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TREET.

THE OTTAWA NATURALIST.

Vol. XVIII.

OTTAWA, DECEMBER, 1904.

No. 9

THE WINTER FRINGILLIDÆ OF NEW BRUNSWICK.

By WM. H. MOORE, Scotch Lake, N.B.

The list of birds given below includes the members of the finch and sparrow family which occur in New Brunswick, during the months of December, January and February. During these three months migration is as nearly at a standstill as at any time during the year. This family is represented by more species than any other family of birds at this season. So far as known twelve species may occur here during the winter, in greater or lesser numbers, being sometimes plentiful and even abundant and in other years rare. The winter of 1902-3 brought several surprises. The regular winter birds were no more plentiful than common, but some of the summer birds remained throughout the winter, and were really more common than is usual during summer. This fact caused the writer to believe that migration is not governed by temperature alone, but more by the food supply. That winter the conifers, birches and alders carried a good supply of fruits upon which the *Fringillidæ* fed. During the summer of 1903 it was noticed that there were no new cones upon the coniferous trees, and a nearly birdless winter was predicted to follow. The prophecy was correct, the birds were very scarce in this section throughout the winter of 1903-4.

PINE GROSBEAK. *Pinicola enucleator*.

This is a rather rare summer resident throughout the southern half of this province. They come south in autumn in flocks of from three or four to fifty. By people little acquainted with birds they are often mistaken for robins. Their habit of living in summer in coniferous forests, generally far from the haunts of man,

causes them to have little fear of him when they come south, and one may approach quite closely to examine them.

Their food in winter consists of almost any of the persistent fruits. A favorite food is the seeds of the mountain ash, which they pick from the trees and even from the ground where they have been blown by heavy winds. This winged fruit they dissect taking only the meat. Apples left upon the trees are also eaten. At times the pulp is cast away and only the seeds eaten, and again their crops have been found to contain the pulp. They also feed upon the fruit of the sumach. Their never failing diet is the tips of twigs of the fir trees. These tips are bitten off, and to reach them the birds at times hang nearly upside down, as the lithe limbs bend with the weight of the birds. When this food has been eaten the bill is coated with balsam. Elm buds also are eaten after they begin to swell in spring.

The flight of the pine grosbeak is slightly undulating, and when on the wing they often emit a soft loud whistle, by imitating which they may be induced to alight near by. Some ornithologists claim that this species nests far north, and so early in the spring that the eggs are laid before the snow has gone. This may be true, but it is also true that they breed in New Brunswick in the month of July.

PURPLE FINCH *Carpodacus purpureus.*

This species is in appearance a small edition of the pine grosbeak. The males much resemble each other in color, but the females and young males of the purple finch lack the yellowish breast and rump of the grosbeak. This species stayed throughout the winter of 1902-3. They were often heard to sing, but the song lacked the energy that is given it during the nuptial season. The song of the young male is not so rich as that of the adult male, and consists of a few short notes in place of the long, flowing song of adult. The males do not attain the purple plumage until the second year. Their food in spring is buds of various trees, the favourite being those of the poplar and the balsamy buds of the fir; later, insects are added to the bill of fare. An adult male was observed in October eating the woolly aphid which infests alder bushes. Although arriving from the south early in spring the nesting season is deferred until after the middle of June.

ENGLISH SPARROW. *Passer domesticus*.

This species lives in winter in towns and villages. The families raised throughout the country in summer return to their winter quarters during October. A few pairs nest even in winter. In April they begin to scatter about the country again.

RED CROSSBILL *Loxia americana minor*.

This species was very common during the winter of 1902-3, feeding upon the salted gravel which we put out upon a small board for them. This preparation they ate greedily, seeming to be particularly fond of the salty flavor. They were joined at the salt-lick, as we termed it, by the white-winged crossbill, pine finch, goldfinch and redpoll. When eating they would turn the head, side downward, to enable them to catch up the particles in the bill. When licking the salt the tongue would be extended, until the base was out past the tip of the bill. The tongue would be protruded and withdrawn*four times per second. They nested during the winter, as we now saw them collect tendrils from a vine at the house, and also observed them getting wool. The females only were collecting the material, their mates assisted by doing the looking on. In February young birds of this species came to the salt-lick, and still had the down adhering to the tips of their feathers.

