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THE OTTAWA NATURALIST

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ALGONKIN AND HURON OCCUPATION OF THE OTTAWA VALLEY.

By T. W. E. Sowter, Ottawa.

To the student of Indian archaeology, the great highway of the Ottawa will always be a subject of absorbing interest. As yet, it is almost a virgin field of inquiry, as far as any systematic effort has been made to exploit it. As yet, there are vast stores of information, along this old waterway, which await the magic touch of scientific investigation, to be turned into romance chapters of Canadian history. Sooner, or later, we must appreciate these potential opportunities for the collection of data that may solve many important ethnic problems, which have been transmitted to us from the dim twilight of prehistoric times and are, as yet, only presented to us in the will-o'-the-wispish light of tradition. The Ottawa River may yet furnish us with clues to the elucidation of much that is problematical in regard to areas of occupation, migrations and dispersions of some of our great native races, who were leading actors in many of the tragic wilderness dramas, that were played out in Canada before and after European contact.

The early Jesuit missionaries have left us, in their Relations a priceless record of Algonkin and Huron sociology, as well as an invaluable basis for the study of such of the Indian tribes of Canada as came within the sphere of their activities. As those gentle and lovable pioneers of the Cross were among the first Europeans to come in contact with these red children of the forest, they enjoyed exceptional opportunities for observing their habits of thought and action, ere their primitive folk-lore and traditions had been modified by the cradle stories of the pale-faces.

We are told by Parkman, one of the most trustworthy historians of modern times, that "By far the most close and accurate observers of Indian superstition were the French and Italian Jesuits of the first half of the seventeenth century. Their

opportunities were unrivalled; and they used them in a spirit of faithful inquiry, accumulating facts, and leaving theory to their successors." It is for this reason that the Jesuit Relations should be regarded as the groundwork of Indian archaeology, as far as Canada is concerned. They were written by men of absolute integrity, who have given us as much of the life history of the individual, the clan and the tribe, as came under their observation; or as they were able to obtain from the most trustworthy sources. They describe the Indian, as they found him, embowered in the seclusion of his native forests; surrounded by innumerable okies or manitous, both benevolent and malignant, to whom he appealed for aid in the hour of his need, or propitiated with sacrifices; venerating, with a sentiment akin to worship, such animal ancestors as happened to be the prototypes of his various clans; adhering to mythologies that agreed fairly well in essentials though somewhat loosely defined in matters of detail; believing, in his Nature-worship, in the soul or spirit of the lake, the river and the cataract; but without any vestige of belief in that personification of benificence called "The Great Spirit" who was presented to him afterwards by the missionaries, as the archetype of mankind, and recommended to him as the Supreme Being whom he should worship.

That the Jesuit record has been dictated by a spirit of truthfulness, is apparent from its impartial treatment of Indian tradition and worship; for, while some writers have endeavored to interpret Indian mythology in such a manner as to make it conform to the bias of preconceived theories, these worthy apostles of the Cross have given us the simple truth without embellishments. Examples of this kind may be found in Ragueneau's Relation, of 1648, in which he refers to the Hurons as having received from their ancestors no knowledge of God; and in the denial of Allouez, in his Relation of 1667, that any such knowledge existed among the tribes of Lake Superior. It is not probable that these men would have failed to recognize any such belief had the case been otherwise. Thus, these subtle reasoners, and past-masters in theological disquisition, were unable to discover, in such manitous as Manabozho, or the Great White Hare of the Algonkins, or, in Rawen Niyoh, the great oki of the Huron-Iroquois, beings analogous to the white man's God.

Now, the writer is convinced that this field of archaeological inquiry should be entered, with the assistance of the "open sesame" of the historical record; and that, by following up the clues, transmitted to us by the Jesuits and other contemporary writers, we should devote our attention to such portions of this field as are most likely to yield the best results, under careful and methodical cultivation.

The great stream, which forms the main boundary between the provinces of Ontario and Quebec, was called in early times the River of the Ottawas; but, it might have been named, also, the River of the Hurons. Owing to its geographical position, it offered the advantages of a direct and convenient highway between the French settlements on the St. Lawrence and the Indian tribes of the Great Lakes. This river, especially in the seventeenth century, was traversed by Algonkins and Hurons, Frenchmen and priests, following, either along its shores or at its distant terminals, their varied pursuits of explorers, fur-traders, scalp-hunters or ministers of the gospel. Sometimes, huge fleets of canoes, bearing red embassies from the west, or white punitive expeditions from the east, consignments of furs to the St. Lawrence trading posts, or native supplies for the winter hunt, black robed Jesuits with donnés or artisans for their western missions, passed up or down this great highway; while, at other times, fugitive parties, both white and red, crept along the shadow of its shores to avoid some scalping-party of the ubiquitous and dreaded Iroquois.

We are thus indebted to historical testimony for much of our knowledge of what took place on the Ottawa, since the beginning of the French régime. We should now endeavor to amplify this knowledge, by the accumulation of such data as may be derived from the domain of archaeology. The prospects in this direction, though somewhat dubious at first sight, are much improved upon closer acquaintance.

It is no great tax upon our ingenuity to discover traces of the presence of French and Indians on the Ottawa, in bygone times. The Indian dictum that, "water leaves no trail," applies, only to the deeper parts of the stream; for the writer, has in his collection, stone tomahawks of native manufacture, together with trade bullets, which were taken from the shallow shore-water of this river. It is, however, in the ancient camping grounds, which dot the shores of the Ottawa at frequent intervals, that we should search for traces of early human occupation. As the recovery of the loose leaves, which have been lost out of some old story book, is necessary to complete the tale; so is the interpretation of the sign language of these camp-sites, a requisite for the recovery of many lost or unwritten pages of our historical manuscript.

Great care should be taken in the examination of these places. The ground should be all gone over on the hands and knees, as, with his nose to the ground, so to speak, one is not liable to overlook anything of importance. As he is about to turn up a chapter on the social and domestic life of a native community, he should observe the topographical features of the

site and the position it occupies relative to the main river, whether situated on its margin or at any considerable distance away from its shores; and also, its proximity to smaller streams that might have been navigated by canoes before the deforestation of the district. He should first of all examine the surface before disturbing it; after which he may search out the secrets concealed in the ashes of dead camp fires, by passing the ashes through a sieve, so as to retain such works of art as might, otherwise, pass unnoticed. Every work of art, or portion thereof, should be studied with great care, even to apparently insignificant fragments. The composition of pottery should be noted and efforts made to discover if its ingredients are obtainable in the vicinity. All forms of arrow-heads should be noted, as well as the color and character of the flint, or other material, from which they have been fabricated, and, if possible, the source from which this material has been derived should be ascertained. Arrow-heads, that appear to be of foreign make, as differing from the prevailing forms, should be noted for future reference and comparison. Search should also be made amidst the usual litter of the flint workshops, in the locality, for evidences of domestic manufacture, such as pieces of raw material, flakings or heads that have been spoilt in the making and discarded by the ancient workmen. This flint refuse is found in greatest abundance about the bases of large boulders, which appear to have been utilized by the prehistoric artificers, as convenient work-benches in their primitive industries. Articles of European workmanship, which are too apt to be considered as of little consequence, should be searched for with the greatest diligence, making due allowance of course, for the difference in relative values between such finds as the rude pistol flint of the ancient hunter, and the metal cap or stopper from the pocket pistol of the well equipped modern fisherman. A sharp lookout should also be kept for implements of slate, especially such as are fabricated from the Huronian variety; and, as a last but most important recommendation, the location of the camp site should be kept a secret from relic hunters, until its examination has been completed.

