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VOL. XVIII, No. 1

THE OTTAWA NATURALIST.

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Being Vol. XX. of the

TRANSACTIONS

OF THE

OTTAWA FIELD-NATURALISTS' CLUB,

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OTTAWA, CANADA:
OTTAWA PRINTING COMPANY (LIMITED).
1904.

THE OTTAWA FIELD-NATURALISTS' CLUB, 1903-1904.

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THE OTTAWA NATURALIST.

VOL. XVIII. OTTAWA, APRIL, 1904. No. 1

THE REPORT OF THE COUNCIL OF THE OTTAWA FIELD-NATURALISTS' CLUB FOR THE YEAR ENDING 15TH MARCH, 1904.

During the year twenty-one ordinary members and one honorary member were added to the Club. The total membership is now 266, composed of 258 ordinary members and eight corresponding.

SOIRÉES.

All the soirées except the last have been held and have proved interesting and profitable; the attendance being up to the average. The full programme was printed in the March number of THE NATURALIST. The first meeting was of special interest, as it was held to celebrate the twenty-fifth anniversary of the founding of the Club. The speakers were all members of the first Council, and each told briefly of some of the many changes that have taken place during the past twenty-five years, and the part the Club has taken in directing and leading scientific thought in the community —a record which fully justifies the Club's right to exist, and one which should command the hearty sympathy and support of all intelligent people.

EXCURSIONS.

Nine sub-excursions were held during the year at which the attendance varied from twenty to two hundred. These excursions were to places in the immediate vicinity of Ottawa and were highly successful. Special attention was given to the forest trees, their mode of growth and the various means of identifying them, especially by the buds. The two general excursions were to Chelsea and Alymer, the former, held the 16th of May, was attended by over three hundred members and friends of the Club,

and altogether was one of the most successful ever held at that beautiful place; the latter to Aylmer although successful was not so largely attended. These excursions form the most important part of the Club's work. The outings themselves are most healthful and enjoyable, but when to the pleasure of a tramp through the open glade or leafy forest is added an opportunity of observing or learning something of the beauty that abounds in every rock, plant or insect, the outing is doubly beneficial. These excursions give an excellent introduction to Nature Study, about which so much is written at the present time. Full accounts of the localities visited and the work done at these outings have appeared from time to time in THE OTTAWA NATURALIST.

THE OTTAWA NATURALIST.

The seventeenth volume of THE OTTAWA NATURALIST has been completed. It contains twelve numbers of 228 pages with eight plates. The following are some of the papers published in this volume:

Yukon Hepaticæ, by A. W. Evans.

The Nesting of Birds at the Central Experimental Farm, by W. T. Macoun.

Description of a new species of Matheria from the Trenton Limestone at Ottawa, by Dr. J. F. Whiteaves.

The Beetles of the Oregon Beach. by H. F. Wickham.

A Red-shouldered Hawk in Captivity, by Roger T. Hedley.

Curiosity of a Hummingbird, by Dr. C. Guillet.

Moose with Elk Antlers, by Rev. Wm. A. Burman.

Description of a species of Cardioceras from the Crows Nest Coal Fields, by Dr. J. F. Whiteaves.

Nesting of some Canadian Warblers (3rd paper), by Wm. F. Kells.

Hunting for Caterpillars, by Arthur Gibson.

Petrography of some Igneous Rocks of the Kettle River Mining Division, B.C., by L. P. Silver.

Notes on the Nesting Habits of the Brown Creeper and Hudsonian Chickadee, by L. M. Terrill.

My Pet Crows, by L. H. Smith.

Winter Growth of a Water Lily, by Walter S. Odell.

Notes on some Canadian specimens of "Lituites undatus" (2 papers), by Dr. J. F. Whiteaves.

A Robin Story, by Emery Perrin.

The Lower Jaw of Dryptosauras incrassatus (Cope), by Lawrence M. Lambe.

A Weed Worth Growing, by Dr. James Fletcher.

Biological Notes on Canadian species of Viola, by Theo. Holm.

Remarks on some Marsh Dwellers, by L. M. Terrill.

A Woman's Visit to a Peat Bog, by Miss M. McKay Scott.

Our Eagles and Ospreys, by Rev. C. J. Young.

President's Address, by W. T. Macoun.

Some Canadian Antennarias, by Edw. L. Greene.

A Night's Collecting for Moths at Meech Lake, by Arthur Gibson.

Besides several short articles, book reviews, etc.

An important series of articles on Nature Study, edited by Dr. J. Fletcher, have been published each month, beginning with May, 1903. They were written by Dr. James Fletcher, D. A. Campbell, Dr. S. B. Sinclair (2 papers), W. A Dent, A. E. Attwood, Professor W. Lochhead, Dr. G. U. Hay, W. T. Macoun, L. A. DeWolfe, and J. W. Hotson. A large number of copies of each article was printed and distributed to teachers throughout the Dominion. These articles presented Nature Study from various points of view, and have doubtless proved of great value to those interested in the subject. They have proved so popular that a special committee of Council has decided to continue the publishing of these articles.

REPORTS OF BRANCHES.

The Botanical Branch reports as follows :—

"Good work has been done by the Botanical Branch during the past year. Professor J. Macoun, in his official capacity, spent the whole summer in Ottawa and vicinity studying the flora of the district, but especially the fungi for Part VIII of his Catalogue of Canadian Plants. He added over two hundred species to the Ottawa flora. Dr. James Fletcher has continued his studies of violets and has done good work in growing the different species

so that they could be studies at all stages of their growth. Dr. Guillet has continued his phenological observations, and has also made a study of the character of the past two springs as affecting the growth of plants. The studies of Mr. D. A. Campbell in the morphology of plants have also been of much value.