WHITE WINGED CROSSBILL. *Loxia leucoptera*.

This species may be termed a rare visitor in the vicinity of Fredericton, yet they are known to live in summer in the northern highlands of the province. Occasionally they come this way and at times are fairly common. This species, like the preceding one, feeds upon the fruits of spruce, black alder and birch, and like the former rears its young in winter. The wing-bars, of the first plumage of the young, are of a tan color. The song of the adult male is somewhat like that of the purple finch, and is poured forth while the bird is on the wing, either circling above and around his mate, or when floating in the air after the manner of the purple finch. Beautiful indeed are they as they display their colors, some clear sunny day, against a background of snow-laden conifers.

HOARY REDPOLL. *Acanthis hornmannii exilipes.*

This species has been taken at Peticodiac, in eastern New Brunswick, and is considered very rare.

COMMON REDPOLL. *Acanthis linaria.*

These birds are so erratic in their wanderings that one winter they may be abundant, next winter none, or come in autumn, pass on and not be seen here again until the following winter. Their favorite food is the fruits of the yellow birch and black alder. Weed and grass seeds are also eaten extensively. The writer has watched redpolls feeding upon seeds put out for them. They would feed for seven hours daily, and at the rate of fifty seeds per hour. This species should surely be befriended by the "Man with the hoe."

AMERICAN GOLDFINCH. *Spinus tristis.*

During the winter of 1900-1 goldfinches were observed here, February 15th, a very unusual occurrence, the usual time of arrival being in May. The greatest surprise came two years later when this species stayed all winter. The males were about the same color as the female's summer plumage, being entirely unlike the bright yellow plumage they wear in summer. The crown lacks the black cap, being the same color as the back. By the first of April the color of the plumage began to change. A few black feathers began to come in the crown and the body feathers began to show some yellow. By the middle of May nearly all were changed to the garb of summer. They fed throughout the winter upon the fruits of the yellow birch and cedar or arbor-vitæ.

PINE FINCH. *Spinus pinus.*

This species, like the redpoll, is so erratic in its movements that one never knows whether or not it will occur during the winter season, yet it is during the winter that we are most sure of its presence. They, like the goldfinch, feed upon the fruits of the yellow birch and arbor-vitæ. When occasion demands they are pugnacious mites, as when at the salt-lick they would drive the crossbills away. The yellow of the plumage is much more bright in spring than in autumn. When the male is paying his respects to the female of his choice, he displays his colors to good advant-

age, and as he performs in her presence with out-spread wings and tail, he is truly a beautiful little bird.

SNOW BUNTING. *Plectrophenax nivalis*.

This is the most easily recognized of any of our *Fringillidæ* of either summer or winter. Their food consists of seeds of weeds and grasses, of which they get an abundant supply in haystacks. It is alleged by some writers that snow buntings never perch on trees, but it is not uncommon to see them resting upon trees when not feeding, and I have observed them perched upon telegraph wires. Near our house is a spring stream that stays open all winter. One day four snow buntings were observed to come and bathe in the stream. They fluttered and splashed in the water as we often see birds do in summer, and then as if to dry their plumage they fluttered into the loose snow along the stream, working their way into the drifts until nearly buried. The whole performance occupied about five minutes. To one of us it would have been five minutes too long, as the temperature was several degrees below freezing and the snow was blowing along very freely.

TREE SPARROW. *Spizella monticola*.

This species is most common along river valley roads that are ringed with thickets of bushes. Seldom more than two or three are seen in one company. They are not common in winter in this section.

SLATE-COLORED JUNCO. *Junco hyemalis*.

A few individuals of this species are apt to remain with us throughout the winter. Their stay is probably regulated by the food supply. They evidently feed upon seeds taken off the ground or from low weeds.

SONG SPARROW. *Melospiza fasciata*.