C. C. James, in his Downfall of the Huron Nation, says that "The history and downfall of the Hurons may be studied in three sources. 1st. The traditions of the Indians themselves. 2nd. The letters of the Jesuit Fathers, the written records commonly called The Jesuit Relations. 3rd. Modern archaeological research and ethnological investigation. These three contributers to a common story are widely different in method, and when they verify one another we are bound to accept the conclusions as facts of history." It may be said also that the

same sources of information are available in studying the question of Algonkin and Huron occupation of the Ottawa Valley. We have already considered the value of the Jesuit writings, let us now examine some of the traditions of the Indians themselves.

Life on the old Ottawa, during the greater part of the seventeenth century, was always strenuous and frequently dangerous. On this rugged old trade route, during the French régime, the fur-traders from the interior, both white and red, experienced many vicissitudes while conveying the products of the chase to the trading posts on the St. Lawrence. Shadowy traditions of those days of racial attrition, have been transmitted from father to son, from the old coureurs de bois and their Indian confreres, to their half-breed descendants of the present day. These traditions account for the human bones washed out some years ago at the foot of the old Indian portage at the Chats, and those that are scattered in great profusion at Big Sand Point, lower down the river; also, for quite a number of brass kettles found at one time near the mouth of Constance Creek, for the Indian burials on Aylmer Island, as well as for the presence of arrow-heads, stone celts, flint knives and other native implements in the gravel beds at the foot of the Chaudière, and,without pausing to consider whether these relics of a departed people are not the ordinary litter of Indian camp-sites, or the disinterred bones from Indian burial places, tradition, as usual, takes charge of them as the ominous tokens of a period of violence.

At Big Sand Point there is a sand mound or hillock, fringed with scrubby trees, which has the uncanny reputation of having been once the home of a family of Wendigoes. These Wendigoes, as is usual with this species of manitou, were a source of constant annoyance to the native dwellers on the shores of Lake Deschênes but more particularly to an Algonkin camp on Sand Bay, quite close to the headquarters of these malignant spirits. The old man, who possessed the gigantic proportions of his class, was frequently seen wading about in the waters of the bay, when on foraging expeditions after Indian children of whose flesh, it is said, he and his family were particularly fond. The family consisted of the father, the mother and one son. The bravest Indian warriors had, on several occasions, ambushed and shot at the old man and woman without injuring either of them, but, by means of sorcery, they succeeded in kidnapping the boy, when his parents were away from home. Holding the young hopeful as a hostage, they managed to dictate terms to his father and mother and finally got rid of the whole family.

The writer heard this story one night while camping at the Chats and, though far from believing than any sane Indian of the old school would have laid violent hands on even a young

Wendigo, he is quite satisfied that, had one of those legendery monsters of the American wilderness loomed suddenly out of the dark shadows of the forest and approached the camp fire, the poor half-breed, who was "spinning the yarn" would have immediately taken to his canoe and left the Wendigo in undisputed possession of the island.

As it is around this same sand mound, the old Wendigo homestead at Big Sand Point, that the scattered bones, already alluded to, are found, it seems strange that the story tellers do not represent them as the remains of the cannibal feasts of its former occupants. These evidences of mortality, however, are accounted for in another tradition, that tells of a war-party of Iroquois who, having taken possession of and intrenched or barricaded the old Wendigo mound, defended themselves to the death against a force of French and Indians, who surprised them in a night-attack and butchered them to a man.

This story seems to carry us back to that period of conflict which was inaugurated by the onslaught of the Iroquois upon the Huron towns, which was continued with unparalled ferocity and terminated only by the merciless destruction of a once powerful nation and the final dispersion of its fugitive remnants, together with such bands of Algonkins as happened to come within the scope of that campaign of extermination. It is supposed that our tradition has reference to one of the many scenes of bloodshed which reddened the frontiers of Canada, while the Confederates were thus making elbow-room for themselves on this continent, and were putting the finishing touches on the tribes to the north of the Great Lakes and the St. Lawrence. At this time all the carrying-places, on our great highway, were dangerous, for war-parties of the fierce invaders held the savage passes of the Ottawa, hovering like malignant okies amidst the spray of wild cataracts and foaming torrents, where they levied toll with the tomahawk and harvested with the scalping-knife the fatal souvenirs of conquest.

Sand Bay, at the outlet of Constance Creek, in the township of Torbolton, Carleton Co., Ont., is a deep indentation of the southern shore line of the Ottawa, extending inland about a mile. The entrance, or river front of the bay, is terminated on the west by Big Sand Point, and on the east by Pointe à la Bataille, the two points being about a mile apart. The latter is now shown on the maps as Lapotties Point, a name of recent origin and doubtless conferred upon it by some ox-witted yokel, who thought it should bear the name of its latest occupant, rather than that which probably commemorated some tragic incident of a bygone age. The French Canadian river-men,

however, with much better taste, still retain the name by which it was known to the old voyageurs.

A great many years ago, so the story goes, a party of French fur-traders, together with a number of friendly Indians, possibly Algonkin and Huron allies, went into camp one evening at Pointe à la Bataille. Fires were lighted, kettles were slung and all preparations made to pass the night in peace and quietness. Soon, however, the lights from other camp fires began to glimmer through the foliage on the opposite shore of the bay, and a reconnaisance presently revealed a large war-party of Iroquois in a barricaded encampment on the Wendigo Mound at Big Sand Point. Well skilled as they were in all the artifices of forest warfare, the French and their Indian companions were satisfied that something would happen before morning. It was inevitable that the coming night would be crowded with such stirring incidents as would leave nothing to be desired, in the way of excitement. There lay the Iroquois camp, with its fierce denizens crouched like wolves in their lair, though buried in the heart of the enemy's country, yet self-reliant in the pride of warlike achievements, whose military strategy had rendered them invulnerable as the gloom of the oncoming thundercloud, and as inexorable as the fate of the forest monarch that is blasted by a stroke of its lightning.

Now, the golden rule on the Indian frontier in those strenuous times, was to deal with your neighbor as you might be pretty sure he would deal with you, if he got the chance. Of course it was customary, among the Indians to heap coals of fire on the head of an enemy, but as it was the usual practice, before putting on the coals, to bind the enemy to some immovable object, such as a tree or a stout picket, so that he was unable to shake them off, the custom was not productive of much brotherly love. Moreover, when the success of peace overtures could be assured only to the party that could bring the greater number of muskets into the negotiations, it will be readily understood why the French, who were in the minority, did not enter into diplomatic relations with the enemy. On the contrary, it was resolved to fight, as soon as the opposing camp was in repose, and attempt a decisive blow from a quarter whence it would be least expected, thus forestalling an attack upon themselves, which might come at any time before the dawn. The French and their allies knew very well that if their plans miscarried and the attack failed, the penalty would be death to most of their party, and that, in the event of capture, they would receive as fiery and painful an introduction to the world of shadows as the leisure or limited means of their captors might warrant.