The regular fortnightly meetings of the Botanical Branch held at the homes of the members have proved a great success. These meetings were inaugurated by Dr. James Fletcher, the first one being held at his house on February 5th, 1903. The object of starting them was to keep up and promote an interest in botany among the members, and give an opportunity for the reading of notes and short papers on botanical subjects, and to have a general discussion on any matter which might be brought up by the members. Two meetings were held last year and fourteen this year, making sixteen in all, with an attendance of from ten to thirteen at each meeting. Many interesting subjects were discussed and much information was given. Full reports of nearly all of the meetings have been printed in THE OTTAWA NATURALIST. The following are some of the more important topics discussed. The advisability of sub-dividing the Ottawa district into four areas; What is Nature Study?; Canadian violets; Reasons for the "rosette" arrangements of leaves at the base of some plants at a certain period of their growth; Weeds and the causes that lead to their dispersion; Native plants which compare favorably in appearance and succeed as well as Exotic plants: How to know the edible and poisonous fungi; How to study ferns; Relationship between weather and plant growth—a comparative study of the last two springs; Besides these many other subjects were discussed.

The leaders of the Geological Branch report that no systematic work has been carried on during the past year in the vicinity of Ottawa. Leaders in this branch, however, attended the excursions and assisted as far as possible in explaining the Geological problems presented by the different localities visited. It was noted with pleasure that a larger number than formerly joined the Geological section on these occasions.

The members of the Entomological Branch, although few in number, have been very active during the past year. The regular

fortnightly meetings mentioned in last year's report were kept up during last spring and the present winter. Several interesting papers were read and considerable enthusiasm was engendered among the members of the Club. There has been a renewed activity in collecting and studying the insects of the Ottawa district, and good work has also been done by outside members. Mr. W. Metcalfe has taken up and made good progress in studying the local Hemiptera, many of which have been identified by Mr. Van Duzee. The Rev. G. W. Taylor, of Wellington, B.C., has amassed one of the best reference collections of the Geometridæ of North America, and has rendered great assistance in identifying specimens for collectors. The leaders have all been exceptionally active and large additions have been made to the local lists of insects.

The Ornithological Branch report that the leaders attended the excursions and pointed out the chief characteristics of the birds seen and aided those interested wherever possible, and also that through the help of the Hon. Frank Latchford arrangements have been made for the appointment of a special official to enforce the Provincial Act which prohibits the destruction or trapping of useful birds.

The Treasurer's Report shows a balance on hand of $39.18.

The thanks of the Council are again heartily extended to Principal White, of the Normal School, for the use of rooms in this building in which we have held all our soirées, and also for the continued use of a room for our library, and Council meetings. The Council again wishes to place on record its obligations to the daily press of this city for publishing notices of our meeting free of charge.

W. J. WILSON,
Secretary.

THE OTTAWA FIELD-NATURALISTS' CLUB.

The Treasurer's Statement for the year ending 15 March, 1904.

RECEIPTS.			EXPENDITURE.			
Balance from previous year..		$41 73	Printing OTTAWA NATURALIST, Vol. XVII 12 nos., 228 pp.....	$286 20		
Subscriptions, 1903-04 ..	$149		Illustrations	38 62		
Arrears.....	76		Authors' Extras.....	29 55		
		225 00	Nature Study Leaflets	22 00		
Advertisements		42 40	Miscellaneous printing: Wrappers, Post cards, etc....	25 00		
Authors' Extras sold		27 95		401 37		
OTTAWA NATURALISTS sold..		20	Postage	21 45		
Maps of Ottawa sold... ...		50	Editor	50 00		
Government Grant..... ...		200 00		472 82		
			Less 5% for cash on printers' account...	19 86		
					452	96
			Soirée expenses		32	50
			Sundry expenses, postage, etc		13	14
			Balance.....		39	18
		$537 78			$537	78

Examined and found correct.

R. B. WHYTE, J. BALLANTYNE, *Auditors.*

ARTHUR GIBSON, *Treasurer.*

The Treasurer begs to remind the members of the Club that their subscriptions are payable in advance, at the beginning, not at the end, of the Club year. A great many, he regrets to say, have allowed themselves to get into the habit of not paying their subscriptions until the receipt of a special appeal asking for funds. Members who have not paid their subscriptions for the current year—March, 1904, to March, 1905,—will oblige the Treasurer very much by sending them in as soon as possible. The expenses of the Club in connection with the printing of THE OTTAWA NATURALIST, etc., have to be met from month to month, and it is the wish of the Council that these be paid promptly.

THE CANADIAN SPECIES OF TROCHOLITES.

By J. F. WHITEAVES.

From the dismemberment and reconstruction of so many of the older genera of nautiloid shells of the Cambro-Silurian and Silurian rocks, which the progress of modern research has necessitated, the genus *Trocholites* has emerged unscathed.

First described by Conrad in 1838 and again in 1842, it has since been studied, described more fully, and illustrated, by Hall, Foord, Schröder, Holm and Hyatt.

The original description of the genus in 1838, on page 118 of the Second Annual Geological Report of the State of New York, is as follows: "Shell in the form of an Ammonite; volutions contiguous, gradually increasing in diameter; septa plain." And, the additional definition of the genus, in 1842, on page 274 of the eighth volume of the Journal of the Academy of Natural Sciences of Philadelphia, is in these words: "Involute; symmetrical; whirls contiguous; the back of inner volutions rounded, fitting into a corresponding groove; septa convex; siphuncle near the inner margin." "This genus," Conrad adds, "differs from *Lituites* in having a submarginal siphuncle, and in not being extended into a straight or bent prolongation. The aperture is widely different, being of a lunate outline, whilst in *Lituites* it is nearly round." As now understood, shells of the genus *Trocholites* may be roughly described as small nautilicones, with slender whorls that are compressed on the venter and dorsum and expanded at the sides, their outline in cross section being usually reniform. The surface markings consist of small flexuous transverse ribs, ridges or striæ, often accompanied with spiral raised lines. The sutures of the septa are also flexuous; the siphuncle of the adult shell is placed near the dorsum, or at least on the inner side of the centre; and the chamber of habitation occupies from rather less than one-half to about three-quarters of the outer volution.

