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September, 1892

THE
* OTTAWA NATURALIST *

VOLUME VI. No. 5.

The
TRANSACTIONS.

Of the
* Ottawa Field-Naturalists' Club *

(Organized March, 1879. Incorporated March, 1884.)

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ADDITIONAL NOTES ON THE GEOLOGY AND PALÆONTOLOGY OF OTTAWA AND ITS ENVIRONS.

By Henry M. Ami, M.A., D.Sc., F.G.S., &c., &c.

INTRODUCTION.

The following notes comprise a brief sketch or resume of work done by the writer during the season of 1890 in connection with the Ottawa Field Naturalists' Club.

From my note book I find that no less than nineteen excursions and sub-excursions were held in various directions around Ottawa. Old Chelsea, Lachute, Casselman, Rockliffe, Moose Creek, Hull, Gloucester and several localities within the city limits, were visited and numerous forms of interest were gathered. The variety and quantity of material still to be discovered and described which the various geological terranes about Ottawa can afford are sufficient to satisfy as well as entice the student of Geology for years to come.

NOTES.

Old Chelsea.—On the 31st of May, Butternut Grove, Chelsea, was visited by about 125 members of the Club. The geological party, amongst whom were Prof. L. W. Bailey, of the University of New Brunswick, and Mr. H. T. Martin, of Montreal, visited the magnificent outcrops of crystalline limestone at the ravine, near Old Chelsea, and brought back an interesting suite of specimens illustrating the character of the belt of Archæan rocks in that district. Specimens of apatite, asbestos, serpentine, pyroxene, wollastonite, gneiss, diabase, and numerous other rocks were obtained and described by some of the leaders on the spot.

Lachute.—On the 7th of June, a joint excursion of the Natural History Society of Montreal and of the O. F. N. C. was held in the picturesquely situated town of Lachute, Que., where the geological section was put in charge of Mr. McOuat, B.A., and the writer. The Laurentian and Carboniferous horizons were visited and a number of the characteristic fossils from the latter terrane were observed in the collections, which, as judge in the awarding of prizes, I had an opportunity of examining. *Ophileta compacta*, Salter, (*O. complanata*, Vanuxem), *Pleurotomaria Canadensis*, Billings, *Murchisonia Anna*, Billings, and fragments of other forms were noted.

Mr. Whiteaves, of our Club, gave a graphic description of the geological structure of Lachute and its vicinity, whilst the writer was called upon to read the results of the competition in geology.

Casselman.—On the 21st of June over 100 members and friends of the Club visited Casselman, a favourite locality for all branches of our Club's work, along the line of the Canada Atlantic Railway, and a considerable amount of work was done in the *Trenton* and *Quaternary* deposits there exhibited. Quite a list of Trenton fossils was obtained and specimens of pottery and an arrow-head together with bones of the beaver and other creatures were found close to where on previous occasions numerous collections of Indian relics had been made. The old aboriginal fire-place, in which debris of pottery, bones, charcoal, and Indian remains were found, had been washed away by the high water and spring floods. This locality is a most interesting one, and careful research may reveal unexpected treasures in Ethnological studies.

Hog's Back, Rockliffe, &c.—The Chazy terrane which offers such an interesting field for research about Ottawa, was visited, at Hog's Back, in Nepean, and at Rockliffe, below Governor-General's Bay. Interesting rocks and trails of marine animals, some of which are perfectly new to science, and others resemble the *Protichnites* of Sir Richard Owen described in the Quarterly Journal of the Geological Society, London, from the Potsdam of Canada, were obtained and preliminary studies of them have been made.

The Trenton rocks of Governor General's Bay, Moose Creek, and the Beaver Meadow were also visited at sub-excursions and notes taken at each of these localities as to the character of the rocks, dip of the strata and fossil remains contained therein.

Gloucester.—The Utica terrane in the vicinity of the Rideau River rapids opposite the Rifle Range in Gloucester was again visited. I was fortunate enough in finding two more examples of the *Turrilepas Canadensis*, recently described by Dr. Woodward in the Geological Magazine, and it is expected that these additional representatives of that antique style of barnacle will through some light on the type specimen found at the same locality in 1888.