Towards midnight, the attacking party left Pointe à la

Bataille and proceeded stealthily southward, in their canoes, along the eastern rim of Sand Bay, crossed the outlet of Constance Creek and landing on the western shore of the bay advanced towards Big Sand Point through the pine forest that clothed, as it does to-day, the intervening sand hills. This long detour, of about two miles, was no doubt a necessity, as, on still nights, the most trifling sounds, especially such as might have been produced by paddles accidently touching the sides of canoes, are echoed to considerable distances in this locality.

The advance of the expedition was the development of Indian strategy, for, by getting behind the enemy, it enabled the French and their allies to rush his barricades and strike him in the back, while his sentinels and outliers were guarding against any danger that might approach from the river front.

The attack was entirely successful, for it descended upon and enveloped the sleeping camp like a hideous nightmare. Many of the Iroquois died in their sleep, while the rest of the party perished to a man, in the wild confusion of a midnight massacre.

Such is the popular tradition of the great fight at the Wendigo Mound at Big Sand Point, and the bones that are found in the drifting sands at that place, are said to be the remains of friend and foe who fell in that isolated and unrecorded struggle.

Let us now descend the river, as far as the Chaudière, and we find ourselves once again in the moccasin prints of the Iroquois; for those tireless scalp hunters were quite at home on the Ottawa, as well as on its northern tributaries. War expeditions of the Confederates frequently combined business with recreation. They would leave their homes on the Mohawk or adjacent lakes and strike the trail to Canada by way of the Rideau Valley, hunt along that route until the spring thaws set in, and manage to reach the Ottawa in time for the opening of navigation. Then they loitered about the passes of the Chaudière and waited, like Wilkins Macawber, for something to turn up.

While waiting thus for their prey to break cover, from up or down the river, they devoted their spare time to various occupations. To the oki, whose thunderous voice was heard in the roar of the falls, they made sacrifices of tobacco; while the Mohawks and Onondagas each gave a name to that cauldron of seething water which is known to us as The Big Kettle. The Mohawks called it Tsitkanajoh, or the Floating Kettle, while the Onondagas named it Katsidagweh niyoh or Chief Council Fire. It is possible that our Big Kettle may be a modified or corrupted translation of the Mohawk term.

(To be continued).

WHAT IS A "SPECIES"?

BY F. H. WOLLEY-DOD, MILLARVILLE, ALTA.

There is perhaps no word in the English language of which the true meaning, as applied to living organisms, has been discussed at greater length than the word "species." Strictly speaking, of course, the word is a latin one, which has become anglicized under what we believe to be its original form, or at any rate as the Romans used it in the time of Julius Caesar, and we shall find the same meaning given whether we look it up in an English or a Latin Dictionary, viz., "a sort", or "kind", "an aggregate of individuals". As a matter of fact the wholly unscientific man, "the man in the street" rarely uses the word at all. He doesn't understand its meaning. "A kind", or "sort" is expressive enough for him, and anyone can understand what that means. But for the naturalist the third meaning here given, "an aggregate of individuals" is the one which better expresses his meaning when he talks of a "species".

So long as we do not think too much about it that meaning is good enough, that is to say we use it to mean an individual kind, an aggregate of individuals,as entirely distinct from another individual kind or aggregate of individuals. He would be an argumentative man indeed who would dispute the fact that an oak was quite a distinct kind of tree from a fir, or that a pheasant was quite a distinct bird from a duck, or, amongst animals, a fox distinct from a bear. And most people will be quite willing to admit that there are different kinds, or more technically, "species", of oaks, firs, pheasants, ducks, foxes, and bears. That is to say that there are certain aggregates of individuals or "species" of each of the above named things that are more or less easily to be distinguished from other aggregates of individuals of the same class. That these kinds are to be distinguished each by certain characters of colour, form, habit, etc., not possessed by the other kinds is implied by the use of the word "species". Naturalists may tell us, for instance, that the grizzly bear is quite distinct from the brown bear by the colour of its fur, the shape of its head, the comparative size or shape of certain bones in the body or limbs, habits of feeding, etc. Or botanists, that a certain species of oak is distinguished from another by the shape of its leaves or acorns, or the exact way in which they grow from the twigs, by the form of growth, or shape of the tree itself, by the colour or texture of its wood, and in each case that these characters are not possessed by any other species. But why these kinds should be considered separate because they differ in these parts, or what degree of difference is necessary before

two kinds or aggregates of individuals may be spoken of as distinct species, is involved in the title of this paper, "What is a species"?

The query is not an easy one to answer where very similar forms, and, in many instances, even where totally dissimilar forms are concerned. For it must be understood from the first that dissimilarity of form does not necessarily indicate distinctness of species in the broadest sense of the word. The late Charles Darwin wrote volumes dealing in one way or another with the subject. From his point of view, about the best definition that can be given a species is "an aggregate of individuals capable of producing, under natural conditions, progeny of their own form, through successive generations". That is the most exclusive sense in which the term can be used. But it is obvious that the difficulty of discussing how far that ability exists, or whether it exists at all, in a very large proportion of the multitudinous forms of organic life, has given rise to much of the past or existing controversy of the relationship of forms or kinds. The power of reproduction exists in very many instances between allied kinds generally admitted to be distinct species; generally speaking the more closely allied two species are, the more frequently will crosses between them be found in localities where the two live together. But amongst animals, with few exceptions, the reproductive power in such cases is not transmitted to the offspring. In other words, true hybrids, i.e., the progeny of crosses between different but allied kinds, are themselves infertile, or sterile, or, in the case of the few exceptions, they become sterile in the subsequent generation. This does not apply in the same way to plants, in which the means of perpetuation are very different, hybrids much more frequently fertile, and species still harder to define.

It happens that while some species are confined to very small areas, called "local species", others exist all over a continent, and are called "generally distributed" species.

Now, supposing it were possible to apply this reproductive test to all the various forms in different groups throughout, say, North America, it would be found that in some cases one species existed in much the same form wherever it was found, that is, that different individuals in the same district showed little or no variation one from the other, and that an individual or specimen from a district, say, on the east coast, differed in no essential characters from one from the west coast. Such is called a constant or non-variable species. In other species, individuals or "specimens" may be found varying much from others in the same locality, it may be in colour, size, relative dimensions of different parts, etc. Specimens so differing are

called varieties of the species, which is then called a variable species. "Specimen" is the word naturalists use to indicate a single individual or example of a species. The reasons why one species should be variable and another constant, or one very local and another widely distributed, are very obscure and intricate, and must be sought for amongst hereditary tendencies of bygone ages. They cannot be dealt with in the present paper, which treats of facts rather than causes.