It was another surprise to learn that this species also occasionally remains with us all winter. They are not rare along the southern coast in mild winters, but until the last two winters no record was known of their presence in the interior of the province. The last two winters some have stayed near here. They lived about a grist mill, and were supplied with food by the miller, who threw out fowl seeds to them.

EXPERIMENT ILLUSTRATING THE CIRCULATION OF
FLUIDS AND VITALITY IN PLANTS.

BY AN OTTAWA NATURALIST.

For some years back I have had a violent fancy for the common buttercup, (*Ranunculus acris*, L., introduced from Europe) which has spread so rapidly and in such numbers in our meadows, fields and orchards that it is one of the very commonest weeds in many portions of Canada to-day.

It is in point of construction one of the most perfect of our flowering plants. Look at its roots, its stem, its leaves, its hairs, its branches, petioles, flowers; the calyx, corolla, stamens, anthers, pistils, stigma, everything about it, and note the order, shape, relations and arrangements of these parts and their symmetry; keep this order in your mind as representing the type of a large and important family of plants, the family which stands at the head of all plant-life in point of perfection. There are many interesting experiments and studies which centre round this species.

The following experiment with a wilted sprig of the common buttercup, which measured nine inches in length, will serve to illustrate not only the great rapidity with which this species takes up moisture—water—through its marvelous system of canals in its internal construction, but also the vitality which it exhibits.

Taking this nine-inch specimen of the common buttercup which, by the bye, had remained for fully an hour and a half in a glass without water, it was observed that all the flowers and buds at the tops of the branches or petioles had wilted, and to such an extent that some were hanging with their receptacles facing the ground and for quite a distance back some of the petioles also were seen to be in an inverted position, at right angles to the horizontal.

It may be noted that the wound made to the plant, where it was severed, two or three inches from the root, as is the case in most plants had been partially closed up by dint of the constriction which took place in the shredded cells during the drying process. This phenomenon appears to indicate the provision made or contrivance used to retain as long as possible whatever moisture the

plant holds. A fresh and clean cut was then made by means of a sharp pair of scissors, a few millimetres above the old wound. It was twenty minutes after four in the afternoon when the plant was cut and placed in the glass with a little water at the bottom in order to test the absorption power and vitality in the specimen at hand.

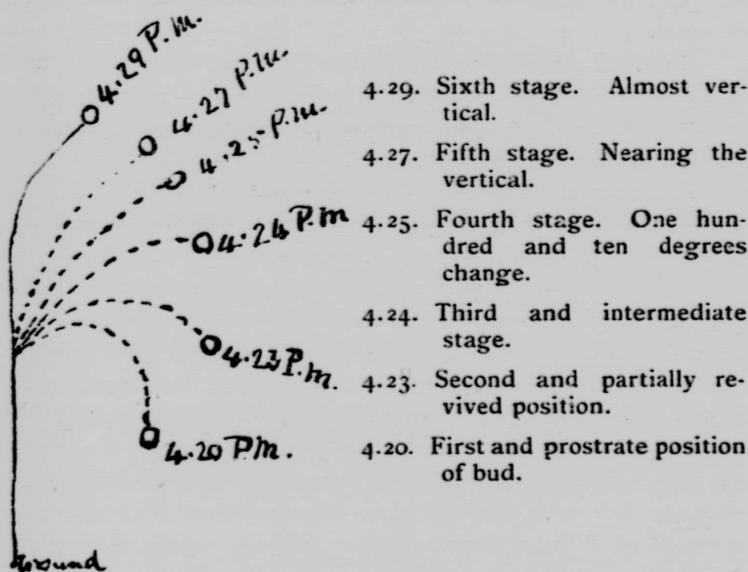
In less than one minute there was a clear evidence of a stiffening in the wilted petioles which formed decided curved lines or arches with the flowers and buds drooping or inclined at various angles.