The Tethæoid sponge from the Utica which I had found in the excavations on Albert street in 1888 and in rocks of the same horizon

on the Montreal Road about 200 yards east of the St. L. & O. Ry. crossing and noted in the last Report of the Geological Branch, has been since referred to Dr. George Jennings Hinde of Croydon, Eng., the best authority on fossil sponges, and he has described it in the "Geological Magazine" for January 1891, pp. 22 to 24. under the name of *Stephanella sancta*, (N. gen. et n. sp.)

This species along with *Brachiospongia digitata*, Owen, *Astylospongia parvula*, Billings, *Steliella Billingsi*, Hinde, *Steliella crassa*, Hinde, and *Hyalostelia* sp. from the Trenton of Ottawa, comprise most of the ancient sponge fauna occurring in the Ordovician Seas known from this region.

Moose Creek.—The Pleistocene deposits of Moose Creek, Green's Creek, Experimental Farm and Casselman were examined in several cases in detail and interesting notes obtained ;—

At Moose Creek the following species were obtained in the stratified gravels north of the C. A. R. track :—

1. *Tamias striatus*, Linn.
2. *Mytilus edulis*, Linn.
3. *Macoma fragilis*, Fabricius,
4. *Macoma calcarea*, Chemnitz.
5. *Saxicava rugosa* Linn.
6. *Balanus crenatus*, Bruguiere.

Mr. Walter S. Odell, one of the recent and valuable additions to the membership of our Club, brought to my notice several specimens of fossils from the 'Leda' clays of Odell's brick yard, just S.E. of Ottawa city, and amongst the forms examined there were bones of the seal, and fine specimens of a fossil sponge, besides foraminifera.

LIST OF FOSSILS FROM THE CLAYS OF ODELL'S BRICKYARD

1. *Phoca Groenlandica*, Mueller.
2. *Tethæa Logani*, Dawson.
3. *Saxicava rugosa*, Linnæus.
4. *Polystunella crispa*.
5. *Dentalina* sp.
6. *Eschara elegantula*, d'Orbigny.

Besides the above notes on specimens and excursions, as well as

localities visited, Montebello and Kirk's Ferry, on the North shore of the Ottawa, were visited, and interesting collections and notes taken at both places.

Montebello.—At Montebello on the 19th July, and through the kindness of Mr. L. J. Papineau, who placed his yacht and services at the disposal of the Geological Branch, an interesting exposure of the Potsdam terrane, showing rippled-marks in abundance, besides the tracks and trails of marine animals (*Protichnites septemnotatus*, Owen), was visited on the Presqu'île north of Squirrel Island. This exposure of the Potsdam presents a bold bluff of from ten to twenty-five feet front in height, above low-water mark at this time of the year, facing the north or Laurenade Hills, clearly indicating the existence of an open and free channel from east to west in Pre-glacial times. The sandstones were beautifully glaciated in several places, and showed that the march of the old glaciers was at right angles to the present flow of the Ottawa, and in a north and south direction, down from the adjoining slope to the north.

Kirk's Ferry.—At Kirk's Ferry, up the Gatineau River eleven miles, a most successful excursion was held, and the magnificent rock cuts along the Gatineau Valley Railway afforded excellent opportunity of examining the relations of Archæan rocks of various kinds, in close contact and at times fused one into the other. Crystalline limestones, graphite, opHITE, calcite, diorites and pyroxenites, as well as apatite and mica, were collected. This region and cutting is well worthy of close attention on the part of the petrographical geologist.

RADIOLARIANS.

In May, 1890, I prepared a number of specimens of rock from the Shales of the Utica, in Gloucester, from the limestones of the Trenton, Ottawa, and also from the calcareo-arenaceous shales of the Chazy of Nepean, for Mr. Tyrrell, who was sending away to Dr. Rust, in Germany, specimens of radiolarian rocks from Manitoba and the North-West. Mr. Tyrrell has since heard that the Ottawa specimens have been examined, but no radiolarians were found therein.

Although this note is negative, still it shows that probably these low organisms in the economy of nature were absent in the Ordovician seas of the Ottawa Palæozoic Basin.

CRINOIDS.

Mr. John Stewart, of our Club, whose collections of crinoids and blastoids from the Trenton of Ottawa have recently been purchased by the Geological Survey Department and placed on exhibition in the Museum, informs me that he has cleaned and prepared *twenty-five* more specimens to show the cup, arms and pinnules. The great care, industry and skill which Mr. Stewart has displayed in developing these "stars" and "lilies" of the old abyssal depths in our district are worthy of much commendation and eulogy.

OSTRACODA.