It will often be found, if we trace a "generally distributed" species throughout the various districts where it occurs, that some of the specimens from one locality differ slightly in certain points or characters from others from a neighboring district. The lower down in the scale of life we look for illustrations of this the more easily we shall find them. It is less noticable in the higher than in the lower forms of animal life. It is found to some extent in birds, still more in insects, and in plants more than in either. Some specimens will be found exactly alike from the two districts, others will differ considerably. They are obviously still the same species, but present what is called local variations, or varieties. Follow the species up into a third district, and perhaps a greater number of specimens will be found which differ more or less from those in the first. Follow it up further, comparing numbers of specimens throughout various districts right across the continent. The difference between individuals in different districts will probably be found to vary not nearly so much according to the actual distance of the localities apart, as to the difference between the *geological and climatic* conditions. These conditions differ enormously, say, on the Altantic and Pacific coasts. But as it is not possible to draw, so to speak, any actual line or lines of distinction between those different conditions anywhere in that area, nor even to follow through any gradual regularity of change from one to the other, so, in the case of our widely distributed but variable species, we shall find neither any sudden change of variation or form, nor any gradual regularity of change. And though we may be able to find no district in which the varietal forms differ entirely from those on all the rest of the continent, those from the most climatically or geologically dissimilar districts will probably be found the least like each other, and may even be entirely different in appearance. In other words, the species exists in the different localities as a different "local race," the difference varying probably according to the difference of conditions under which it has to exist. We may have every reason to assume a distinct blood relationship between the various forms. Are we then to call the extremes different "species"? Would they, if brought together under perfectly natural conditions, perpetuate the race, or mixture of

races, *ad infinitum*? It must not be lost sight of that perfectly natural conditions are necessarily the only ones under which the test of specific relationship is a fair one, as it is well known amongst naturalists that domestication or confinement entirely alters the reproductive abilities even of a large number of the higher animals. This is a fact quite apart from the one that most of the various forms, strains, or "breeds" of our domestic animals, birds, or plants are not "species" at all in the scientific sense, but rather variations specialised by man's careful selection. Under complete domestication specific identity soon becomes entirely lost.

In the foregoing illustration of extreme geographical or climatic varieties or local races, it has been assumed that it has been possible to trace relationship clearly through from one extreme to the other When such relationship exists it seems to suggest that the aggregate of all these varying forms should constitute the species. Yet the extremes cannot possibly meet under natural conditions, so that that test cannot be made. Are the extremes to be considered different species?

There can be little doubt, if Darwin's theory be admitted, that it is through the formation and subsequent isolation of such local races that distinct species have been formed through courses of millions of years. Isolation, whether of climatic changes such as the glacial epoch, or by the formation of continents, inundations by sea, upheavals of mountains, etc., effectually prevented the mingling of many races ages ago. which may subsequently have become modified in different ways, and so become quite distinct species from our point of view, or non-variable species may have become so divided, and the isolated portions of them have remained similar or nearly similar to our eyes. Through countless ages they have lost their blood-relationship, and yet they look alike. Are they to be considered distinct species? These things we can only judge for ourselves from close observation and much study in each particular instance.

Not only do multitudinous forms occur, perhaps side by side so enormously variable within certain limits, or so exactly like forms of another supposed species found in one locatily, and like forms of others elsewhere, that without the actual reproductive test we can merely draw deductions from close observation; but probably no two men who have given much thought to the subject have exactly the same idea as to what degrees of difference are necessary, or what exact distance of relationship must exist before two forms can have a right to be called different species. It is unquestionable that many species do exist which show no very close relationship to any others wherever they occur. But a very large number, more particularly amongst insects and

plants, are to be found under such a variety of forms, that division into "species," as naturalists generally use the word, is almost a matter of degree.

Even Darwin, who paid at least as much attention to the subject as any man has ever done, was unable to lay down any hard and fast rules as to where a line, so to speak, was to be drawn between one species and another. It will usually be found that the larger the area from which a student has made his studies of the subject, the wider his views as to what "aggregate of individuals" should be taken to constitute a species. The collector in a small district has a much better chance of judging whether two similar forms in that locality are really one or two biological species than the one who merely examines material collected by another. It is impossible to do more than merely introduce this very old and extremely complex subject in the space here available.

THE FLETCHER MEMORIAL FUND.

The following is a list of the subscribers to the above fund, with the amounts subscribed set opposite each name. The Committee feels that there must still be a goodly number of friends of the late Dr. Fletcher who desire to contribute something towards the proposed memorial, before the list is finally closed. Of the proposed forms of memorial, as stated in the circular sent out by the Committee, the one referring to the erection of a Drinking Fountain at the Central Experimental Farm has proved to be the most popular. Before the Committee, however, can definitely decide, it is necessary to make a further appeal to those who wish to subscribe something, but who have not as yet notified the Secretary-Treasurer of the Committee Mr. Arthur Gibson, Experimental Farm, Ottawa. Any therefore who desire to do so, will help very much in this work of the Club, by attending to this matter at their early convenience.

Hon. Sydney Fisher, Ottawa.	$100.00	O. P. Schreiber, Ottawa.....	$25.00
Dr. & Mrs. H. M. Ami, Ottawa.....	50.00	R. B. Whyte, Ottawa.....	25.00
Hon. Sir F. W. Borden, Ottawa.....	25.00	T. N. Willing, Regina, Sask..	25.00
D. Brainerd, Montreal.....	25.00	Dr. J. W. Robertson, Macdonald College, Que.....	25.00
Dr. T. J. W. Burgess, Montreal.....	25.00	Bishop of Ottawa & Mrs. Hamilton, Ottawa.....	20.00
Rev. Prof. Bethune, Guelph..	25.00	Prof. F. D. Adams, Montreal.	15.00
W. H. Harrington, Ottawa...	25.00	Prof. A. Baker, Toronto.....	15.00
H. H. Lyman, Montreal.....	25.00	Dr. R. Bell, Ottawa.....	12.00
Dr. W. Saunders, Ottawa....	25.00	Lt.-Col. W. P. Anderson, Ottawa.....	10.00

