENERS.—The well-known Cutworms which destroy so many young plants in spring are the caterpillars of several kinds of moths which lay their eggs in autumn upon weeds and other rubbish too frequently left unattended to by gardeners at this time of the year. The destruction of all weeds and the burning up of all old plants from which the crop has been gathered, such as the vines of peas and beans, the haulms of potatoes and tomatoes, the stems of Indian corn from which the ears have been gathered, etc., etc., will prevent the eggs of many Cutworm moths from being laid in a garden where the caterpillars might do harm the following year. The experience of many has shown that gardens kept scrupulously clean of weeds and useless vegetation are much freer of Cutworms than those which are left in a neglected condition during the autumn months. Not only are the moths of Cutworms attracted to this rubbish to lay their eggs, but many other insects gather around them seeking places to pass the winter. The early destruction of all weeds of course also prevents the ripening of seeds. The bonfire is a good servant of the gardener and should be kept constantly at work throughout the autumn, burning up his worst enemies, weeds and rubbish, with many insects' eggs, and turning them into useful fertilizers.

BOTANICAL NOTES.

JEWEL WEED, *Impatiens fulva*.—The form of this plant with spotless flowers has been growing along the sidewalk in Anne street (or as it has been lately called Gladstone avenue) and also along the St. Louis dam road to the Experimental Farm, in small numbers for several years. During the past summer several patches have been noticed, and those of our botanists who wish to obtain specimens can now collect them in fine condition.—J. F.

EXCURSION TO KIRK'S FERRY.

The last excursion of the season will be held on Saturday next to Kirk's Ferry, a beautiful locality on the Gatineau River. It is hoped that many of the ladies and gentlemen attending the Normal School Jubilee will be present. The train will leave the Union Depot at 1.30 p.m.

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