Amongst the new forms of ostracoda recently described by Prof. Rupert Jones, F.R.S., we find the following species from Aylmer and Ottawa. These forms were collected by Messrs. W. R. Billings, T. W. E. Sowter and the writer, of our Club.

1. *Primitia Logani*, Jones, Aylmer, Que.
2. *Beyrichia clavigera*, Jones, " Que.
3. " var. *clavifracta*, Jones, " Que.
4. *Isochilina* Ottawa, Jones, var. *intermedia*, Jones, Ottawa; Ont.
5. " *labellosa*, Jones, Aylmer, Que.
6. *Leperditia Balthica* (Hisinger), var. *primæva*, Jones, Carleton Co.
7. " sp. (cf. *L. Hisingeri*), Aylmer, Que.

Of the above, only *Primitia Logani*, Jones, is referred to the Trenton terrane, the others and this form are all Chazy species.

In the "Journal of the Cincinnati Society of Natural History," Prof. E. O. Ulrich, well known to several members of our Club, has described the new species of Ostracod from Ottawa and also a variety of the same species from the same block of impure limestone. The specimen sent contained abundance of individuals of an *Isochilina*, besides a *Cyrtodonta* or allied genus of lamellibranchiate mollusks—all from the Chazy.

Prof. Ulrich, on pp. 44 and 45 of his paper on "*New and Little Known American Palæozoic Ostracoda*," and on Plate XI., figs. 12a, 12b, 12c and 13, has described the following forms and named them after one of our Club:—

1. *Isochilina Amiana*, Ulrich.
2. *Isochilina Amiana*, var. *insignis*, Ulrich.

Both forms occur together and were collected on Sussex Street, Ottawa, from a block of erratic limestone of Chazy age, showing marks of glacial action, having come from the "till," or "boulder clay" of the vicinity.

It is the purpose of the writer to present to the Club through the pages of the *NATURALIST* a suite of articles on some of the best fossiliferous localities in Ottawa and Hull for the use of collectors and students in Geology.

—————:O:—————

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, EDINBURGH, SCOTLAND.

The 61st meeting of the British Association for the Advancement of Science was held, in Edinburgh, Scotland, under the presidency of Sir Archibald Geikie, F. R. S. etc. Director of the Geological Survey of the United Kingdom, Aug. 3rd, 1892.

This year is the *one hundredth* anniversary of the publication of Hutton's "Theory of the Earth" which is admitted to be the first plausible and rational view presented of the upbuilding and construction of the Earth's crust. It sought to account for such diversity of phenomena, formations and strata as were visible on the Earth's surface at the present day, in the changes which are now taking place. By applying this rule *in retrospectu* Hutton was able to account for the different formations now visible.

Sir. Archibald then went on to describe the various points of indebtedness which modern geologists still owe to Hutton and the Huttonian School; the "high antiquity of the Earth," the explanation of olden time phenomena by present ones, the progression in organic types, &c., &c., which with views held by Sir James Hall, William Smith, Kelvin, Playfair and others, placed the main results and leading objects in view on a scientific and practical basis.

Many opposing forces had to be met. Preconceived notions, theories and so-called orthodox views of learned men of the days of Hutton, all assailed the new theory. But it was founded on facts and

hard facts which told a tale of paramount importance and exciting interest, revealing in each formation of the Earth's crust pages of unwritten history: it was the Earth telling its own tale.

Sir Archibald Geikie then pointed out the salient conclusions which had been already arrived at, with reference to the boundless antiquity of the globe, presented Lord Kelvin's views as to the limit of time that may be assigned to our planet's antiquity. "He estimated that the surface of the globe could not have consolidated less than 20 millions of years ago, for the rate of increase of temperature inwards would in that case have been higher than it actually is; nor more than 400 millions of years ago, for then there would have been no sensible increase at all." "One hundred millions of years" was regarded by him as the probable amount of time which embraces the Geological history of the globe."

These calculations, Sir Archibald holds, "may require revision," and states "that there must be some flaw in the physical argument." From his own observations on "degradation" or "denudation," the erosion of rocks and deposition of sediments, he has reached the conclusion that "the rate of deposition of new sedimentary formations over an equivalent area of sea-floor, may vary from one foot in 720 years to one foot in 6,800 years."