At twenty-three minutes after the hour, there were clearer signs of a revival, and the buds and flowers had begun to raise their heads from the positions in which they severally were at the outset, and the topmost bud had changed its position fully 30° . Following the course pursued by this bud, at twenty-four minutes after four, it was fully 60° away from its first position. At twenty-five minutes after, this bud had made an arc of a circle subtending a right angle or 90° . At twenty-seven minutes after, making seven minutes after the experiment was begun, the topmost bud, and the part of the petiole supporting it showed no sign of wilting or prostration, but was gradually and effectively reaching the normal position in the fields, having raised itself an additional twenty-five or thirty degrees. At twenty-nine minutes after the hour, by far the longest part of the petiole was quite erect with the terminal bud very nearly vertical.

Thus it appears that in nine minutes of time only, the drooping and prostrate bud, which had been cut off from the natural and steady supply of moisture for its support, after the plant had been immersed, at its wound, in water, had taken up sufficient moisture to restore and revive its branches, causing them to raise their heads, describing an arc subtending an angle of fully one hundred and fifty degrees.

When the experiment was first tried it was further noted that the first branches to give evidence of new life and vigor, were those nearer to the base or root. The first branch took the first supply of water, and the second branch took the next on, in regular order to the top. The topmost bud was the one selected for the experiment and calculations which proved most interesting. A sheet

of white paper was placed on the table behind the glass and as the flowers and buds rose, their precise location indicated on the paper. The different readings of the terminal bud are given in the accompanying diagram.



I have no doubt that tables of relative speed giving the ratio of absorption of different plants and different parts of the same plant would be interesting data concerning the duration of life and vitality in plants. This would also form an exceedingly interesting pastime to anyone seeking a few minutes' pleasant recreation during the summer season.

It may be added that after removing the same specimen from the water and allowing it to droop again, it was ascertained, in two successive experiments that the vitality and power of absorption as exhibited in the degree of energy displayed in the buds and flowers re-assuming their natural and relative positions, diminished each time.

The last two experiments were made about an hour apart and the plant revived much less rapidly than in the first experiment,

which was then several hours after the plant was gathered in the fields, the plant exhibiting such difficulty in retaining its natural position that even after making a fresh cut there was but very little energy displayed on the part of the plant, and the experiment which for the time being proved so intensely interesting was abandoned.

A similar and collateral experiment was made at the same time with a field daisy (*Chrysanthemum leucanthemum*, L.) another introduced plant, a weed, but a beautiful one, and it seemed to show that the process of absorption in this plant was much less rapid and effective than in the common buttercup.

It is a well recognised fact that the buttercup grows best in the dampest places in fields and meadows.

In the moist atmosphere and prevailing damp climate of the Maritime Provinces where the experiment was made, buttercups grow in what appears to be dry places, but in reality the air is so saturated with moisture, hygrometric readings being always high, that a plant, like the buttercup, requiring moisture, feels at home anywhere.

I would strongly recommend some of our your younger naturalists to try the experiment for themselves with the common buttercup or any other plant they may choose within their neighbourhood during the coming season.

McArras Brook, Antigonish County, N.S.

THE ANNALS OF THE FALL MIGRATION.

By A. B. KLUGH, Guelph, Ont.