C. B. Alladice, Montreal	10.00
R. W. Brock, Ottawa	10.00
Rev G. Bryce, Winnipeg	10.00
Dr. W. Barnes, Decatur, Ill	10.00
Miss M. E. Blatchford, Cambridge, Mass	10.00
E. R. Cameron, Ottawa	10.00
R. H. Campbell, Ottawa	10.00
Norman Criddle, Treesbank, Man	10.00
G. H. Clark, Ottawa	10.00
N. H. Cowdry, Waterford, Ont	10.00
Geo. Y. Chown, Kingston, Ont	10.00
Col. G. T. Denison, Toronto	10.00
W. T. Ellis, Ottawa	10.00
Sir Sandford Fleming,, Ottawa	10.00
Arthur Gibson, Ottawa	10.00
Andrew Halkett, Ottawa	10.00
T. D. Jarvis, Guelph, Ont	10.00
W. D. Kearfott, New York	10.00
Hon. O. H. Lambart, Ottawa	10.00
L. M. Lambe, Ottawa	10.00
F. J. A. Morris, Port Hope, Ont	10.00
A. H. Mackay, Indian Head, Sask	10.00
J. A. Ruddick, Ottawa	10.00
Mr. & Mrs. Gerald Spring-Rice, Pense, Sask	10.00
Frank T. Shutt, Ottawa	10.00
Dr. S. H. Scudder, Cambridge, Mass	10.00
W. J. Topley, Ottawa	10.00
Dr. J. F. Whiteaves, Ottawa	10.00
Ottawa University, Ottawa	10.00
Montreal Branch of the Entomological Society of Ontario, Montreal	10.00
L. M. Fortier & family, Ottawa	8.00
W. Simpson, Ottawa	8.00
J. R. Anderson, Victoria, B.C	5.00
Mr. A. & Miss Alexander, Hamilton, Ont	5.00
E. H. B., Ottawa	5.00
M. R. Baker, Ottawa	5.00
Dr. H. T. Barnes, Montreal	5.00
A. H. Bush, Vancouver, B.C.	5.00
Mrs. W. A. Burman, Winnipeg	5.00
Walter Burman, Winnipeg	5.00
L. J. Burpee, Ottawa	5.00
T. E. Clarke, Ottawa	5.00
Prof. J. H. Comstock, Ithaca, N.Y	5.00
M. F. Connor, Ottawa	5.00
Prof. J. Craig, Ithaca, N.Y	5.00
Miss E. E. Curry, Ottawa	5.00
Rev. Prof. W. Clark, Toronto	5.00
J. W. Cockle, Kaslo, B.C	5.00
Dr. S. E. Dawson, Ottawa	5.00
F. H. Wolley-Dod, Millarville, Alta	5.00
J. D. Evans, Trenton, Ont	5.00
J. H. Fleming, Toronto	5.00
Hon. Chas. Fitzpatrick, Ottawa	5.00
J. H. Grisdale, Ottawa	5.00
Dr. G. P. Girdwood, Montreal	5.00
Dr. W. L. Goodwin, Kingston	5.00
C. E. Grant, Orillia, Ont	5.00
L. Gerin, Ottawa	5.00
J. A. Guignard, Lausanne, Switzerland	5.00
Lt.-Col. Ed. Harrison, Ottawa	5.00
Dr. G. U. Hay, St. John, N.B.	5.00
Rev. V. A. Huard, Quebec, Que	5.00
Jos. Keele, Ottawa	5.00
J. C. Kearns, Ottawa	5.00
Rev. J. H. Keen, Metlakatla, B.C	5.00
Hon. W. L. Mackenzie King, Ottawa	5.00
Dr. Allan Kinghorn, Liverpool, Eng	5 00
E. E. Lemieux, Ottawa	5.00
Prof. W. Lochhead, Macdonald College, Que	5.00
Dr. W. D. LeSueur, Ottawa	5.00
J. M. Macoun, Ottawa	5.00
Prof. John Macoun, Ottawa	5.00
W. T. Macoun, Ottawa	5.00
J. I. MacCracken, Ottawa	5.00
W. McInnis, Ottawa	5.00
Dr. A. H. Mackay, Halifax, N.S	5.00
A. McNeill, Ottawa	5.00
James Murray, Brandon, Man	5.00
Geo. Murray, Montreal	5.00
C. W. Nash, Toronto	5.00
L. H. Newman, Ottawa	5.00
W S. Odell, Ottawa	5.00
R. M. Palmer, Victoria, B.C.	5.00
B. Spring-Rice, Pense, Sask	5.00

Dr. S. B. Sinclair, Macdonald College, Que.	5.00
Dr. H. B. Small, Ottawa.	5.00
P. B. Symes, Ottawa.	5.00
Dr. J. B. Smith, New Brunswick, N.J.	5.00
D. C. Scott, Ottawa.	5.00
R. F. Stupart, Toronto.	5.00
N. B. Sanson, Banff, Alta.	5.00
John Smith, Ottawa.	5.00
Prof. F. Sherman, Raleigh, N.C., U.S.	5.00
E. J. Zavitz, Guelph, Ont.	5.00
Lt.-Col. W. White, Ottawa.	5.00
J. B. Wallis, Winnipeg, Man.	5.00
Dr. E. M. Walker, Toronto.	5.00
Prof. H. F. Wickham, Iowa City, Iowa.	5.00
Tom Wilson, Vancouver, B.C.	5.00
Prof. F. L. Washburn, St. Anthony Park, Minn.	5.00
A. E. Attwood, Ottawa.	3.00
E. Criddle, Treesbank, Man.	3.00
R. H. Carter, Fort Qu'Appelle, Sask.	3.00
Rev. G. Eifrig, Ottawa.	3.00
J. W. Gibson, Ottawa.	3.00
A. G. Gilbert, Ottawa.	3.00
Jas. MacDunnough, Berlin, Germany	3.00
John Reade, Montreal.	3.00
Mrs. M. P. McIlhinney, Ottawa.	2.50
H. A. & Master Allen D. Harvey, Ottawa.	2.10
Miss A. M. Bishop, Ottawa.	2.00
Paul A. Cobbald, Haileybury, Ont.	2.00
J. G. Campbell, Madoc, Ont.	2.00
Percy Criddle, Treesbank, Man.	2.00
Stuart Criddle, Treesbank, Man.	2.00
H. W. Charlton, Ottawa.	2.00
L. Caesar, Guelph, Ont.	2.00
G. Chagnon, Montreal.	2.00
A. T. Charron, Ottawa.	2.00
W. B. Dawson, Ottawa.	2.00
Prof. J. Fowler, Kingston, Ont.	2.00
A Friend, Ottawa.	2.00
A. A. Girault, Centralia, Ill.	2.00
Miss M. L. Grist, Ottawa.	2.00
Dr. O. Klotz, Ottawa.	2.00
J. Labarthe, Trail, B.C.	2.00
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D. H. Nelles, Ottawa.	2.00
C. P. Newman, Lachine, Que.	2.00
Dr. W. W. Newcombe, Detroit, Mich.	2.00
Jos. Perrin, Halifax.	2.00
Prof. C. V. Piper, Washington, D.C.	2.00
M. L. Rush, Ottawa.	2.00
W. A. Riley, Ithaca, N.Y.	2.00
B. J. Reynolds, Indian Head, Sask.	2.00
W. E. Saunders, London, Ont.	2.00
Miss McKay Scott, Ottawa.	2.00
W. J. Summerby, Richmond, Que.	2.00
Mrs. L. L. Sutton, Ottawa.	2.00
D. L. Van Dine, Dallas, Tex.	2.00
Harry Vane, Treesbank, Man.	2.00
J. B. Williams, Toronto.	2.00
Dr. J. F. White, Ottawa.	2.00
C. Weld, Farmers' Advocate, Winnipeg, Man.	2.00
W. Ayers, Stockton, Man.	1.00
W. Bond, Ottawa.	1.00
Prof. W. E. Britton, New Haven, Conn.	1.00
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A. Cooper, Treesbank, Man.	1.00
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E. D. Eddy, Ottawa.	1.00
H. Groh, Ottawa.	1.00
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F. C. Hennessey, Ottawa.	1.00
Miss I. Hargrave, Toronto.	1.00
Prof. L. R. Jones, Burlington, Vt.	1.00
F. D. Jacobs, Winnipeg, Man.	1.00
Miss K. Lee, Clinton, N.Y.	1.00
W. Milne, Ottawa	1.00

Harold U. Morris, Ottawa...	1.00	H. S. Saunders, Toronto. ...	1 00
G. Michaud, Ottawa.....	1.00	A. G. Spencer, Ottawa.....	1.00
G. F. Matthews, St. John, N.B.	1.00	E. P. Venables, Vernon, B.C.	1.00
Miss I. Ritchie, Ottawa.....	1.00	C. Vane, Treesbank, Man....	1.00
T. G. Raynor, Ottawa.. ...	1.00	E. Vane, Treesbank, Man ..	1.00
Miss Ruby M. Rothwell, Ottawa.....	1.00	Also a number of smaller subscriptions for amounts less than one dollar.	