Then the "slow progress of organic variation" is discussed, giving its quota of evidence in support of the antiquity of the world. Precise data are wanting in this particular. "We know, says the distinguished geologist, "that within human experience a few species have become extinct, but there is no conclusive proof that a single new species has come into existence, nor are appreciable variations readily apparent in forms that live in a wild state." He then instances the seeds and plants found with Egyptian mummies being precisely the same as those of modern Egypt. This negative evidence, of no change, is an important factor in the problem, and indicates the lapse of an enormous interval of time sufficient to modify forms of shells, etc.

With reference to this problem and the Ice Age on which Sir Archibald Geikie has so ably and oftentimes written, he says: "If the many thousands of years which have elapsed since the Ice Age have pro-

duced no appreciable modification of surviving plants and animals, who vast a period must have been required for that marvellous scheme of organic development which is chronicled in the rocks? After careful reflection on the subject I affirm that the geological record furnishes a mass of evidence which no arguments drawn from other departments of nature can explain away, and which, it seems to me, cannot be satisfactorily interpreted save with an allowance of time much beyond the narrow limits which recent physical speculation would concede." In conclusion the President referred to the geological features of Edinburgh, which had furnished so much material for enjoyment during his life.

H. M. A.

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BOOK NOTICE.

THE CULTIVATED NATIVE PLUMS AND CHERRIES (BULLETIN 38. CORNELL UNIVERSITY EXPT. STATION, JUNE 1892.) BY L. H. BAILEY.

In this monograph of 73 pages Prof. Bailey has embodied a large amount of practical information as well as accomplished the very difficult task of making a thorough classification of our native Plums and Cherries.

With plums the work has been particularly complicated, and only the most patient study and research could have been rewarded by such gratifying results.

Up to the present time our cultivated native varieties have been roughly assigned to three wild types. (1) *Prunus Americana*, Marshall the plum of the north and west (2) *Prunus angustifolia*, Marshall, or *P. chickasa*, Michx, native of the middle and Southern States and (3) *Prunus maritima*, Wangheim, known as the Beach plum of the south. Much confusion existed however as many of the cultivated forms could not be satisfactorily assigned to any of these original types. Prof. Bailey says, "There has been no attempt so far as I know, to make a comprehensive study of these fruits and as a consequence our knowledge of them is vague and confused. In fact, the native plums constitute probably the hardest knot in American pomology. Their botanical status is equally unsatisfactory and the group is one of the most inextricably confused of any of equal extent in our whole flora." As a result of

the author's labours we shall recognize hereafter another class, known heretofore as the Wild Goose group, under the name of *Prunus hortulana* and falling under this as a variety the Miner, a plum of considerable value to us in the north. This group is assigned an intermediate position between *P. Americana* and *P. chickasa*. To these three groups belong practically all our cultivated native varieties in Canada. The origin of the *marianna* and *myrobolan* varieties, which are now so generally used as stocks for budding and grafting, is ably discussed. By most authors these are supposed to be of American origin, Prof. Bailey however traces them to Europe and points to a common parentage.

The Beach plum has as yet given us no cultivated varieties of any value. In this work we have the only authentic account of "an undoubted hybrid" between Troth's Early beach and the Wild Goose plum. "The leaves are long and peach like, although rather broad and short-pointed but the flower buds, although they form in profusion, never open, so the tree is barren".

The Bulletin also discusses, stocks for the propagation of and the fungus diseases of the plum. Concluding the author fitly remarks that the native plum industry has made astonishing progress and it has already assumed large proportions. It is certain to occupy a large place in future American horticulture." In discussing the native cultivated cherries the author is of the opinion that two or possibly three species are being grown under the name of *Prunus pumila* the sand cherry of the north and west. This is the only wild form which has gained much prominence under cultivation. In the north western States it is now being grown to a considerable extent, and under cultivation is said to be very susceptible to improvement. Other native species are discussed though their fruit does not appear at present to be of economic value.

Such Bulletins elevate the character of Experiment station research in horticultural lines, are of exceeding interest to the intelligent fruit grower and are fundamentals to a sound basis for the building of a correct nomenclature of our American Pomology.

JOHN CRAIG,
Horticulturist, Central Experimental Farm.

THE GEOLOGICAL SOCIETY OF AMERICA.

The *Fourth Annual and Summer Meeting of the Geological Society of America* was held last week in Rochester, N. Y., and in connection with the *Forty first Meeting of the American Association for the Advancement of Science*.

