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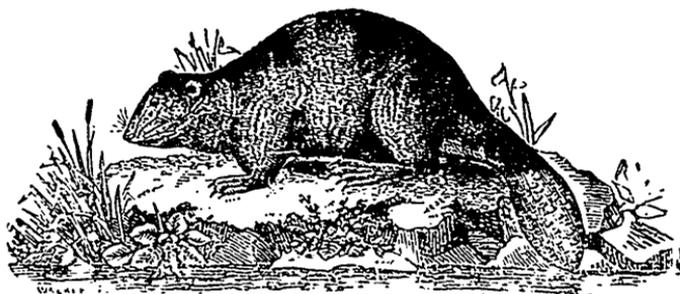
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October, 1894.

THE
* OTTAWA NATURALIST *

VOLUME VIII. No. 7.



THE BEAVER (*Castor Canadensis*, Kuhl).

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ANNUAL REPORT OF THE COUNCIL, 1893-1894.

To the Members of the Ottawa Field-Naturalists' Club :

In presenting this, the fifteenth Annual Report of the work of the Club, your Council has to announce that the year just closed has been one in which the Club's success, usefulness and activity have amply repaid the amount of time and labour devoted to it.

The very large attendance at the Excursions held during the summer season to Wakefield, Rockland and to Borthwick's shows plainly to what degree of popularity our spring and summer outings have attained.

Nineteen new members were elected by your Council and their names added to the membership roll. A few have resigned for various reasons.

Ten meetings of the Council were held during the past year at different times for the transaction of routine business, appointing leaders, preparing for excursions and soirees, and the publication of the OTTAWA NATURALIST.

Six soirees or evening sessions of the Club were held during the winter months as follows :

Dec. 12th —Inaugural Address: The extinct Northern Sea-cow and early Russian Explorations in the North Pacific.

Dr. G. M. Dawson, C.M.G., F.R.S.

Jan. 9th.—Following a Planet. (*With lantern illustrations.*)

A. McGill, B.A., B.Sc.

Jan. 23rd.—Biological Water Analysis. (*With lantern illustrations.*)

Dr. Wyatt Johnston, Montreal.

Feb. 6th.—Disintegration and Denudation of Rocks.

Frank Adams, Ph.D., (McGill College, Montreal.)

Feb. 20th.—The Transmutations of Nitrogen. (*With chemical experiments.*) Thos. Macfarlane, F.R.S.C.

Mch. 6th.—Ottawa Butterflies. James Fletcher, F.L.S., F.R.S.C.

Notes on the Natural History of the Islands of Behring

Sea James M. Macoun.

The OTTAWA NATURALIST has been promptly published by our able and zealous editor, Mr. W. H. Harrington, on whom the *onus* of the editorial work has practically entirely fallen.

One of the first duties of your Council after election was to appoint Mr. Harrington as editor, and with this appointment the position of sub-editor was assigned to each of the following gentlemen engaged in various branches of work in connection with the Club, viz :—

1. Geology Dr. H. M. Ami.
2. Mineralogy Mr. W. F. Ferrier.
3. Botany Mr. William Scott.
4. Entomology Mr. James Fletcher.
5. Conchology Mr. F. R. Latchford.
6. Ornithology Mr. A. G. Kingston.
7. Zoology Mr. F. T. Shutt.

As may be observed in reading the NATURALIST for the past year, various notes bearing on these different departments of the Club's work above mentioned have appeared from time to time. It is earnestly desired, and this Council recommends, that this branch of the Club's work be carried on efficiently in the future, inasmuch as this method not only furnishes the editor with material for the monthly periodical, but gives also to the members current and interesting notes in these different topics.

Early last year a number of members of the Council and Club received blank forms prepared by a Committee of the Royal Society of Canada on which to record phenological observations. These have been filled and handed back to the Committee of the Royal Society whence they came.

The Council and the Club generally, have been under great obligation to one of their number (during the past year) in the person of Miss A. M. Living for the gratuitous designing and drawing of the beautiful cards of announcement of the different lectures and soirees given under the auspices of our Club.