In the Guelph formation of Ontario there is a fossil that seems to be identical with the *Lituites multicostatus* of Whitfield (1882) which Hyatt says is synonymous with the *L. Graftonensis* of Meek and Worthen (1870), though it does not belong to the genus

Lituites, as now restricted, nor even to the Family Lituitidæ. This fossil was referred to *Trocholites* by the writer in 1884, and to *Discoceras*, Barrande, by Hyatt in 1894, who, however, admits the "close connection" between these two genera, and, in his latest publication,* includes both of them in his Family Trocholitidæ. It is still perhaps doubtful whether this Guelph species is a *Trocholites* or a *Discoceras*, but in the Cambro-Silurian rocks of Quebec and Ontario there are now known to be at least three undoubted and well marked species of *Trocholites*, upon which the following notes are submitted.

TROCHOLITES AMMONIUS, Conrad.

Trocholites ammonius, Conrad. 1838. Second Ann. Geol. Rep. St. N. York, p. 119.

,, ,, Emmons. 1842. Geol. New York, pt. II, p. 279, fig. 3; and p. 392, fig. 1.

Utica trocholite, Vanuxem. 1842. Geol. New York, pt. III, p. 57, fig. 3.

Trocholites ammonius, Hall. 1847. Pal. New York, vol. I, p. 192, pl. XL, A, figs. 4, *a—k*.

,, ,, Emmons. 1855. Amer. Geology, p. 146, fig. 29, and pl. XII, figs. 14, *a—d*, and 15.

,, ,, Ami. 1888. Canad. Rec. Sc., vol. III, no. 2, p. 105.

,, ,, Foord. 1891. Cat. Foss. Cephal. Brit. Mus., pt. II, p. 47.

,, ,, Hyatt. 1894. Phylogeny of an Acquired Characteristic, in Proc. Amer. Phil. Soc, vol. XXXII, no. 143, p. 486.

This species, which is the type of the genus, seems to be well characterized by its "very peculiar, rough, fretted surface" or "cuticular corrugations," that have been minutely described by Hall and Hyatt. Hall says that "this shell occupies a central position in the Trenton limestone" (of the State of New York) "being unknown in the lower part, but passing upwards into the Utica slate, where it is of less frequent occurrence."

So far, in Canada, *T. ammonius* has been found only in the Utica slate or shale. In 1878, Mr. Walter R. Billings showed the

* The article *Cephalopoda* in Eastman's translation of Zittel's Text-book of Palæontology.

writer specimens of it, that he (Mr. Billings) had recently found in the Government House grounds at Ottawa. But, it was not until ten years after this that Dr. H. M. Ami recorded the discovery and recognition of the species in Canada; at Ottawa in the second volume of this journal, and at Murray Bay, Whitby and Collingwood in the third volume of the "Canadian Record of Science."

TROCHOLITES PLANORBIFORMIS, Conrad.

Trocholites planorbiformis, Conrad. 1842. Journ. Acad. Nat. Sci. Philad., vol. VIII, pt. 2, p. 274, pl. XVII, fig. 1.

" " Hall. 1847. Pal. New York, vol. I, p. 310, pl. LXXXIV, figs. 3, *a—f*.

"Volutions higher than wide, longitudinally striated, and with oblique obtuse, transverse lines, approaching at an angle but rounded on the centre of the back; apex profoundly depressed; back of the large volution flattened; aperture much longer than wide. *Locality*. Near Grimsby, Upper Canada, in Salmon River sandstone. This elegant shell was found in a boulder, by Mr. S. Ashmead, of this city" (Philadelphia) "and by him presented to the Academy of Natural Sciences. A specimen was kindly given me by this liberal and enterprising mineralogist" (Conrad. In addition to this, Hall says that the surface of this species is "marked by obliquely transverse ridges, which bend backwards, forming a broad curve on the dorsal line, longitudinally striated with rounded lines." And, in specimens of *T. ammonius*, from the Trenton limestone, he says that he has "rarely found the transverse and longitudinal ridges so strongly marked."

So far as the writer is aware, no other specimens of *T. planorbiformis* than the two types from Grimsby have been found in Canada, as the fossils from Montmorenci or Montmorency Falls and Lorette that Dr. Foord identified with that species in 1891, prove to be referable to the since described *T. Canadensis*, Hyatt.

Hall, in 1847, describes *T. planorbiformis* as one of the fossils of the Hudson River (Lorraine) formation of the State of New York, and his successor, Dr. John M. Clarke, in 1903, in his "Classification of the New York series of geological formations,"

says that "Salmon River" is an early term applied to the local development of the Lorraine beds in New York. So that both in Canada and the United States this species seems to occur at a geological horizon immediately above the Utica shale.

TROCHOLITES CANADENSIS, Hyatt.

Lituites (*Trocholites*) *ammoneus*, Salter. 1853. Quart. Journ. Geol. Soc. London, vol. IX, p. 86; but not *Trocholites ammonius*, Conrad. 1838.

Trocholites planorbiformis, Foord. 1891. Cat. Foss. Cephal. Brit. Mus., pt. II; but not of Conrad (1842) nor of Hall (1847).

Trocholites Canadensis, Hyatt. 1894. Phylogeny of an Acquired Characteristic, in Proc. Amer. Philos. Soc., vol. XXXII, p. 486, pl. IV, figs. 23 and 24; and pl. VI, figs. 39 and 40.

"Loc., Falls of Montmorency, near Quebec.

"The four specimens representing this species" (*T. Canadensis*) "came from the Bronn collection. They are similar to *T. ammonius* in form, but differ in being broader proportionately in the transverse diameters of the whorls and have deeper umbilici. The whorls are rounded, there being no tendency to angularity, either of the sides or abdomen, and in these specimens the size is small. There are fold-like costæ from an early neanic state, and the living chamber may be considerably over one-half of a volution in length. The exterior is marked by longitudinal lines along the venter and often on the sides, but these have none of the regularity and prominence observable in Conrad's figure, and that figure shows no costations which are more prominent and fold-like in this than in *T. ammonius* or any other described species of *Trocholites*" (Hyatt). These specimens, it may be added, belong to the Museum of Comparative Zoology at Cambridge, Mass.