MEETINGS OF THE ENTOMOLOGICAL BRANCH.

Held at the home of Mr. J. W. Baldwin, March 11, 1909; present Messrs. Metcalfe, Binney, Groh, Young, Eifrig, Gibson and Baldwin.

Mr. Metcalfe exhibited some interesting specimens of Hemiptera. He called attention especially to some species of *Ranatra*, viz., *R. quadridentata*, *R. kirkadyi* and *R. fusca*. These are narrow, long-legged water bugs which he had collected during the past season at Pickerel Point on the Ottawa River. *Cyrtolobus griseus* from oak and *Cligenes minutus* were included in the box, both of which species were new records for the Ottawa district.

Mr. Groh spoke of some galls which he had found on Willow on Parliament Hill, and which were the work of *Rhabdophaga triticoides*. The gall is known as the Willow Bud Gall. The bud scales become elongated, the larva living within a cavity in the interior.

Mr. Young showed a box of lepidoptera which he had just received from Dr. Barnes, of Decatur, Ill. These were all rarities, mostly from Arizona. Among the specimens were some of the interesting genus *Schinia*.

Mr. Gibson read an account of an interesting occurrence of Telephorid larvàe at Charlottetown, P.E.I. Specimens had been received for identification from Mr. Lawrence W. Watson, which had been found alive in considerable numbers in February on ice and snow. These larvàe are known as "snow worms". The species was probably *Telephorus bilineatus*.

Mr. Baldwin exhibited some cases from his collection of lepidoptera, calling attention to some of the more interesting specimens which he had collected during 1908. He gave an account of some of the catches which he had made on certain evenings when collecting at the Electric Railway power station near Britannia. The brilliant lights at this station are certainly very attractive to night flying insects. The writer has visited the station on several occasions and each time came away with his poison bottles and pinning boxes well filled. During the

past season we found the lamellicorn beetle, *Ligyrus relictus*, quite abundantly on several evenings. This beetle which is a close relative of the common May Beetle, or so-called June Bug, has not in the past been at all common in the Ottawa district.

A. G.

The meeting of the Branch at the residence of Mr. Arthur Gibson on the 25th March, was very informal in nature. Those present were Messrs. Halkett, Metcalfe, Groh, Baldwin and Gibson.

Owing to the few exhibits which were made the discussions were of a very general nature. Mr. Metcalfe showed a box of Psyllidae, some of which had recently been named by Mr. Schwarz, of Washington, through the courtesy of Dr. L. O. Howard. These little insects have not received very much study in North America as yet. They are known popularly as "jumping plant lice" from their active habits, although they resemble much more closely a miniature Cicada.

The work of the Birch Skeletonizer, *Bucculatrix canadensisella*, was exhibited by Mr. Groh, along with specimens of the beautiful little moth. Some years this insect does much harm to the foliage of birch trees. It has been found commonly in the Ottawa District.

Some parasitized chrysalids of *Papilio turnus* and *Hyperchiria io*, were shown by Mr. Baldwin. The parasites were probably Tachina flies.

Mr. Gibson exhibited a large potato shaped gall on *Rubus nutkanus*, which had been received from Mr. J. R. Anderson, of Victoria, B.C. Specimens of the hymenopterous gall maker, doubtless one of the Cynipidæ, were also shown. These had emerged indoors during March. A series of the noctuids, *Graphiphora praeses* and *Stretchia normalis*, also from British Columbia, was exhibited. Sir George Hampson's Vol. VII, of the catalogue of the Lepidoptera Phalænæ in the British Museum was laid on the table with the accompanying plates, and was examined with much interest by those present. These volumes are of the greatest value to lepidopterists the world over.

A. G.

Dr. E. L. Greene, of the United States National Museum, Washington, D.C., who has been studying plants of the genus *Thalictrum* in western Ontario, was in Ottawa for a day, or two, last month.

EXCURSIONS.

The excursions arranged for May 1st and 8th were cancelled, the former because on the day before a great mass of sleet and snow had fallen, which made woods and roads impassible, the latter because of much rainfall up to the day before. However, that Saturday turned out to be fine, thus again upsetting all preconceived plans and well meant intentions.

BRITANNIA.

On May 15th the excursion to Britannia was held. It was a lovely day, perhaps the first all-round satisfactory one up till then of the season.

About 40 or 50 members of the Club assembled at the park, where Vice-president Halkett gave out the shibboleth for the day. The botanists under the leadership of Dr. Blackadar, turned to the left to Graham's woods, a good spot for the first wild spring flowers. The zoologists with Mr. Halkett as leader, the geologists under Mr. Wilson and the ornithologists with the undersigned, went to the right into the tamaracs and gravel pit, the ornithologists going farthest afield, beyond the Richmond Road.

After two hours the party assembled again at the starting point. Dr. Blackadar showed specimens of many of the plants that had been found, and spoke at length on the flowers of the trees, especially the poplars, maples, elms, birches and alders. Mr. Wilson, for the geologists exhibited a piece of conglomerate, the process of whose forming could be seen bodily in the exposed lower strata of the adjoining gravel-pit. The undersigned spoke on the birds observed during the short perambulation, which numbered 40 species, as follows: 4 Kingbirds, 1 Least Flycatcher, 1 Crested Flycatcher, 1 Phoebe, 3–4 Meadowlarks, 2 Redwinged Blackbirds, 4–5 Bronzed Grackles, Crows (one nest), 2 Baltimore Orioles, many Robins, 4–5 Veeries, 4 Bluebirds, many Song, White-Crowned, Clipping and Vesper Sparrows, all in song, 2 Juncos, 2 Rose-breasted Grosbeaks and Goldfinches; Chimney Swifts, and even Kingfishers were common, about 8–10 of the latter being seen or heard, (in the gravel-pit several nesting tunnels); Tree, Barn and Bank Swallows (already making nesting holes), 5–6 Flickers, 1 Sapsucker, 2 Downy Woodpeckers, 2 Yellow Warblers, 3–4 Black and White Creeping Warblers, 2 Black-breasted Green, 2 Myrtle, 1 Parula, 1 Palm Warbler, 1 Yellowthroat and 1 Water-thrush; 4–5 House Wrens and 2 Brown-breasted Nuthatches, 2 Spotted Sand Pipers, and 2 Greater Yellow Legs.