Your Council has just recently had prepared a memorandum to be presented by the Hon. E. H. Bronson before the Ontario Legislature, stating the claims of the Ottawa Field-Naturalists' Club for aid and subsidy towards publishing the OTTAWA NATURALIST and for general educational work carried on.

The Treasurer's statement shows that after defraying all current expenses, including printing and publishing of the OTTAWA NATURALIST, our official organ, there is still on hand a balance of \$25.92.

A number of members are now in arrears. It is earnestly hoped that all will promptly settle with the incoming Treasurer and thus enable the Club to go on increasing in usefulness as in the past.

Sub excursions were perhaps not held as frequently nor at as regular intervals last year as in former years. This part of the Club's work was a very prominent feature at one time. Our Saturday afternoon walking parties were very popular, and would, no doubt, be more so if the leaders would make it convenient to be present at the General Post Office at 2 o'clock as formerly.

The thanks of the Council and of the Club are due to Messrs. W. C. Edwards, M P., and Archibald Stewart, also to Mr. William Borthwick, for the hospitable manner in which they received the Club at the Rockland Quarries and at Borthwick's Springs.

We regret that, owing to the departure from Ottawa of Mr. William Scott, late Mathematical and Science Master at the Normal School, we have lost an active and zealous member of our Club. In his position as Librarian, Mr. Scott did good and efficient work for the Club. Since his departure your Council have unanimously chosen and requested Mr. R. H. Cowley, B.A., to act in the capacity of Librarian for the balance of the term up to this annual meeting.

To Dr. MacCabe, *Principal of the Normal School*, the Council of the Ottawa Field-Naturalists' Club feel greatly indebted for his kindness and generosity in granting us the use of the room in which we assemble now for the evening soirees during the winter months.

To Mr. McGill, to Dr. Wyatt Johnston, to Dr. F. D. Adams and to all who have assisted in making the past season a successful one, the Council desires to record its obligations.

In conclusion your Council beg leave to thank the members for the zeal and interest manifested at the Excursions during the past year and also at the winter soirees, and trust that the incoming year will mark another era of progress for the O.F.N.C.

HENRY M. AMI,
Secretary.

Ottawa, March 20th, 1894.

REPORT OF THE GEOLOGICAL BRANCH, 1893-94.

To the Council of the Ottawa Field Naturalists' Club :

In presenting the report of this branch of the Club's work for the past year, your leaders have to announce that considerable progress was made in examining the geological features of the districts about Ottawa, and especially in the vicinity of the localities visited by the Club. Reports upon the facts observed on the excursions have appeared from time to time in the OTTAWA NATURALIST.

On two occasions, at the general excursions to Wakefield in May and to Rockland in July, your leaders performed the duties incumbent upon them. At the latter place one of the leaders collected a large amount of material in the way of rock-specimens and fossils from which he prepared a paper entitled : " Notes on the Geology and Palæontology of the Rockland Quarries and vicinity, in the county of Russell, Ontario, Canada." This paper has since been published* and contains interesting reports on the chemical composition, the microscopic characters and petrographical and other physical relations of the limestone rocks in question. To Dr. B. J. Harrington, to Prof. H. P. Bovey and to Dr. A. P. Coleman, the writer is indebted for reports on these points.

As sub editor in the department of Geology, Dr. Ami has also prepared a number of interesting book notices and reviews of articles of general as well as local value. It is to be hoped that in the coming numbers of the OTTAWA NATURALIST there will be found notes on mineralogy, stratigraphy, palæontology and kindred departments of geological research in regular and systematic sequence.

There is a decided need of some publication here in Canada taking hold of this important branch of work, so that we heartily recommend the re-appointment of sub-editors in the various branches of the Club's work by the incoming council for 1894-95.