In 1901 Dr. H. M. Ami collected some interesting fossils from the Trenton limestone at the Natural Steps, a little above the Falls of Montmorency, and among them there are five good specimens of a species of *Trocholites*, which have recently been studied by the writer. They prove to be well preserved and very characteristic examples of *T. Canadensis*, and are in all respects essentially similar to the types of that species, which have been kindly lent to the writer, for comparison, by Dr. W. Y. M. Wood-

worth, the Curator of the Cambridge Museum. And, a study of the original types of *T. Canadensis* and of the similar specimens collected by Dr. Ami, has necessitated the conclusion that the fossils collected by Dr. Bigsby in 1822 at Montmorency Falls and at Lorette, which Salter referred to "*Lituites* (*Trocholites*) *ammoneus*" and Foord to *Trocholites planorbiformis*, are also identical with *T. Canadensis*.

To test the correctness of this conclusion, two of the best specimens of *T. Canadensis* that Dr. Ami obtained at the Natural Steps, were sent by the writer early in January last, to Mr. G. F. Crick, of the British Museum (Natural History), for comparison with the presumably similar specimens collected by Dr. Bigsby, in that Museum. In reply to this communication, Mr. Crick thus writes, in a letter dated January 22nd, 1904: "I have carefully examined the specimens in this Museum to which you refer and am quite satisfied that they are specifically identical with the examples of *Trocholites Canadensis*, Hyatt, that you have sent for comparison. The following particulars about the specimens here may be of interest to you. This Museum contains five examples from Montmorency and two from Lorette, that Dr. Foord (Cat. Fossil Cephal. Brit. Mus., pt. II, p. 49) referred to *Trocholites planorbiformis*, Conrad. The two specimens from Lorette (No. 26568) were presented to the Museum by Dr. Bigsby. The five Montmorency specimens are among the foreign collections transferred from the Museum of Practical Geology. Four of these (c. 4105, *a*—*d*) were presented to that Museum by Dr. Bigsby, but how the other specimen (c. 4106) was obtained is unrecorded; it bears an original label 'near Montmorenci Falls, near Quebec.'" In a later letter Mr. Crick adds that it would seem that Dr. Bigsby presented examples of the species both to the British Museum and also to the Museum of Practical Geology in 1851.

Professor Hyatt did not state at what particular geological horizon his *T. Canadensis* occurs. But the limestone at and near Montmorency Falls, and at Lorette, is distinctly stated to be Trenton by Dr. Bigsby in 1853,* and by Dr. R. W. Ells in 1889.†

* Quart. Journ. Geol. Soc. London, vol. IX, pp. 84—86.

† Geol. and Nat. Hist. Surv. Canada, Ann. Rep., N.S., vol. III, pt. 2, pp. 22K, and 19K.

The writer has seen no specimens of *T. Canadensis* from Lorette, but if, as seems possible, it there occurs associated with *Plectoceras Halli*, then the horizon of both of these species at that locality may be that of the Trenton rather than that of the Black River limestone.

In Canada it would seem that *Trocholites Canadensis* is characteristic of the Trenton limestone, perhaps of its lower beds, and considerably below the Utica ; *T. ammonius* of the Utica shale ; and *T. planorbiformis* of the Hudson River or Lorraine formation, above the Utica.

Ottawa, March 15th, 1904.

MOLLUSCA NEW TO THE CANADIAN FAUNA.

While staying at Oxley, Ontario, in the fall of 1903, Miss Mary E. Walker, of Buffalo, N.Y., made a collection of the mollusks found there, which was submitted to me for examination. Among them were two species, which, so far as I have been able to ascertain, have not hitherto been recorded from Canada.

1st.—VALLONIA PARVULA, Sterki.

This is a well marked species, easily distinguished from *V. costata* by its smaller size, more depressed form and wider umbilicus. Originally described from the Western States, it was found by myself several years ago at Put-in-Bay. Its discovery at Oxley extends its range still further north. The occurrence of this species at two localities so near together, and so far away from its normal range, with no known record of its having been found in the intervening region, is a curious fact in distribution, and one not easily accounted for.

2nd.—PISIDIUM DANIELSI, Sterki.

This is a new species described by Dr. Sterki in the "Nautilus" for August, 1903, (Vol. xvii, p. 42) from specimens collected in Steuben County, Indiana. Its discovery at Oxley is the first record of its occurrence at any other than the type locality.

BRYANT WALKER.

WARBLER SONGS AND NOTES.

By REV. G. EIFRIG.

Now that the crows, the vanguard of the annual bird migration from the south, have arrived, and two or three bluebirds even have coyly appeared in a sort of tentative way, to see whether winter would not soon disappear in earnest, we may reasonably expect to soon see larger divisions of the great bird-army. In April the sinister companies and battalions of the blackbirds often make themselves apparent even to the casual observer, the purple and rusty grackles with their discordant gurgling, and the fine redwinged blackbirds with their martial *congarée*. Besides these some larger birds, which however do not make themselves so apparent, will then come, some herons and hawks ; also the little trusty phœbe with the plaintive note from which its name is derived. And then comes glorious May, which brings surprises and joys each day in the animal and vegetable kingdoms. Then huge waves of warblers, finches, thrushes, vireos or greenlets, plovers, etc., arrive daily. Then is the time for every one who can, naturalist, professional, amateur or otherwise, lovers of nature and the beauties of it, to arm themselves with an opera glass and lens, and note book, and see, observe, behold and drink in as it were the beauties and lessons and mysteries that nature holds up to our raptured vision. Some of the finest and most interesting objects that we then can and ought to become acquainted with are the birds. Watch them with or without glass, try to impress their chief characteristics on your mind, and if you do not know the bird and are a beginner in bird-craft, look up at home your Bird Neighbors, or some other popular book on birds, and see what the bird you did not know was. And the more you learn thus by your own exertion, which is at the same time pleasure, also healthful to a degree, the more you want to learn and find out ; the love of it will grow on you.