Mr. Halkett exhibited quite a collection of batrachians,

mostly leopard frogs, as well as many invertebrates, crustaceans, spiders and worms. Altogether it was a delightful and instructive outing. G. EIFRIG.

BEAVER MEADOW, HULL.

The third outing took place in the afternoon of May 22nd to Beaver Meadow, Hull, perhaps the most profitable field for the Club's out-door work. Owing to fear of the high water then raging in the Ottawa River, which had already flooded a short stretch of the Aylmer Road at the end of Hull, or for some other reason, there was only a small attendance in spite of the fine weather. About 15 persons took part, including only two ladies. For this reason the party did not divide itself up, but stayed together and went out along the west bank of the meadow to the quarry and then crossed on logs, etc., over to the east bank, returning on it. The west bank is perhaps the most prolific place near Ottawa for the botanist, rare plants like the showy orchis (*Orchis spectabilis*) being found there, as well as other kinds of commoner ones in profusion. The ferns fairly revel there, the dainty maiden hair, and the two oak ferns occurring in great clumps. The east bank, again, is a splendid locality for columbine (*Aquilegia Canadensis*), *Habenaria hyperborea*, and the only place in the vicinity of Ottawa where the Red or Wood Lily (*Lilium philadelphicum*) may be found. Many water and swamp plants also abound. Mr. A. H. W. Cleave, Superintendent of the Royal Mint, who has since been added to the membership roll of the Club, exhibited a great amount of small and semi-microscopic life-forms, which he with an ingenious contrivance fished out of the stagnant waters along the way. Besides larvae of mosquitoes, dragon flies and mayflies he showed specimens of *Daphnia* and *Cypris*.

Although the day was fine and the migration of birds at its height, they were not as plentiful as was to be expected, only 27 species being noted. These were: several Chimney Swifts, 1–2 Nighthawks, 1 Phoebe, 1 Crested Flycatcher, 5–6 Bronzed Grackles, 1 Flicker, 10–15 White-throated Sparrows, and many Song and several Clipping Sparrows, the Tree, Bank and Barn Swallows, 1 Blue-headed Vireo; the following warblers, Bay breasted, Nashville, Myrtle, Yellow, Chestnut-sided, Black and White- Creeping, Blackthroated Green, the Ovenbird, Redstart, Yellowthroat, the House, Winter and Short-billed Marsh Wrens, many Robins, several Bluebirds and Veeries or Wilson's Thrushes, 2–3 Catbirds and 1 Killdeer. The habitant living at the entrance to the lane into the meadow had a queer cage-bird, caught that day, in the shape of a Sora Rail (*Sora Carolinana*). A nest of the Red-shouldered Hawk, about 35 feet up in an elm tree was in-

spected by Mr. Groh, who proved the best climber, and found it to contain two eggs. The female only left the nest, noiselessly, when the climber was half-way up. The nest was about two feet in diameter, the inner cup about 8 inches, lined with pine twigs, stripes of birch and soft inner bark and down of the bird itself. They use the same nest over and over again, but each year decorate it with green branches of pine, whereby it can be seen at once from below whether it is a used hawk's nest or not.

Insects were beginning to appear in numbers but nothing of special rarity was met with during the afternoon. Mr. Arthur Gibson noted a few nests of the American Tent Caterpillar. These were just beginning to assume a conspicuous size. A few specimens of the small early spring blue butterfly were seen, and one or two of the Pure White. Some beetles and other insects were collected by the entomologists present from under the bark etc., and a small collection of spiders was made.

G. EIFRIG.

CHELSEA, QUE.

The general excursion to Chelsea was held on Saturday, June 5th.

Owing to the uncertain state of the weather, the attendance was not as large as usual. However, despite the clouds and humidity, among those present were Mr. Attwood, Rev. Mr. Eifrig, Mr. W. J. Wilson, Mr. and Mrs. J. H. Putman, Mr. McGillivray, Mr. R. H. Campbell, Miss Christie, Mr. Shannon, Miss Matthews, Mr. H. S. Winchester, together with a number of Normal lady students in charge of Mr. and Mrs. Thos. Brown.

On reaching Chelsea the members were divided into groups. Mr. Wilson led the geological branch, while Mr. Attwood and Mr. Eifrig jointly took charge of the botanists and ornithologists. After making a tour through the woods, visiting Gilmour Island and rapids, the second party moved along the west bank of the Gatineau River, till the old boom house was reached, ascended the hill, recrossed into the woods and finally reached the railway, near the Chelsea summit, after gathering flowers and studying the birds, under direction of the leaders, as they passed along.

The geological party examined the rock cuttings along the railroad. A good exposure of garnetiferous gneiss is seen a short distance north of Chelsea Station. The foliation is well shown, the rock being smoothed and polished by ice action. The striae run nearly south at this point. Resting on the gneiss there is a good section of the pleistocene deposits. Boulder clay with striated boulders lies directly on the rock, next there is a mass of Leda clay and on top of this the Saxicava sand. These deposits vary from almost nothing to twenty or thirty feet

in thickness. Specimens of *Saxicava rugosa* and *Macoma Balthica* were found in the clay and sand on Saturday, and on former visits a few specimens of *Leda* (*Portlandica*) *Arctica* and *Balanus crenatus* were collected. These four species live only in salt water and their presence proves that these deposits were laid down in the sea or on its shore, and therefore the relative height of the land at Chelsea has changed at least four hundred feet since their deposition.

On returning to the station, Mr. Attwood called on Mr. R. H. Campbell, who addressed the gathering, giving much useful information regarding tree plantation and the need of better preservation of certain coniferous trees whose reproduction is slow owing to the seeds requiring two or three years to mature. He also drew attention to the wonderful attraction exercised by the sun upon the leaves, and to the fact, that when the leaves of a tree happen to be small, there is always a greater number of them to make up the requisite leaf surface.

Mr. Eifrig followed, speaking on the migration of birds and their habits. He stated that they were moved by two impulses, food supply and the propagation of their species, that the latter was the stronger, leading many of them to the far north, where they were reared, from regions as far south as Bolivia and Peru. Referring to the comparatively few birds seen during the afternoon, he attributed it to two reasons, viz., the nesting season and the depressing state of the weather, which always exerts a quieting effect upon birds whose organisms are delicately balanced. However, the following birds were seen:—Chimney Swift, King Bird, Alder Flycatcher, Meadowlark, Blackbird, House Wren, Goldfinches, Junco, Bank and Barn Swallows, Ovenbird, Black-throated Blue Warbler, Hermit Thrush, Chickadee, Black-throated Warbler, many Song, White-throated and Clipping Sparrows, Blackpoll and Chestnut-sided Warblers, and the Vesper Sparrow, who sang his loud and musical song as the train started for Ottawa, thus concluding one of the most enjoyable revels that the writer has ever had with Dame Nature.

E. C. W.

CARP, ONT.

The excursion to Carp on May 29th was not so largely attended as was expected owing to the uncertainty of the weather, and yet there was a goodly number on board when the train left the Central Station at 11.50 a.m. On arriving at Carp the party proceeded to the school house and was received there by the teaching staff, who did all in their power to make the afternoon an agreeable and profitable one. The school building is a fine one, and stands on an eminence which commands a splendid

view of the surrounding country. The outlook from the windows should often give fresh inspiration to both teachers and pupils, when their tasks threaten to become wearisome. The gardens which are a part of the Carp school, showed no signs of life as yet, but were only waiting for the advancing season to complete the work of the youthful horticulturists.