Early in the year two of the members of our Club, hearing that Mr. John Stewart was leaving the city, secured the balance of the geological collections he had made about Ottawa and elsewhere during

*OTTAWA NATURALIST, Vol. vii., 1893, No. 9, pp. 138-147.

the past ten years. These have all now been well nigh studied and determined. The bulk of the fossil collection, consisting of crinoids and cystideans, on which Mr. Stewart had spent a great deal of time, were purchased by Mr. J. H. R. Molson for the Peter Redpath Museum of McGill College, Montreal, and is now on exhibition in the cases of that institution.

A small collection was sent to Prof. F. A. Bather and Dr. Henry Woodward, of the British Museum, who expressed themselves as highly delighted with the specimens sent.

Dr. Ami is preparing a list of the species of fossils in the Stewart collection. Besides those from Ottawa and its environs there are not a few from Belleville, Hastings, Madoc, Havelock, and from other localities in central Ontario.



The discovery of a *gouge* by Mr. J. Ballantyne or stone implement belonging to the aborigines of this portion of Canada in Mr. Graham's brickyard at Archville (Ottawa East), led to an interesting examination of the circumstances attending the finding of it. Amongst the fossil remains collected in the beds of clay and sand; were the following :

1. *Leda* (*Portlandia*) *arctica*, Gray, abundant.
2. *Macoma fragilis*, Fabricius
3. " *calcareo*? Chemnitz.
4. *Natica affinis*, Gmelin.
5. *Cylichna alba*, (Brown.)
6. *Balanus crenatus*, Bruguière.

Of these, No 5 is an addition to our list of Pleistocene shells from the Ottawa district.

Amongst the interesting specimens of Pleistocene fossils which came under our notice of late, was a portion of the lower jaw of a young seal found in a nodule of calcareous matter at Green's Creek. -- This specimen was in the possession of Sir James Grant—one of our members. Sir James handed it to Dr. Ami, who had it photographed and reproduced (see accompanying cut), so that our members may have an opportunity of seeing it, and also for the purpose of placing it on record.

During his researches in the Ottawa and Gatineau districts, Dr. R. W. Ellis noted the occurrence of marine shells at two localities, viz:—

(1.) MacGregor's Lake, two miles north of Perkins's Mills, at an elevation of 450 feet above sea-level. *Saxicava rugosa*, L., (= *Saxicava pholadis*) was found in great abundance with a remarkably firm and thick test.

(2) Near Cantley, P. Q., three species of Pleistocene and marine shells:—

1. *Macoma fragilis*, Fab.
2. *Saxicava rugosa*, L.
3. *Leda (Portlandia) arctica*, Gray.

HENRY M. AMI. }
 R. W. ELLIS. } *Leaders.*
 W. F. FERRIER, }

March 19th, 1894.

RECENT DEPOSITS IN THE VALLEY OF THE OTTAWA RIVER.

BY R. W. ELLIS, LL. D., F. G. S. A., F. R. S. C.

The question of the evolution and subsidence of the earth's crust is one which in recent years is engaging much of the attention of leading geologists both in Canada and the United States. Various opinions have been expressed on the subject, some contending that the submergence of the land can be measured by a very considerable amount ranging from 1,000 to 2,000 feet or even more, while others maintain that the change of level is very much less. Controversy on this point at times waxes warm; for involved in the general question is that