After knowing the birds by their color, size, etc., a person should try to attain some proficiency in recognizing them by their songs and other notes. Of course, if all the birds would announce their names as plainly as the chickadee, or the phœbe or bobolink, this would be comparatively easy. However, this is not the case,

and therefore, it takes more or less patient observation to be able to tell them by their notes.

Some of our prettiest, but at the same time smallest and most elusive birds are the warblers. On some days the open woods are full of them. They are abundant and pretty, yet most people never see them, even if they are at home in their orchards, because they are so small and restless, always moving about. Most of them are so beautifully and conspicuously marked, that if a person once knows when and where to look for them he can readily become acquainted with them. But it takes much patience and stretching and twisting of necks to accomplish it. Therefore, I soon after undertaking it came to the conclusion that it would be advantageous to be able to recognize a warbler by its song or rather lisping—for that is in many cases all, despite their name as a class—that their musical efforts amount to. And to aid nature and bird lovers to learn to know and identify warblers is the *raison d'etre* of this article.

When I heard a warbler song I did not know, I followed up its owner until I positively identified him, then I tried what syllables would reproduce the impression best, and these I jotted down in my note book on the spot. These first impressions sometimes have to be corrected later on, often the first is as good as the last. This I would advise everybody to do who would learn to know the birds by their song.

The following list is loosely arranged according to the time of appearance of the different species at Ottawa, and to the degree of frequency in which they are generally seen.

BLACK AND WHITE CREEPING WARBLER, *Mniotilta varia.* To be seen in open woods of deciduous trees, creeping around limbs and trunk of trees, not high up; color as implied by name. Song insignificant, a repetition of the syllable *sweet.* One I heard sang: *Switta, switta, switt.* One writer gives its song, *Weachy, weachy, weachy, twee, twee, twee, tweet.*

YELLOW WARBLER, *Dendroica aestiva.* This common warbler is entirely yellow, the male having narrow reddish stripes on the lower side, which are apparent only at a near view. This is a bird not so much of the woods as of the open, frequenting trees n fields, along fences and even in cities, where it also nests. Its

song is, *Sweet, sweet, sweet, sweet, sweeter, sweeter,* or *Sweet, sweet, sweetie,* or *Weeche, chee, chee, churwee,* as Prof. Lynds Jones gives it.

REDSTART, *Setophaga ruticilla.* This pretty feathered bit of energy and restlessness can be easily recognized by its conspicuous salmon red with black, which it always displays fully. Its note is not so distinctive; I could never formulate it in syllables to give satisfaction; it is much like that of the preceding two species. Mr. Chapman gives it *Ching, ching, chee, ser-wee, swee, swee-e-e.*

CHESTNUT-SIDED WARBLER, *Dendroica pensylvanica.* The adults of this species are easily told by the chestnut stripe on sides and bright yellow crown. They frequent second growth deciduous woods; they nest low. Song: *Peary, peary, peé-a,* rather subdued. Miss Roberts gives it, *Tsee, tsee, tsee, happy to meet you.*

OVENBIRD, *Seiurus aurocapillus.* Abundant in open woods, *walking* on the ground looking for ants. Its common song with which it greets intruders in its domain is exactly rendered by Mr. Burrough's transcription: teacher, *teacher,* TEACHER, TEACHER, **TEACHER**. Some however, seem to put the accent on the second syllable, or at least many hear it that way, some like *te cheé,* etc.

MARYLAND YELLOWTHROAT, *Geothlypis trichas.* This cheerful and nimble little sprite can easily be identified by its markings as well as by its song. It is bright yellow on breast and head, except a black band on cheeks, ear coverts and forehead. Its song plainly is: *Witchety, witchety, witchety;* accent on first syllable. It frequents bushes and prefers swampy or at least wet situations.

YELLOW-RUMP WARBLER, MYRTLE WARBLER, *Dendroica coronata.* Has four yellow patches on crown, at shoulders and on rump, otherwise bluish-gray, streaked with black. Not much given to song: one author gives it, *Twhip twéeter, twéeter.*

BLACK-THROATED GREEN WARBLER, *Dendroica virens.* Its colors are indicated by the name, yellow on under side. Its song, if once heard well, can not easily be forgotten. It is: *Dee-dee, dée, ah-di.* It is loud, ringing, cheerful. Prof. Jones has heard it this way, *Pe te, che-o te.*

BLACK-THROATED BLUE WARBLER, *Dendroica caerulescens.* Where the preceding one is found, this one may also be looked for. They frequent bushy, open woods and are mostly seen in the branches of medium sized trees. Its best song is ; *Dill-dill dill-dreé*, rapid, ascending. When busy feeding or later in summer it abbreviates this into, *Re-dereé-di, Tsree tsree tsree*, or even a shrill, whistle-like, *Trree.*

MAGNOLIA WARBLER, *Dendroica maculosa.* This handsome black and yellow warbler has quite a repertoire of lays and ditties, which all however do not amount to much. Its best performance is a loud, impulsive, *Iree dereé di.* At other times it sings like the Chestnut-sided warbler: *Peary, peary pee a;* then again monotonously: *Tsee, tsee, tsee*, etc., or it utters a rather melodious disyllable *Tsee-wit, tsee-wit.*

BLACKBURNIAN WARBLER, *Dendroica blackburniæ.* This winged gem of black, white and deep orange sings little and then very poorly, a faint. hesitating, *Dee dee dee*, in one pitch of tone, or even only : *De de de.*

PINE WARBLER, *Dendroica vigorsii.* True to its name, this warbler lives only in pine-woods or in single pines amongst deciduous trees. Its color is dull olive and the song exactly like that of the Chipping Sparrow ; it cannot well be reproduced by syllables.