The first intimation of the fall migration of 1904 was given by the bobolinks, our breeding birds disappearing on Aug. 3rd, and the first of the more northerly birds being seen on Aug. 12th. The cliff swallow was the next to depart, leaving on Aug. 14th. On Aug. 17th the yellow warbler, which had not been present in its usual numbers, took its departure, and the first black ducks were seen. On Aug. 19th, the warbler hosts from the north were ushered in by the appearance of the Tennessee, a single specimen being taken on that date. A small flock of mourning warblers, the males in full song, was noted on Aug. 21st, and this was the last seen of this species, which is a scarce summer resident here. On Aug. 23rd a Cape May warbler was taken while flitting about in the tops of some white pines in the centre of a mixed bush, and proved to be an adult male. A flock of black-poll warblers was noted on Aug. 31st, and one of bay-breasted on Aug. 31st and on the latter date another Tennessee was taken. Sept. 4th saw the departure of the night-hawk and indigo bunting, and on Sept. 5th the last Wilson's thrush was observed. On Sept. 6th, the wood thrush, whip-poor-will and wood pewee were noted for the last time, a flock of northern Parula warblers appeared, and a Philadelphia vireo was taken. Sept. 7th saw the last of the bobolink, barn swallow and tree swallow, and on Sept. 8th the kingbird departed. On Sept. 8th also the first flock of myrtles from the north arrived; previously to this I had only seen the families of those (three pairs) which had bred here. The Blackburnian warbler and northern Parula were seen for the last time and a Connecticut warbler taken on Sept. 9th. Sept. 10th witnessed the departure of the waterthrush, and the first palm warbler and a flock of Tennessees (the last seen) were noted. On Sept. 12th the olive-backed thrush was seen, and on Sept. 13th the scarlet tanager and oven-bird departed and the ruby-crowned kinglet and brown creeper appeared. None of the last-named species bred in the vicinity this year though they usually do so. On Sept. 14th the last was seen of the green heron, a pair of which species bred in this locality. On Sept. 15th flocks of slate-colored juncos from

the north augmented the small numbers of that species which had been reared in the vicinity, the gray-cheeked thrush was noted and the red-winged blackbird seen for the last time. The 17th saw the last of the bay-breasted warbler, and chestnut-sided warbler, a few broad winged hawks were noted and another adult male Cape May warbler taken. This bird was in a flock consisting of chickadees, black-throated green warblers, myrtle warblers and chestnut-sided warblers. The crested flycatcher left on Sept. 18th and on Sept. 19th the American redstart was noted for the last time and the last Cape May also, an adult male, taken. The black-throated blue and palm warblers, Maryland yellow-throat, Savanna sparrow, cowbird and catbird were last noted on Sept. 20th, and the horned grebe and yellow-bellied sapsucker appeared. The last species is a scarce summer resident here, and none bred in the immediate vicinity this season. Sept. 21st saw the departure of the cedar waxwing, magnolia warbler, and sharp-shinned hawk and the first fall American herring gulls were noted. On Sept. 22nd the last red-eyed vireo and black-and-white warbler were noted, also a flock of white-crowned sparrows and three white-winged scoters. The rusty blackbird, American pipit and ruddy duck appeared on the same date and a flock of surf scoters was seen. On Sept. 25th a red-tailed hawk, seen here only on migrations, was noted. The last ruby-throated hummingbird and American bittern were seen on Sept. 26th and the black-throated green warbler, black-poll warbler, blue-headed vireo and yellow-bellied sapsucker left on Sept. 27th. On the same date the hermit thrush was first noted. Sept. 28th saw the departure of the phoebe and red-shouldered hawk; an American osprey was noted on the same date, and on Sept. 30th the last was seen of the Nashville warbler, an abundant migrant and scarce breeder in this locality. On Oct. 1st the first redhead was noted. On Oct. 3rd the house wren disappeared and the only green-winged teal seen this fall were noted. On Oct. 11th the last meadowlark was seen and on Oct. 13th the last flickers and swamp sparrows. Oct. 14th saw the last of the towhee, chipping sparrow, purple finch, hermit thrush and myrtle warbler, and on Oct. 15th a pigeon hawk was seen. On Oct. 16th the winter wren disappeared and on Oct.

20th the last kingfishers, rusty blackbirds, white-throated sparrows, song sparrows, vesper sparrows and bluebirds were seen. On the same date the tree sparrow appeared. Oct. 28th saw the last of the ruby-crowned ringlet and the first for this fall of the American scaup duck. On the same date two flocks of fox sparrows were noted. On Oct. 31st the black duck and redhead were seen for the last time, the red-breasted merganser and bufflehead appeared, a pair of hooded mergansers, and three Canadian jays were noted. On Nov. 1st a flock of pine siskins were noted and the last American robin seen. On Nov. 3rd the last was seen of the mourning dove, a mallard and two American mergansers were noted, and the northern shrike appeared. Nov. 6th saw the last of the marsh hawks and the first of the redpolls.

A SERIOUS MISUNDERSTANDING BETWEEN MY SQUIRREL AND ME.