of the distribution of the drift deposits of sand and gravel and the great areas of clay, either of marine or fresh water origin. In the former of these, the earliest traces of man's existence on this continent are supposed to be found, and his presence in America at a very remote date, comparatively speaking, is held by many observers to be clearly established. In many places the submergence of the surface beneath the sea is clearly proved by the presence of marine shells in beds or local deposits, or by the finding of the bones of the seal, of fish, or other forms of marine life : but the fact that very large areas of these clays furnish, at the present day, no trace of these remains, shews clearly that their absence in these deposits must not be taken as conclusive that these were not deposited under marine conditions equally with the beds which carry these organisms. So also the presence of characteristic sea beaches, composed of well rounded water-worn stones, at elevations of hundreds of feet above present sea level and far removed from the present ocean limit, establishes clearly the fact that at one time the salt sea spread over a much more widely extended area than it now occupies. Thus in the rear of the village of Quyon and four miles north of the Ottawa river several of these perfectly defined beaches can be recognized, their pavements of well rounded water-worn stones, curving in exactly the same manner as those now seen along the shores of the many bays of the Atlantic coast. Some of these well defined shore lines have been recognized along mountain slopes at elevations of hundreds of feet above the sea at various places throughout Northern and Eastern America. Near home probably one of the most interesting of these old beaches may be seen on the Rigaud mountain on the south side of the Lake of Two Mountains, which is the expansion of the Ottawa River, a short distance above its junction with the St. Lawrence. The mountain rises from the village of Rigaud, which nestles at its foot, to a height of about 750 feet above the river, the highest point being at its south-west extremity. From this point the mountain extends north-easterly in a long ridge, the elevation in rear of Rigaud village being about 500 feet. Along the summit of this, scattered boulders of limestone, gneiss and syenite from the Laurentian range north of the Ottawa are seen, but further down along the north-west slope of the ridge and almost in rear of the cemetery, a curious deposit of well rounded water-worn

stones occurs, which has a very considerable extent. In places the soil and thin forest growth has been removed and the rounded stones are laid bare sometimes over a space of several acres. These shew low terrace like ridges of eight or ten feet high, the whole deposit sloping towards the valley of the Rivière à la Graisse which flows past the northern flank of the mountain. The rocks comprising this curious deposit, which is known locally as the *Devil's Field*, are nearly all of reddish syenite often composed almost entirely of red felspar, with others of flesh-red felsite and porphyry, and a few of quartzite, the latter belonging presumably to some portion of the Laurentian, which is found on the north side of the Ottawa River. The bulk of the syenite and felsite rock is from the mass of Rigaud mountain itself. This deposit extends for several hundred yards along the north face of the mountain, and has a depth of from ten to twenty feet, though the bottom has not apparently been reached, but lower down the mountain side the deposits become finer, being largely coarse gravel and sand. There is every probability that this curious deposit marks an old shore or beach of the time subsequent to the glacial period. The locality has been briefly described in *Geol. Can.* 1863, p. 896, and is well worthy a visit from any one interested in the subject of glacial geology.

That the surface of the country was below the sea level at this period is clearly shewn by the presence of marine shells in extensive deposits of blue clay which is widespread throughout the valley of the Ottawa River. Along the streams flowing from the north, as the Rouge, Du Lievre, Gatineau, etc., it has been recognized for nearly 100 mile from their juncture with the main stream. Frequently the clay deposits are covered by a mantle of sand often of considerable thickness. That the greater part of these clays are of marine origin is shewn by the finding of marine shells at elevations of 450 and 500 feet above present sea level at various points throughout the area. Along most of the rivers throughout this section a succession of terraces occurs, some of which along the upper part of the Rouge River are 1000 feet above the sea level. The distribution of the clays and sands throughout the northern area is very extensive; great areas as the Kazabazua plains embracing many square miles on which the soil is nearly pure sand, the vegetable growth consisting of small pine and blueberry

bushes ; and these sandy deposits can be found for long distances north, probably to near the height of land. In deep cut sections the blue clay frequently appears in which, however, the marine organisms have not yet been found, and the mode of deposition can not therefore be distinctly affirmed. Marine shells have been found as far west as Bryson, on the Ottawa, and nodules like those of Green's Creek on Coulonge Lake 365 feet above sea level. It is thus clear that a very considerable part of the Ottawa basin has been submerged.

A very interesting point in connection with this question is the distribution of Laurentian boulders along the flanks of the mountain range which, traverses the eastern townships of Quebec, seventy to 100 miles south-east of the St. Lawrence River. Here on the slopes of the hill ranges which extend north-eastward from the Vermont boundary to Gaspé, scattered masses of gneiss and limestone from the Laurentian hills north of that river are found at elevations of 1000 to 1400 feet above the sea level. In the great valley between this ridge and the highland along the boundary of Northern Maine the drift has also been very extensive, clays and sand occurring at elevations of 800 to 1000 feet. This country has undoubtedly been submerged, and Hitchcock and others have recorded the presence of beaches and terraces along the mountains of Vermont and New Hampshire at elevations of 2000 to over 2500 feet. The whole question of submergence and elevation is of very great interest and the gradual accumulation of facts from many widely scattered points should, if properly interpreted, give us much reliable information when properly correlated. Unfortunately, however, the peculiarities of many minds prevent these facts from being regarded from the same stand point, so that while one sees in these phenomena the clearest evidence of submergence and sea beaches another sees only elevation and terminal moraines.