There were upwards of fifty fellows present. Monday and Tuesday, August 15th and 16th, were the days set apart for the reading and discussion of papers. The warmest and most animated discussion took place on the second day—when two papers on the “Ice Age,” by Messrs. Warren Upham and G. Frederick Wright, well known glacialists, were taken up. Mr. Upham’s paper was a detailed description of the origin, mode of formation and “conditions of accumulation of Drumlins,” illustrated with numerous diagrams and figures of various forms met with in different districts. Drumlins were made up of *en-glacial* drift material accumulated rapidly and during the departure of the ice close to the border. The author referred to the irregularity of the drumlins as puzzling. The relation of drumlins to the terminal moraine was also discussed, as also the different shapes drumlins assume owing to the conditions under which they are accumulated.

Prof. G. F. Wright’s paper then followed on the subject: “The extra-morainic drift of the Susquehanna Valley.” This so-called “fringe” of the long, great terminal moraine was of much importance and significance. Its remote antiquity was discussed. A detailed account of careful observations made by the author in the Valley of the Susquehanna was then given. In the discussion which followed both papers Messrs. Gilbert, McGee, Salisbury, Upham, and Wright took part.

Prof. C. H. Hitchcock’s “Studies of the Connecticut Valley Glacier,” also proved of considerable interest.

Prof. James Hall, the veteran paleontologist of North America, who was the first to welcome us on arriving at Rochester, received a very hearty reception on presenting his paper “On the Oneonta Sandstone; its relations to the Portage, Chemung and Catskill Groups.” This was a remarkable paper in which the correlation of strata by lithological or petrographical characters as well as of faunas by paleontological characters was rendered difficult by the variety and number of formations

and faunas in the State of New York, characterizing the close of the Devonian epoch. The equivalencies in time and true relations of the faunas were clearly delineated, and much satisfaction with new light resulted from the observations made by Prof. Hall. Messrs. I. C. White, E. W. Clappole, J. J. Stevenson, and others took part in the discussion.

“On the dentition of *Titanichthys* and its allies,” was the subject of an interesting paper by Prof. E. W. Clappole, giving the result of his observations on the jaws of the gigantic fish which existed in Devonian times. An important matter relating to Devonian fishes came up at this meeting of the Geological Society, regarding the mode of occurrence or origin and habitat of the Devonian fishes. Were they *freshwater* or *marine* fishes? Were they lacustrine or sea fishes. Prof. J. J. Stevenson argued for their marine character, and Prof. Clappole for their freshwater nature. A revision of the evidence on this point is necessary before a conclusion can be arrived at.

Other papers read were as follows:—

Lawrence C. Johnson.—Notes on the Phosphate Fields of Eastern Marion and Alachua Counties, Florida.

G. F. Becker.—Finite homogeneous strain, flow and rupture of rocks.

Wm. H. Hobbs.—Phases in the metamorphism of the schists of Southern Berkshire.

Charles L. Whittle.—Some dynamic and metasomatic phenomena in a metamorphic conglomerate in the Green Mountains.

G. C. Broadhead.—The Ozarks and the geological history of the Missouri Palaeozoic—10 minutes.

David White.—A new *Taeniopterid* fern and its allies—10 minutes.

A. S. Tiffany.—The overturn of the Lower Silurian Strata in Rensselaer County, N.Y.—5 minutes.

Ancient Waterfalls.—7 minutes.

Of these last seven some were read by title others *in extenso* and others were briefly sketched out. Mr. David White's paper on a new *Taeniopterid* fern was a pleasing contribution to Palaeobotany and showed those present how exceedingly careful a palaeobotanist has to be in separating portions of the same plant, parts of which at times resemble

one constituted genus and at other times an altogether different one.

NOTES.

At a meeting of the Council of the Geological Society of America held on Wednesday, Aug. the 27th, it was decided to accept the invitation to visit Ottawa at the coming meeting to be held in December.

The Royal Society of Canada and the Logan Club of Ottawa made up of the scientific staff of the Geological Survey Department, had both sent an invitation to the Geological Society.

Accordingly, the Ottawa brethren of the hammer may expect a large attendance of geologists from all parts of the North American Continent in December. The Geological Society of America numbers some 250 Geologists, all of whom are actively engaged in Geological work.

Ottawa is especially favoured as a centre of geologic interest, both on account of the Geological Survey Department having its headquarters here and the Museum of economic minerals and palæontology being located at the Capital.

H. M. A.

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ENTOMOLOGY.

Edited by W. Hague Harrington.