By M. E.

My home has been aptly described as "a large bay-window, a wide verandah, and an over-hanging willow-tree, with a small house in the rear." I live in the small house in the rear; my squirrels live everywhere else. My family is even smaller than the house; the squirrels I have never been able to count; but a small neighbor, who visits in their family, tells me that he counted twelve, at one time, and saw two more directly after. I can boast of feeding four, under the willow-tree, one afternoon last summer. As a rule, however, there are only two; a small, shy one, and a great, fat, tame one. They run up the willow-tree and out on a bough that overhangs the verandah roof and jump on my window ledge, hunting for nuts, which they seldom fail to find—now in one corner, now in another—where every day I hide them.

One day, when the window was left open, one of them came in, and finding the basket of nuts on top of the secretary, upset it all over the floor. Such a noise! Such a panic! No one will ever know who beat in that race, for I flew up and the squirrel flew out, and we both agreed to say nothing about it. He has charming manners when he chooses: but, like some other

persons, "when he is bad, he is horrid." If, for example, he catches the thin squirrel hunting for a nut, he just gives him a smart box on the ear and sends him about his business. If I remonstrate, he says that the other one is so small that he does not need much food, and that nuts, in particular, are apt to disagree with him and make him sick in the night. After that, of course, there is nothing more to be said. When I am in the room the squirrel never touches the nut-basket, but sits up and begs, curling his great tail over his head and pressing his small paws on his little white stomach, as much as to say:

"See, how much I love you!" or, "See, how hungry I am!" (For squirrel language is as easy to understand as any other, when once you have learned it.)

But, alas! and alas! there came a sad day when my squirrel and I had a quarrel. And thus it came about. There is no squirrel large enough to hold, inside of him, all the nuts he will take, even allowing for the worst kind of indigestion; accordingly, being of a thrifty turn, he buries the nuts, one at a time—each, I think, in a hole of its own, covering it neatly so that no one would dream of there being anything hidden.

On the day of which I am speaking, my squirrel, being full to bursting, buried nut after nut, taking each one delicately from my hand, balancing himself the while, with his sharp claws curled around my fingers. At last, taking a nut (and rolling it over and over in his mouth, after the manner of squirrels), instead of running down the willow-tree, he went to the end of the window-ledge and laid the nut down in the grooves made for the window. There he scratched and clawed, and burrowed and patted until he had settled that nut; then, turned again and begged for more. I gave him another, which he carried down the tree as usual. In a moment I saw him on his way back, and, without thinking, I picked up the nut that he had with such industry buried in the groove. He sat upon his hind legs, curled his tail at ease, clasped my fingers in his claws and opened his mouth for the nut. Suddenly, he stopped—reared himself to his full height, threw back his head and looked me square in the face.

"Do you mean to tell me," he began, then sniffed at the nut.

"Impossible!" I heard him exclaim under his breath.

He dropped down and walked straight to the spot where he had buried his nut. He sniffed, he snuffed, he scratched, he clawed, he burrowed. The nut was gone! He came back to me, raised himself once again by my fingers and, to cover all possibility of mistake, took one long, last smell.

"How did you *dare* to touch that nut?" he asked: "It was not *your* nut."

With that he left me and—the nut; and I heard him say, as he crept thoughtfully down the tree:

"Schopenhauer was right, after all, when he said that 'Women do not understand the first principles of honor and justice. . . . Nothing should be left to their control: neither children, nor houses, nor lands, nor money,' nor, above all things—*Nuts!*"

Cambridge, Mass., U.S., Nov. 1, 1904.

ADDENDUM.

One of the charming features of Cambridge, Mass., where the writer of the above interesting note lives, is the number and tameness of the beautiful Gray Squirrels, which being protected and fed by kind lovers of nature, run everywhere through the large gardens and lawns, and may frequently be seen and approached, within a few feet, even on the roads and sidewalks. This shows how quickly wild animals will make friends and live with men, as soon as the latter will restrain their savage instincts of wanting to kill everything smaller than themselves or that they are not afraid of, or when they are compelled by law to act as if they were civilized Christian beings. The time is now coming near when we may hope to see our streets brightened with flocks of beautiful Pine Grosbeaks. It would be well for all members of our Club to make a point, whenever opportunity occurs, of trying to put a stop to the senseless destruction of these by thoughtless boys, who, owing to the confiding nature of these gentle birds, can catch them without trouble when feeding on the scanty food provided by the mountain ashes along our streets.