There is yet a large field of study along the Ottawa River and the many tributary streams for those who are interested in this branch of scientific investigation, and many points, a few years ago accessible only with difficulty and much expense, can now be readily reached by the various lines of railway lately constructed. There is no doubt therefore that fresh facts bearing on the question will rapidly accumulate and the vexed question of submergence or continental glaciation may be satisfactorily settled in the not far distant future.

EXCURSION TO GALETTA.

The last excursion of the season was held on Saturday, the 15th of September, to Galetta, on the Ottawa Arnprior and Parry Sound Ry. This excursion, notwithstanding that it was not largely attended, was decidedly a successful one. The day, although rather overcast early in the morning, turned out all that could be asked by the most fastidious. The locality visited, is one of great natural beauty, and the arrangements made by the acting-president, Mr. Shutt, were such as to call forth the grateful appreciation of all who were fortunate enough to participate in this pleasant outing. On arriving at the Galetta station the party was met by Messrs. George and Galetta Whyte, and escorted to the town hall, which had been kindly placed at the disposal of the excursionists. Here, without further delay, the lunch baskets were deposited, and the Naturalists divided themselves into two parties, one under the guidance of Dr. H. M. Ami went off to examine the rocks and collect geological specimens. The larger number, led by Mr. Galetta Whyte, and with Mr. Robert Whyte and Mr. Fletcher as botanical leaders, and Dr. Ellis as geologist, started off by a circuitous path through the woods, towards Dingley's Syne. Many specimens of interest were collected on the way. Wood-ducks in large numbers and a few "partridge" were seen around the frequent ponds. When the Syne was reached most of the party were glad to rest in the shade, after their hot walk. They were not, however, idle, and the stream furnished many nice specimens of freshwater shells and water plants. Upon returning to the village again an hour was profitably spent in refreshing the inner man, and at 2:30 all were called together to hear the addresses of the leaders, which were delivered in Mr. Whyte's beautiful grove, close to the village.

Galetta is a thriving village about thirty miles from Ottawa, on the south and east sides of the Mississippi River. There are several pretty houses, a good store, a grist mill and a woollen factory. A notable feature of the locality is the magnificent water power, which has only to some extent, as yet, been made use. For some distance above and below the village the river is rapid and cut up by most picturesque chutes or falls, overhung by tree-laden banks. A mile distant, on the top of the hill is the comfortable homestead of Mr. Charles Mohr, well known throughout the district for his hospitality.

The party having assembled and taken their places on the comfortable seats arranged in the grove, were called to order by Mr. Shutt, who congratulated those present on the success of the day, and then called on Dr. H. M. Ami, the geological leader, for the first address. The doctor spoke as follows :

The various geologic formations met can all be classified under two heads, viz : I. *Archean* ; II. *Post-Tertiary* or Pleistocene.

1. *Archean System.* Crystalline limestones constitute the most prevalent rock at Galetta. They are for the most part light-coloured and coarsely crystalline, oftentimes assuming a decided coarsely saccharoidal texture. This rock weathers dark, chiefly owing to the growth of lichens, &c., and has been considerably used in the manufacture of lime for local use. On examination the limestone is seen to contain minute scales or crystals of mica, which are at times more extensively developed and form masses of rock in which mica predominates. Graphite or plumbago and iron pyrites also occur here and there in small quantities. Chondrodite is also present in the shape of amber-coloured crystals. This limestone thus would be a chondrodite limestone. The limestone is traversed by numerous dykes of what appears to be a true syenite or hornblendic granite. At times this rock occurs as a homogeneous paste with orthoclase felspar, quartz and hornblende, in about equal proportions, at other times the felspar and hornblende are separated and occur in layers, the hornblende forming the line of weakness in a vein, then next to this orthoclase felspar, then the homogeneous combination of the two with a resinous gray-coloured syenite. Galena, wollastonite, graphite, calcite, and mica, are associated with the crystalline limestone.