Among the more conspicuous plants of the August landscape may be indicated Golden-rods, Mulleins, Thistles and Milk-weeds, each of which nourishes insects peculiar to itself.

The various species of *Solidago* make gay the fields and woodsides with myriads of golden plumes to which resort many insects of various orders, and especially of Hymenoptera. Here the honey bee may be found industriously working, in company with many wild relatives, as *Bombus*, *Megachile*, *Andrena*, *Apathus*, etc., while numerous kinds of fossorial wasps, etc., are generally abundant.

Occasionally on the leaves may be observed a small gourd-shaped black case, attached firmly by its neck. This is constructed by the larva of a small chrysomelid beetle, *Exema gibber*, which may be captured by beating or sweeping the flowers, but its little black wrinkled form is liable to be overlooked in the net, from its resemblance to the

excrement of caterpillars. It is placed on the Ottawa list for the first time this year, several specimens having been obtained near Dow's Swamp, on Saturday, 26th August.

Phymata Wolffii, a peculiarly shaped bug, with robust raptorial fore-legs, often lies in wait among the flowers for bees and other insects. It was quite abundant at Casselman on one occasion (8th Aug.) when the Club visited that point, but none have been observed about Ottawa this season.

The Mullein is able to nourish its broad flannel leaves and tall spikes of yellow flowers in thin and stony fields, where even the thistle is starved out. It is not much attacked or frequented by insects, but a small stout weevil, or snout-beetle, *Gymnæron teter*, infests the seed-vessels. The larvæ and pupæ may generally be obtained from the nutlets, and they were especially abundant this year in mulleins growing along the gravelly beach at Aylmer. On some spikes there was hardly an uninfested nutlet.

Probably fifty per cent. of the seeds of the common Canada thistle are devoured by the maggots of a two-winged fly, *Trypeta juncescentæ*, whose presence may be detected by the irregular appearance of the down, or pappus, on plucking which it comes away without the seed and is found all matted together at the base and containing one or more yellowish maggots or pupæ, which are those of the beneficial fly.

A parasite of the fly is also very common and destroys a large proportion of the maggots. It belongs to the genus *Solenotus* of the Chalcididae, and has been named by Hr. Ashmead *S. Fitcheri*, but its description has not yet been published.

From the infested heads are also bred numbers of another small chalcid, very similar in appearance to the *Solenotus*. Mr. Ashmead, who has described it in the Canadian Entomologist, considers it to be a secondary parasite.

Upon the Milkweeds at this season a very handsome greenish-black beetle with orange markings is not uncommon. It is of the same size as the Colorado potato-beetle, to which it is closely allied, and has received the name of *Doryphora chlorocollis*.

A handsome black and scarlet bug, *Lygaeus Kalmii*, is also abundant, but the strong odour which it emits, in common with many hemiptera, makes its capture and investigation somewhat unpleasant.

Earlier in the season there might be found upon these plants two other insects peculiar to *Asclepias*, viz., a longicorn beetle, *Tetraopes tetraopthalmus*, red with black spots, the larvæ of which feed in the roots or lower stems, and the larva of the big Milkweed butterfly, *Danaïis archippus*, a conspicuous caterpillar strikingly ornamented with narrow yellow, white and black bands.

Members sometimes enquire as to the time for collecting caterpillars, so it may be noted that just at this season the larvæ of many of our larger moths attain maturity, and thus very interesting species can be easily secured.

Among caterpillars which have been unusually abundant this summer may be mentioned that of *Leucærtia acraea*, the so-called Salt-marsh caterpillar, which, however, is not confined to the sea-coast, but has been more or less destructive all over the country.

This is also a good season to examine for galls the oaks, hickories, willows, golden-rods, *Lactuca*, *Nabalus*, sumac, asters, etc., etc.

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ORNITHOLOGY.

Edited by A. G. Kingston.

ROBINS AS DESTROYERS OF HAIRY CATERPILLARS AND WHITE GRUBS.

One of the large Woolly bear Caterpillars (*Leucærtia acraea*) has been unusually abundant at Ottawa this year, Mr. Fletcher reports having seen Robins on several occasions eating these caterpillars. They are not eaten at once; but are shaken and rubbed in the grass and on the ground for a minute or two when most of the long hairs are found to be removed. By running out suddenly the birds were on two or three occasions driven off and their victims examined. The same birds were also noticed doing good work on lawns by destroying the larvæ of the May-beetles the injurious White Grubs.