J. F.

CORRESPONDENCE.

METLAKATLAH, B.C., Nov. 5th, 1904.

The Editor OTTAWA NATURALIST.

DEAR SIR,—Enclosed I send you an extract from a letter from Mr. Rathbun, Assistant Secretary of the Smithsonian Institution, in charge of the U. S. National Museum, giving the name of some small fish sent from this locality. It occurs to me that the identifications contained therein may be of interest to some of the readers of the OTTAWA NATURALIST.

Yours truly,

(Signed) J. H. KEEN.

“The specimens which you transmitted to the National Museum, have been received and examined by one of our ichthyologists, who informs me that they are sticklebacks representing the species *Gasterosteus williamsoni microcephalus*. This species was described by Dr. Charles Girard in the Proceedings of the Academy of Natural Sciences, Philadelphia in 1854. The specimens which Dr. Girard studied were obtained in Four Creek, a tributary of Tule (Tulare) Lake, San Joaquin Valley, California, by Dr. A. L. Heermann, a naturalist who accompanied the surveying party of the Pacific Railroad route. The range of this particular species of stickleback is along the west coast of America from Lower California to Alaska. It is found in lakes and streams and is generally abundant.

“Sticklebacks of various species are found throughout the northern hemisphere. They are noted for their pugnacity and are interesting for their nest-building habits, a full account of which will be found in Standard Natural History, Volume III, published by S. E. Cassino Company, of Boston, Massachusetts, in 1885.

“With the fishes were found some leeches which have been identified by Dr. J. Percy Moore, of the University of Pennsylvania, Philadelphia, as representing the species *Hæmopsis lateralis* (Say).”

THE OTTAWA FIELD-NATURALISTS' CLUB.

PROGRAMME OF WINTER SOIRÉES, 1904-5.

1904.

Dec. 16.—Address, by Principal J. F. White, of the Normal School.

The President's Address.

Animal Life in the Hudson Bay region. Andrew Halkett.

The Soirée Committee considered it advisable to substitute for the formal lectures of the past a number of short popular talks each evening on the various branches of the Club's work, and the gentlemen named below have consented to speak on the subjects specified. More detailed particulars will be given through the public press before each meeting. On Zoology descriptions will be given of the life history, habits, etc., of the polar bear, fur seal, whales, star-fish, frogs, sea-urchins and other animals. The characteristic features of the Geology of the Ottawa district will be dealt with and special attention will be given to structural features as well as the history of the abundant fauna found in the rocks and clays. Ornithology, Entomology and Botany will be treated in a similar manner, each speaker giving the results of his personal observations.

1905.

Jan. 17.—*Mammals.* Messrs. Prince, Low, J. M. Macoun and Ballantyne.Jan. 31.—*Geology.* Messrs. Ells, Ami, Chalmers, Dowling and Keele.

Report of the Geological Branch.

Feb. 14.—*Entomology.* Messrs. Fletcher, Harrington, Gibson and Young.

Report of the Entomological Branch.

Feb. 28.—*Zoology.* Messrs. Prince, John Macoun, Halkett and Odell.

Report of the Zoological Branch.

Mar. 14.—*Ornithology.* Messrs. Kingston, E. F. G. White, Eifrig and W. T. Macoun.

Report of the Ornithological Branch.

Mar. 21.—**Annual Meeting.***Ferns of the Ottawa District.* T. E. Clarke.April 11.—*Botany.* Messrs. Sinclair, John Macoun, Fletcher, Campbell and Attwood.

Report of the Botanical Branch.

All the meetings will be held in the Normal School, at 8 o'clock p.m., sharp.

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