2. *POST TERTIARY.*—Formations belonging to the glacial epoch, to the later marine period and even to the still later period of elevation are evident at Galetta. Boulder clays overlying the glaciated and rounded hills, which are decidedly "moutonnees," are in turn capped by marine gravels and clays and these to-day afford the rich soil of the farms in the locality. Erratics may also be seen scattered in various directions, some of them nearly ten feet in diameter, these indicate a period when the Ottawa Valley was submerged and floating and shore ice were amongst the agencies at work in transporting the boulders.

All were much pleased with Dr. Ami's entertaining and instructive address.

Mr. Fletcher was then called upon, and spoke of some of the more interesting objects observed during the day. He showed specimens of ten different species of bivalves collected in half an hour at the Snye, and explained the formation of the shells of mollusks, the development from the egg and the changes gone through in the course of growth. He also spoke on some of the aquatic insects collected, paying particular attention to Caddis flies and a beetle, *Psephenus lecontei*, the interesting larva of which had been found in numbers under stones in the river.

The last speaker was Mr. Robt. Whyte, who is always listened to gladly by members of the club. He spoke in his usual entertaining manner, on the plants collected, and being in particularly good form on this occasion, the time for departure arrived all too soon, and there were many regrets that he could not have spoken longer upon some of the tempting specimens that he exhibited. Among the plants treated of, the following may be mentioned:—*Valisneria spiralis*, the "water celery" eaten so greedily by the Canvas-back and other wild ducks. The remarkable mode of fertilization of which was explained. *Shepherdia Canadensis*, showing the flower buds already formed for next spring also some thistles and asters which formed a conspicuous feature of the landscape, as well as some other composites, *Impatiens fulva* with its cleistogamous fertile flowers, the cardinal flower and many other woodland beauties too numerous to mention.

At 3:20 the speaking had to be stopped for the party to go to the train. At 4:30 the city was reached and all returned well satisfied with one of the most pleasant excursions the club has held this season. Great praise was accorded Mr. Shutt for the trouble he took in looking after everyone's comfort and the excellent manner in which he managed everything during the day. Mr. Ebbs of the C. A. R. and the polite conductor of the train, Mr. Roberts, were also gratefully thanked for their successful efforts to make everything as convenient and agreeable as possible for the party.

BOTANY.

Edited by JOHN CRAIG.

POTATO ROT.—The advantages of spraying potatoes with the Bordeaux mixture for the prevention of potato rot are well shown on the experimental plots now being dug at the Central Experimental Farm. The dry weather which prevailed throughout August and in the beginning of September gave conditions very unfavourable for the development of the parasitic fungus (*Phytophthora infestans*, DeBy.), which causes potatoes to rot; but the advantage, to those plants of which the foliage was kept green for some three or four weeks longer than on the untreated plots, is plainly shown by the far larger crop and the much better tubers. The reason of this is, of course, quite plain. On the untreated plots the leaves—the starch-making organs of the plant—were destroyed by the potato rust (which is merely another form of *P. infestans*) just at the time when they were required to collect and manufacture starch to be afterwards stored up in the tubers. In the case of the treated plants, on the other hand, these organs were preserved by the application of Bordeaux mixture and kept on performing their proper functions for another month, at the time of the year when this was of most importance to the crop; moreover, had the weather been wet during August and September it is probable that, not only would there have been a difference in the size of the tubers on the untreated plots, and consequently in the number of bushels reaped, but a large proportion of these would have been rotten. J. F.