CANADIAN WARBLER, *Wilsonia canadensis.* This warbler is of a somewhat pensive and retiring disposition. It prefers swampy and bushy places. The breast is bright yellow, with a neck-lace of black spots, back bluish gray. The only song I have heard sounds like a faint imitation of the Maryland Yellow throat, a subdued, halting : *Witchety, witchety.* When alarmed in their quiet haunts they utter a sharp *tsip* or *tsink.*

BLACKPOLL WARBLER, *Dendroica striata.* Black and white, with a black crown, larger than most warblers, Its song is a very insignificant dry : *De de de*, uttered very leisurely.

NASHVILLE WARBLER. *Helminthophila ruficapilla.* A bright yellow warbler, bluish gray on top. The song is variable. Some give it : *Wee-see, wee-see, wit-a-wit-wit ;* others : *Ke-tse, ke-tse, ke-tse, chip-ee-chip-ee-chip.* Rather loud and lively.

BAY-BREASTED WARBLER. *Dendroica castanea.* A migrant only here. Song just like that of the redstart.

TENNESSEE WARBLER. *Helminthophila peregrina.* Song like that of the chipping sparrow, except first two syllables, which are *twip* instead of *chip.*

CAPE MAY WARBLER. *Dendroica tigrina.* Rather rare migrant and rather quiet too. Song something like black and white creeper: *awit, awit, awit, awit, awit,* as Prof. Butler puts it.

PARULA WARBLER, Blue Yellow-back Warbler. *Compsothlypis americana.* "Parula's song is hardly wiry, but it is fine and delicate —more like hair than wire. The more delicate singers seem to say, *Pe-tse, pe-tse, pe see see,* or: *cher-re-re, cher-re-re, cher-re-re.*"

PALM WARBLER, *Dendroica palmarum.* Song: *Tsee, tsee, tsee, tsee,* with a distinct swell. (Prof. Jones).

YELLOW PALM WARBLER. *Dendroica palm hypochrysea.* Like preceding.

MOURNING WARBLER. *Geothlypis philadelphia.* Song: *Tee te-o, te-o, te-o, we-se,* or: *True, true, true, true too.*

WILSON'S WARBLER. *Wilsonia pusilla.* Song like yellow warbler or redstart.

Ottawa, March 28, 1904.

HUGE PUFF-BALLS.—Mr. J. Smith of the Topographical Surveys Branch, found a very remarkable puff-ball (*Lycoperdon gigantum*), about a mile from Breckenbridge Station, on the Pontiac and Pacific Railway, on the 25th of August, 1903. It measured 56 inches horizontal girth, and 44 inches vertical girth, a perfect specimen with skin as white and smooth as a piece of kid. There were five other large ones within a few feet of it, some of them decayed, others not fully grown. Mr. Smith has seen large puff-balls at the same place for several years back. Such specimens are not rare about Ottawa, but it is believed that that found by Mr. Smith is the largest ever seen in this district.

JOHN MACOUN.

THE EVENING GROSBEAK.

(Cocothraustes vespertina.)

By C. J. YOUNG.

The readers of THE OTTAWA NATURALIST who are interested to any extent in our birds, will learn with interest that a migration of evening grosbeaks has occurred this winter in Ontario. This bird always creates an amount of interest, partly by reason of its rarity and beautiful plumage, and partly because its summer home and breeding habits are still but imperfectly known.

It visits Ontario at long intervals; this year it has been seen in pairs and small flocks in the neighborhood of Kingston, Ont.,—even within the city limits. A beautiful male was procured by Mr. E. Beaupré on Feb. 23rd, which I saw in the flesh shortly after it was shot. A pair was secured out of a flock at Cataraqui during the same week, and birds had been observed at Williamsville during January. In each case they were feeding on the seeds of the Manitoba maple (*Negundo aceroides*), a tree that only of late years has assumed sufficient proportions in Ontario to bear fruit. It will be interesting to learn whether this bird has been observed elsewhere in Ontario during the present winter.

The evening grosbeak is a rare bird everywhere, though of more frequent occurrence in the west than in the east. It was first described by Mr. William Cooper, of New York, from a specimen obtained by Mr. Schoolcraft near Sault Ste. Marie in April, 1823. The next specimen recorded was obtained in the month of August in the same year by Major Delafield, north-west from Lake Superior. From that time to the present the bird has been occasionally recorded in Canada, but as far as I know there is no record of the discovery of the nest except from the United States.

Acccrding to the late Mr. McIlwraith, of Hamilton, Ont., the first report of its appearance in the settled parts of Ontario was in the year 1866, when in the month of May two were obtained by the late Dr. T. J. Cottle at Woodstock. The next record was in 1871, when they were observed in the spring near London, Ont.

Then in March, 1883, Mr. McIlwraith himself saw two near West Flamboro.

The largest migration seems to have been in 1890, when they were frequent about Kingston and elsewhere, and a flock was noticed as far east as Quebec. Again in 1896 two were seen at Kingston. Then none until the present year, 1904, when, during January and February, they have been observed and obtained about Kingston. This completes the record for Ontario to date.

With regard to the nest of the bird and its breeding habits, the honor of discovering it rests with Mr. Jno. Swinbourne, of Springerville, Arizona, who found it on 5th June, 1884, in a canon 7,000 feet above sea level. (*Vide* Auk, vol. v, p. 113.) The next nest was recorded by Mr. W. E. Byrant, as taken by a Mr. Fiske, of the U. S. Geol. Sur. on a hill-side in Yolo Co., Cal., in 1887. The third and last record I can find was a nest and four eggs collected by Mr R. H Beck in the Sierra Nevada Mts., in 1896, a beautiful colored plate of which is published as a supplement in the Nidologist, Sep. 1896, vol. IV, No. 1.