THE CHIMNEY SWIFT

Our local colony of these singular birds, swollen by the large number of young hatched during the present season, appears to have its quarters at the Western Departmental Buildings too crowded for comfort. On the evening of 27th August a considerable flock was observed circling in their usual manner above the City Hall and finally descending into a small ventilating tower on the north side of that building. These

birds have generally shown themselves intensely gregarious, and it is quite unusual for them to over-flow in this manner.

SWALLOWS.

The recent autumn-like weather with clear or cool nights and heavy dew has so shortened the supply of insect-life that most of the birds which take their food upon the wing are now showing evident signs of speedy departure. In various parts of the city large assemblies of Purple Martins have been observed wheeling for hours over some favourite district. Occasionally they may rest for a while perched in long ranks upon the Telephone wires, but each member when addressing the house rises to the wing and from the solemnity and yet earnestness of the whole proceeding it is clear that business of importance is being discussed.

When we recollect that 60 or 70 days hence must find them in Central or even South America, that this journey is to be made through all the tempestuous weather of autumn, and with a failing food-supply, and that more than one half of the company, the young of the year, are entirely without experience of long flights, it will be seen how great responsibility rests upon the leaders in these great migrations.

The last week of August generally sees the departure of these and all the other species of swallows except the White-belly (*Tachycineta bicolor*). The latter the hardiest of all the family arrives a week earlier, stays at least as much later, and makes its winter home no further south than Louisiana and Mississippi.

—:o:—

BOTANY.

The following Rules for Botanical Nomenclature were drawn up at the recent meeting of the A. A. A. S. at Rochester, and will, we feel sure, be read with interest by our Botanists.

THE NEW RULES FOR BOTANICAL NOMENCLATURE.

The Botanical Club of the American Association for the Advancement of Science at a meeting held Aug. 19th. 1892, adopted these principles of Nomenclature: *Resolved*: That the Paris code of 1867 be adopted except where it conflicts with the following:

1. THE LAW OF PRIORITY — Priority of publication is to be regarded as the fundamental principle of botanical nomenclature.

2. BEGINNING OF BOTANICAL NOMENCLATURE.—The botanical Nomenclature of both genera and species is to begin with the publication of the first edition of Linnæus's "Species Plantarum," in 1753.

3. STABILITY OF SPECIFIC NAMES.—In the transfer of a species to a genus other than the one under which it was first published the original specific name is to be retained, unless it is identical with the generic name or with a specific name previously used in that genus.

4. HOMONYMS.—The publication of a generic name or a binomial invalidates the use of the same name for any subsequently published genus or species respectively.

5. PUBLICATION OF GENERA.—Publication of a genus consists only (1) in the distribution of a printed description of the genus named, (2) in the publication of the name of the genus and the citation of one or more previously published species as examples or types of the genus, with or without a diagnosis.

6. PUBLICATION OF SPECIES.—Publication of a species consists only (1) in the distribution of a printed description of the species named, (2) in the publishing of a binomial, with reference to a previously published species as a type.

7. SIMILAR GENERIC NAMES.—Similar generic names are not to be rejected on account of slight differences, except in the spelling of the same word; for example *Aplos* and *Apium* are to be retained, but of *Epidendrum* and *Epidendron*, *Asterocarpus* and *Astrocarpus*, the later is to be rejected.

8. CITATION OF AUTHORITIES.—In the case of a species which has been transferred from one genus to another the original author must always be cited in parenthesis, followed by the author of the new binomial.

JOHN M. COULTER,
WILLIAM A. KELLERMAN,
LUCIEN M. UNDERWOOD,
LESTER F. WARD,

N. L. BRITTON,
HENRY H. RUSBY,
FREDERICK V. COVILLE,
Committee.

EXCURSION No. III. TO LA PÊCHE.

As noticed in the last number of the NATURALIST the next Excursion has been arranged to take place on Saturday, the 3rd September. The party will leave the C. P. R. Union Station at 10 a.m. by the Gatineau Valley Railway, and will reach the city again by 7 o'clock in the evening.

Tickets, Members.....	50 cents.
" Non-Members.....	60 "
Children of Members.....	25 "
" Non-Members.....	30 "

Tickets can be obtained at the Station.



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* or *Petroleum*, shall not be more than 1500 feet in length, nor more than 600 feet in breadth. A location for mining *Iron* or *Petroleum* 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 farther 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 19th, 1887. }

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