SPRAYING TO PREVENT FUNGUS DISEASES.—Much has been said and written upon this subject since the practice was recommended some six years ago. Much remains to be learned, but great progress has been made, and the orchardist of the future will view spraying to prevent fungus and insect attacks in the same light as bearing upon the success of his fruit crop, as the intelligent grower of to-day does the important operations of cultivating and manuring.

Very satisfactory results have been attained by the horticulturist of the Experimental Farm in treating apples and pears for *Fusicladium dendriticum* “scab” or “spot”, and *Monilia fructigena* “soft rot” on plums and cherries. A comprehensive series of experiments was

planned and carried out with the co-operation of the fruit growers of the St. Catharines and Grimsby districts. Copper Sulphate, 1 lb. to 25 gallons of water, was used for the early treatment before the foliage appeared, this was followed with three applications of dilute Bordeaux mixture to which paris green was added for the prevention of Codling Moth attack.

In apples and pears the results in quantity of fruit are sufficiently marked as to be readily recorded by means of photographs. Wherever the foliage was preserved, the fruit is of course larger, and of fine quality and appearance. Fruit growers are much encouraged with the results. J. C.

VIRGINIA CREEPER.—It is not generally recognized among Horticulturists and nurserymen that there are two varieties of the Virginia Creeper (*Ampelopsis, quinquefolia.*) They are identical in every respect except in the manner of attaching themselves to the object over which they climb. The type is supplied like the grape vine with tendrils which twine round string or wire supports or become wedged in the crevices of rocks; on a smooth surface, as a brick wall however, it is helpless. Not so its kindred variety, which is distinguished from it by being provided with little disks or suckers at the tips of the tendrils and by means of which it is enabled like its cousin the "Japanese Ivy," to scale the smoothest surface. At this season of the year the crimson drapery of its leaves is very beautiful on grey stone walls. Both varieties are found wild, and can be multiplied by layers or cuttings. J. C.

ASTER NOVÆ-ANGLIÆ, L.—In the October number of the OTTAWA NATURALIST for 1892, mention was made of a beautiful variety of the New England Michaelmas Daisy, sent from Toronto by Dr. J. E. White, the flowers of which varied from pale mauve to deep lilac. This plant has been grown in the perennial border of the Botanic garden, at the Experimental Farm, and is now in full flower. Growing with it, are also magnificent plants of the type of the species with purple flowers and of the var *roseus*, these were also received at the same time from Dr. White, who collected the roots at Toronto.

A. Novæ-Angliæ, L. var *roseus*, Gray, is one of the most attractive plants in the border forming a large bush five feet high and three feet through, a mass of lovely rose-purple flowers. This is undoubtedly one

of the most desirable of all of our wild flowers for cultivation in gardens and will certainly become commercial before long.

ASTER MULTIFLORUS, Ait.—Fine specimens of this species are also now to be seen in full flower in the Botanic garden. The profusion of pure white flowers make this Michaelmas Daisy also a very desirable late-flowering garden plant. The roots were received from Toronto and Manitoba.

GEOLOGY.

Edited by DR. R. W. ELLS.

1. THE AGE OF THE NIAGARA RIVER.—There is still considerable diversity of opinion as to the probable age of the Niagara river. In *American Geologist* for September, Warren Upham computes the age of the Niagara River at 7,000 years (see p. 199); whilst Dr. Spencer places the same at 32,000 years.

2. MOUNT ST. ELIAS.—It is certainly gratifying to hear that the results of recent observations on the Alaskan boundary have proved this volcanic peak to be in British Columbia and not in Alaska. There are several peaks in that region which are higher than St. Elias, whose summit touches the clouds at 18,000 feet, amongst these is Mt. Logan, (called in honour of Sir Wm. Logan) the highest peak in North America. The altitude of Mt. Logan is 19,685 feet above the sea.