NOTE.—Mr. Edwin Beauprè has sent for publication in THE NATURALIST his notes on the occurrence of the evening grosbeak, The substance of these notes has been embodied in Mr. Young's article above, but Mr. Beaupré says further: "The two flocks that visited the city spent their time feeding on the fruit of Manitoba maple. Locally, this winter's visitation makes the third record since 1890. From the 22nd to the 25th I saw them each day; one evening when I visited the street on which the maples are growing, I found three richly colored males whose striking plumage of white, yellow and black, brightened by the departing rays of the wintry sunset, seemed entirely out of contrast with their surroundings of bleached and withered fruit on which they were sumptuously feasting.

NATURE STUDY—No. XII.

SCHOOL GARDENS IN GREAT CITIES.

(Report of Committee on Industrial Training submitted to the Public Education Association of Philadelphia.)

Facing the Hudson, on the west side of New York City, is a piece of condemned land awaiting improvement, ironically called DeWitt Park. The most vivid imagination could not have conceived a more desolate spot than this was in the summer of 1902. Approached from the east through filthy streets, crowded with noisy, dirty urchins, it loomed up a dark blot on the beautiful background of cool river, green hills and blue sky. Rows of tumble-down houses, disused carts, piles of rubbish, stones, rags and litter, among which the children played, made even the streets seem neat and orderly by comparison.

In the centre of this plot of ground it was evident that something of more than ordinary importance was occurring. The air was black with flying missiles, while excited groups of children ran hither and thither. To all enquiries came the reply, "We are getting ready for our farm." The idea of a farm in that unfavorable spot might have made the inquirer slightly skeptical, but had he stayed to see, the changes wrought were little short of marvellous. The children's ready hands, assisted by older brothers and sisters, and by workmen from the Park Department of Manhattan, accomplished wonders. Stones and rubbish vanished, the hard earth yielded to the plow and harrow. Load after load of rich loam was bought. A fence enclosed the selected space. Walks were laid out, and plots marked, and after days of earnest work the "farm" was ready to receive the seed.

Twenty-five children filed in at the gate and received a practical lesson in planting from the gardener. Teachers meanwhile registered names and properly tagged each "farmer." These tags, upon each of which the name of the child and the number of the plot assigned were registered, were certificates of ownership to be presented at the gate as a pass to enter. The lesson over, the children marched to their respective plots and planted the seeds given to them as they had been shown how to do by the

gardener. New groups followed them, and soon in that desert waste rose an oasis of living green, orderly, neat and picturesque —the first Children's School Farm in New York City.

One hundred and twenty-five farmers cared for their plots during the first season, but in the following spring so many requests for "farms" were received that the Park authorities decided to enlarge the space allotted, so that nearly three hundred boy and girl farmers, varying in age from eight to eighteen years, were happily employed during the summer of 1903. Through the long hot days of July and August you might see them watering, weeding, hoeing, or quietly sitting around the central flower plot listening to a Nature Study talk by the attendant teacher.

Improvements upon the surrounding land followed rapidly in the wake of those upon the farm. Toward the east, the Park Department had placed a huge open air gymnasium and playground. Toward the west, a tiny country seat, with a 12 by 18 ft. farm-house. A green lawn and flower beds, a pavilion, a pig-pen and a chicken house had been added to the farm property. Still further west stood a sand tent, and a second canvas formed a resting place for tired mothers. A typical afternoon might have shown eighty or a hundred children busy in the gardens; in the pavilion a sewing class and a group weaving baskets for farm produce; in the tiny house tea being served by neatly aproned housekeepers; while on the lawn the boys played croquet. During September groups of children from neighboring kindergartens flitted through the garden in the mornings, while the proud owners appeared when school hours were over, basket or bag in hand, ready to carry home their harvest, and spade over their plots, leaving them clean and neat, prepared to defy winter's coldest blast.

As order emerged out of chaos, as stones and rubbish disappeared, the restless, careless horde of children grew daily more quiet and gentle. The wilderness that blossomed as the rose was not only the oasis in the desolate waste of ground, but also in the hardened little lives, now softened by God's wholesome sunshine, in the careless hands that grew so tender with the delicate blossoms, the wayward feet that learned to run the narrow paths

without swerving to the right or left, the half opened eyes, before seeing naught but the factories around, now dimly descrying the Hudson and the light on the hills beyond.

The history of the making of the New York Garden is that of gardens in many cities. Back yards are no longer unsightly. In some cases the stone flagging of the school yard has given place to miniature gardens of great beauty. Historically, gardens for instruction have been an educational factor for many centuries. Nearly 2500 years ago Persian boys received instructions in agriculture and horticulture, in gardens set apart for that purpose. Through the middle ages gardens for educational purposes existed throughout Central Europe. The first definite movement toward establishing *school* gardens was made in Australia in 1869, when a law was passed instituting gardens in connection with all schools in country districts.

In *school* gardens must lie the main interest of those who believe that the public schools are the basis of national character. Statistics upon this subject are difficult to obtain, but an idea of the extent to which this branch of education is carried in European countries may be obtained from the following statement. In Austria there are no less than eight thousand school gardens, in Sweden two thousand and sixteen, while in France practical gardening is taught in 2,800 primary and elementary schools.

America has only begun to realize her opportunity in the value of school gardens as an educational force among the thousands of children in her crowded cities. An effort is being made to attract the attention of educators to the "Model School Garden" which, directed by Mr. Hemenway of the Hartford School of Horticulture, will be a most attractive feature of the World's Fair at St. Louis.

If the Public Education Association of Philadelphia succeeds in its effort to have at least one school garden opened in the summer of 1904, the garden movement will have been at least inaugurated in four great Eastern cities, New York, Boston, Philadelphia and Washington. The first school garden in America was started by Mr. Henry S. Clapp at Boston, in 1890. The garden was originally intended for wild flowers and so well has the

work succeeded that at the present time it includes more than one hundred and fifty native wild plants. In 1901, a large vegetable garden was added to the flower garden. Last season Boston had sixteen of these gardens and with only this small nnmber Boston is yet far ahead of other cities in America in the school garden movement. The work at the Hartford School of Horticulture, under its capable director, Mr. Hemenway, has attracted considerable attention. Boys and girls come from the city to care for their gardens, of which there were one hundred and sixty-three last season, with the supply still far short of the demand.