Inside the building were many evidences that the study of nature was not neglected. Among other things were noticed a display of colored prints of birds, and an arrangement of glass, in which the development of butterflies and moths, from their earlier stages could be conveniently observed.

After those who had not had luncheon had satisfied the inner man from their own baskets in the school rooms, or had availed themselves of the resources of the village, the party proceeded to a grove that was not far distant, and there separated under the different leaders. The geological division climbed the Laurentian rocks, a rather trying exertion in the hot sun, but there were clusters of fresh green ferns growing in the crevices of the rocks, and other beauties to cheer them on their way, and, at the top, the surprise of green pools of water with the little sweet-scented white violets growing on their margins well repaid even those who were quite ignorant of matters scientific for their labors. It is true these same charming pools produced numerous mosquitoes, an evil which, there being no remedy for it, each of the excursionists endured with all the patience he or she could command.

In the course of the afternoon the uncertain weather changed to the certainty of a brief thunder storm, which was not an altogether uninteresting episode, although it curtailed the explorations of the more timorous spirits. The addresses, when the party reassembled, were given in front of the school house, and afterwards hot tea was served in the building.

After a few remarks by the President, Mr. Attwood, Mr. T. E. Clarke was first called on to speak of the botanical specimens collected. The botanical field at Carp, while not extensive is quite varied. Close to the village, as above mentioned, there is a grove where the typical plants of rich woodlands are to be found. To the left is a low flat, through which the Carp river flows, while at some distance to the right are two rocky ridges, more or less wooded. Of the rarer plants collected, *Polygala paucifolia* was found in the open woods on the sandy hill just beyond the school garden, and *Trillium erythrocarpum* on lower ground. The Blood-root, *Sanguinaria canadensis* was observed in flower in great numbers. Unfortunately the rain prevented an examination of the ridges, where some interesting species were obtained on the occasion of a former excursion.

Miss Norton of the Carp High School, in a few well chosen words spoke of the pleasure derived from the visit of the Ottawa Field-Naturalists' Club. As a member of the Committee chosen to consider the formation of a branch of the club at Carp, she felt sure that such an organization would be a help to those engaged in teaching, and a pleasure to all who would join with the club in such a work.

Mr. Arthur Gibson spoke briefly of some of the insects which had been observed during the afternoon. Mosquitoes were out in full force and the relation of these pests to malaria and some other diseases was mentioned. A few nests of the American Tent Caterpillar had been observed, as well as a few of the early butterflies, such as the Spring Blue, the Clouded Sulphur, the Small White Cabbage and the little black Skipper. Specimens of the White Grub were shown and information asked as to its economic importance. This well known insect, the larva of the May beetle, or June Bug, annually does serious damage to the roots of grasses and other plants.

Mr. W. J. Wilson spoke of the geological formations in the vicinity of Carp and exhibited samples of mica, hornblends, feldspar, magnetite and apatite, and explained briefly some of their physical properties. The most interesting was a specimen of apatite in which the crystals were considerably curved, owing to long continued, steady pressure. Similar crystals were noted by Dr. Ami at a former visit of the Club to this place. Evidence that the land had been under the sea at a comparatively recent date, geologically speaking, is found in the fact that the sand and gravel abound in marine shells, specimens of which were shown. These forms live in the ocean at the present time.

Mr. F. T. Shutt congratulated the people of Carp on the fact that they were about to form a branch of the Field-Naturalists' Club and said it would be the aim of the Club to give all possible assistance.

Rev. Mr. Eifrig spoke of the birds the ornithological party had seen, viz., Flycatchers, 2 Phoebes, 6 Kingbirds, 3 Pewees, 1 Crested Flycatcher, 5 Chebecs, Blackbirds, etc., 10 Bronzed Grackles, 10 Meadowlarks, 8 Bobolinks, 4 Red-winged Blackbirds 2 Baltimore Orioles, Crows, Woodpeckers, 1 Flicker, Sparrows: 2 White-throated Sparrows, many Clipping, 4 Vesper, many Song, 5 Savanna, a flock of about 20 Goldfinches, English Sparrows, (many nests with 4–6 eggs in a barn). Swallows: 6 Purple Martens, 10–20 Barn Swallows, (1 nest with 7 eggs, 2 with 2 eggs), many Bank Swallows, Warblers, 6 Yellow, 4 Black and White, 2 Blackpoll, 2 Chestnutsided, 1 Blackthroated Blue, 4 Yellow-throats, Thrushes, many Robins (nest with 3 young), 8 Blue-birds, Wrens, etc., 5 House Wrens, 1 Winter Wren, 1 Brown

Thrasher, all singing beautifully, besides 2 Spotted Sandpipers, 1 Kingfisher, many Chimney Swifts, 1 Humming Bird, 4 Redeyed Vireos, 1 Killdeer, 1 Red-shouldered Hawk, 2 Nighthawks. Total, 41 species. In closing he exhibited a number of birds' eggs which had been collected by a young lady of Carp.

Mr. J. W. Gibson, of the Ottawa Normal School, and Mr. G. A. Moore, Principal of the Carp High School, briefly addressed the gathering.

Between some of the addresses, Mr. T. A. Brown and the Normal Students furnished some excellent music.

The evening after the rain, was indescribably lovely and must have brought a "suspension of disgust" to use a Bryonic phrase, to any world-weary individuals of the party, if such there were, and none could leave so restful a scene without regret.

E. McQ.

CROSSBILLS NESTING IN SOUTHERN ONTARIO.

BY W. E. SAUNDERS, LONDON, ONT.

A nest of Crossbills, species unknown, was found last April by Mr. Harold J. Clark in a small woods about two miles east of London. On April 28th the nest was taken. It contained three eggs, with a bluish-white ground, sparingly streaked and spotted with black and brown. The nest was placed in a maple tree against the trunk, 45 feet from the ground, and was composed mainly of bark strips with additions of grasses and twigs and was lined with fine bark strips. The nest contained also, the egg of a Cow Bird which shows that the latter species does not intend to lose any opportunity for reproduction, this being a very early date for Cow Bird's eggs to be found.

This forms the first stated record of Crossbills nesting in lower Ontario and it is to be regretted that the nest was not seen *in situ* by someone who could have identified the species before the eggs were taken. It is likely, however, that the nest belonged to the American Crossbill, as no white wing-bars were noticed and this species has been moderately common during parts of the past winter.

Some years ago, I received a report of the occurrence of White Winged Crossbiils in spotted plumage, young birds of course, which were taken near London, in April or May, and had doubtless been raised in the vicinity, but the specimens had been lost when I heard of it and no re-occurrence of the event had been suspected until the present year. As the Crossbills belong to the most erratic group of sparrows, as regards nesting habits, we need not be surprised if such occasional records are made.

The Ottawa Field-Naturalists' Club.

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THE RIGHT HONOURABLE EARL GREY,
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