3. DEATH OF GEORGE H. WILLIAMS.—It is with feelings of deep sorrow that we have to chronicle the death of one of the foremost men in the ranks of geological science on this continent. In the August number of the *American Geologist*, p. 136, there is a brief obituary notice which is here given:—

“George Huntingdon Williams, Professor of Inorganic Geology in Johns Hopkins University and Vice-President of the Geological Society of America, died of typhoid fever, at his father's house, Utica, N. Y., July 12th, aged 38. Prof. Williams graduated from Amherst in 1878, and studied under Rosenbusch at Heidelberg, where he took the degree of Doctor of Philosophy, in 1882; the next year he became connected with Johns Hopkins and was associate professor there from 1885 to 1892, when he was appointed to the chair he held at his death. A number of the younger geologists of the country have studied under

him, and to them, as well as to all who knew him, the news of his death comes with special sadness."

Latterly Dr. Williams devoted special attention to the petrography of the rocks from the volcanic regions of America. He has contributed to science a large number of useful papers on various topics, a list of which will shortly be published in the *American Geologist*. With a number of our Canadian geologists Dr. Williams was intimately associated, not only by the nature of his studies, but also by his geniality and uniform kindliness. A great gloom is certainly cast by his death over the prospective meeting of the Geological Society of America at Baltimore, as his absence will be more than strongly felt. H. M. A.

4. NEPHELINE SYENITE IN ONTARIO. In the *American Journal of Science* 3, Vol. XLVIII, pp. 10-16, July, 1894, Dr. Adams, Logan Professor of Geology and Palæontology at McGill University, contributes an article entitled "On the occurrence of a large area of Nepheline Syenite, in the Township of Dungannon, Ontario." The region in question is there described as one in the midst of Laurentian rocks, and it is stated that this is the first discovery of Nepheline Syenite in the Laurentian System of Canada. This adds another to the list of the few localities in the world where Nepheline Syenite occurs. The Mount Royal outcrops of this interesting Rock of probable Devonian age, are well known and need not be referred to here.

The fact that this rock penetrates and cuts newer but palæozoic strata at Montreal and elsewhere, would lead us to look for outcrops of similar age, (right in the heart of the areas coloured Laurentian on our geological maps.

It is evident, however, that if the Nepheline Syenites of Mount Royal, Montreal, Quebec, are intruded through Cambro-Silurian Strata—they must also cut underlying Laurentian or Archæan rocks, and similar syenites ought to be looked for in Laurentian areas not overlain by palæozoic rocks. H. M. AMI.

WINTER SOIREEES.

The soirée committee is now preparing the programme for the winter meetings. Any members who wish to submit papers or short notes, will oblige by sending in their titles as soon as possible.



SUMMARY

— OF —

Canadian Mining Regulations.

NOTICE.

THE following is a summary of the Regulations with respect to the manner of recording claims for *Mineral Lands*, other than *Coal Lands*, and the conditions governing the purchase of the same.

Any person may explore vacant Dominion Lands not appropriated or reserved by Government for other purposes, and may search therein, either by surface or subterranean prospecting, for mineral deposits, with a view to obtaining a mining location for the same, but no mining location shall be granted until actual discovery has been made of the vein, lode or deposit of mineral or metal within the limits of the location of claim.

A location for mining, except for *Iron*, shall not be more than 1500 feet in length, nor more than 600 feet in breadth. A location for mining *Iron*, shall not exceed 160 acres in area.

On discovering a mineral deposit any person may obtain a mining location, upon marking out his location on the ground, in accordance with the regulations in that behalf, and filing with the Agent of Dominion Lands for the district, within sixty days from discovery, an affidavit in form prescribed by Mining Regulations, and paying at the same time an office fee of five dollars, which will entitle the person so recording his claim to enter into possession of the location applied for.

At any time before the expiration of five years from the date of recording his claim, the claimant may, upon filing proof with the Local Agent that he has expended \$500.00 in actual mining operations on the claim, by paying to the Local Agent therefor \$5 per acre cash and a further sum of \$50 to cover the cost of survey, obtain a patent for said claim as provided in the said Mining Regulations.

Copies of the Regulations may be obtained upon application to the Department of the Interior.

A. M. BURGESS,

Deputy of the Minister of the Interior.

DEPARTMENT OF THE INTERIOR,
Ottawa, Canada, December 1892.

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