At the Massachusetts State Normal School, at Hyannis, Mass., a portion of the campus was converted into a garden, which, from a commercial standpoint, was ably conducted. Each pupil was provided with a blank book into which he copied bills of the produce sold, the deposits at the bank and the checks drawn. The amount that was realized the first season was thirty dollars.

Although not connected with any institutions of learning, the Boys' gardens of the National Cash Register Co., in Dayton, Ohio, have been most important in the results that they have effected. The gardens here are 10 by 130 feet, or larger, large enough to be of commercial importance. As an example of what can be done with a garden of this size, "one boy provided a family of five with vegetables during the entire season, and in addition to this made five dollars." A competent gardener instructs the children in their work. There are various gardens in other cities in connection with schools or settlements, but the work is extremely irregular.

An idea of the cost for maintaining a school garden of one-half acre during the first season may be obtained from the following rough estimate given for Philadelphia.

Preparation of ground, including fertilizers	$35 00
Fencing, tool-house, tools	225 00
Literature, insect mounts, materials for simple experiments	10 00
Seeds and plants	30 00
Total	$300 00

This estimate does not include the salaries of attendant teachers. Trained teachers are more valuable than agriculturists without knowledge of pedagogical methods. Teachers not versed in agriculture may be supplemented by a good gardener ; if, however, the teachers do understand gardening, a laborer may take the gardener's place. This man occupies an important position in the work. He supplies the place of a janitor and assists the children in any work that is too heavy for them, such as breaking up earth with a pick-axe or managing a fifty-foot hose. During the fall, when the children are at school most of the day, he acts as a watchman, sending away truants, and during this time when weeds grow rapidly and the children's hours of work are few, he also assists in keeping the garden clean. The supervisor of the garden must be a woman that is capable of supervising and directing the work of preparing the ground, laying out plots, and erecting buildings. Some knowledge of surveying, plotting and draughting is also indispensable to her, as she will necessarily have to plan the laying out of the garden and direct both children and workmen. Upon the supervisor falls the duty of engaging workers and the responsibility of overseeing each step. Estimates and purchases of seeds and plants and the whole government of the practical gardening is to be planned by her. In addition to this, she usually gives daily nature-study talks, which must be adapted to the varying ages of the children. As harvesting progresses accurate records of produce per child, attendance of said child, effect of work upon his physical, mental and moral being must be registered. All of these steps are worth while because gardening is yet in its infancy and statistics must be obtained to convince those unwilling to embrace the idea, of its merit. Such individual records must be kept for two hundred and fifty children, to be afterwards added, balanced and the average found, more than filling the teacher's time during the hours in which the children are at school. Many interruptions to this work occur in the form of visiting classes to which the supervisor explains the work of the garden.

In Porto Rico, where school gardens are maintained by the United States government, and are connected with every public school, teachers are regularly trained for the work in the course of

theoretical and practical lessons on Agriculture. Trained teachers are somewhat difficult to find. Both Boston and Washington have foreseen this difficulty and are preparing young women for garden work,—Boston by means of the Science Department of her Normal School, Washington by a special course for Normal students, given at the school by Prof. S. C. Corbett, Horticulturist of the United States Department of Agriculture.

The Public Education Association of Philadelphia has been conducting correspondence upon the subject of school gardens, and the letters received seem to show that gardens have been connected more frequently with public schools than with private institutions, and that while the work has never been compulsory upon either teachers or pupils, it has proved a popular novelty wherever undertaken, giving healthy out-of-door study. Unfortunately the lack of space in great cities restricts the privilege of practical gardening to a comparatively small number of schools. A similar reason and consequently dearth of accessible material have been given for the lack of properly conducted nature-study in our public schools. Europe is in this respect far ahead of America. In Berlin, for instance, special gardens are maintained by the municipality, in which flowers, shrubs, and vegetables are grown in order that specimens required may be daily picked and sent in waggons hired by the city to those schools so situated that gardening is an impossibility. It has been suggested and advocated by at least one Associate Superintendent of Schools in New York City, also Mr. Gustave Straubenmuller, that a portion of Central Park be set aside for this purpose, and that specimens from its school garden be then sent daily to schools in Manhattan. Other parks that are used little by the public might fulfil a similar function. This at present seems to be the only solution of the problem of supplying schools with proper materials for Nature-study. As a new idea this may seem preposterous, but the day of experiment is past; Nature-study and gardening have become important educational factors, and thinking men and women are devising means to bring them within reach of every child in the public schools.

Of the neglect of this subject in our country Mr. Hamilton W. Mabie, in his "Essays on Nature and Culture," says: "Once

in a while some discerning man outside of the regular school interests, sees the inconsistencies of educational systems. Relationship with nature is a source of inexhaustible delight and enrichment. To establish it ought to be as much a part of every education as the teaching of the rudiments of formal knowledge, and it ought to be as great a reproach to a man not to be able to read the open page of the world about him as not to be able to read the open page of the book before him."

(Signed) HELEN CHRISTINE BENNETT,
1206 Stiles st., Philadelphia.
Instructor at Children's School Farm.
New York City, 1902-1903.

Philadelphia, January 12th, 1904.

NOTE.—The Children's School Farm in New York City was an original scheme of Mrs. Henry Parsons, a member of the Local School Board of the 11th School District of Manhattan, to whom the writer feels that she owes a lasting debt of gratitude for the training received during the past two summers. The success of the School Garden idea in New York is entirely due to the untiring energy and perseverence of Mrs. Parsons.—H. C. B.

The foregoing excellent article is sent to THE OTTAWA NATURALIST by Mr. R. H. Cowley, who has collected extensive information on the subject of School Gardens. In this connection many of our readers will follow with special interest the Macdonald School Garden experiment which will be inaugurated this spring under Mr. Cowley's direction in the County of Carleton.—J. F.

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