

JULY, 1902.

VOL. XVI, No. 4.

THE OTTAWA NATURALIST.

Published by the Ottawa Field-Naturalists' Club.

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(ISSUED JULY 5, 1902.)

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THE OTTAWA NATURALIST.

VOL. XVI.

OTTAWA, JULY, 1902.

No. 4.

NOTES ON SOME FRESH-WATER AND LAND SHELLS FROM KEEWATIN, NORTHERN ONTARIO AND BRITISH COLUMBIA.

BY J. F. WHITEAVES.

The Museum of the Geological Survey of Canada has recently received several fresh-water shells, collected in the summer season of 1901, from the Ekwan (Equan) River, and Sutton (Trout) Lake, Keewatin, by Mr. D. B. Dowling; from the Ontario side of Lake Abitibi by Mr. W. J. Wilson; and from Chilliwack and Sumas lakes, in the New Westminster district of British Columbia, by Mr. J. M. Macoun; also a few land shells from the valley of the Chilliwack River, B.C., collected by Mr. Macoun in 1901.

The following lists of the species represented in these collections are submitted as a contribution to our knowledge of the geographical distribution of the inland mollusca of Canada.

A. - FRESH-WATER SHELLS.

From the Ekwan River, Keewatin.

- Anodonta Kenicotti*, Lea. Varieties. Eight specimens.
Anodonta marginata, Say (= *A. fragilis*, Lam.). One specimen.
Lampsilis luteola, var. *ochracea*, DeKay. Three specimens.

From Sutton Lake, Keewatin.

- Valvata tricarinata*, Say. One dead and bleached specimen.
Valvata sincera, Say. " " "
Planorbis parvus, Say. " " "
Limnæa stagnalis, L. Two badly broken but fresh-looking specimens.
Limnæa palustris, Muller. Two specimens.

Limnæa catascopium, Say. Small, thick-shelled variety ; several.

From the Ontario side of Lake Abitibi.

Anodonta grandis, var. *Footiana*, Lea. A full sized left valve.

Lampsilis luteola (Lamarck). One perfect and adult specimen

Sphærium striatinum. (Lamarck). Four specimens.

From Chilliwack Lake, B.C.

Anodonta Nuttalliana, Lea. Several perfect and "living" specimens.

From Sumas Lake, B.C.

Anodonta Oregonensis, Lea. Several.

Anodonta Wahlamatensis, Lea. Several.

Planorbis trivolvis, Say. Several.

Limnæa palustris, Muller. Several.

Physa, species uncertain. Several, but mostly immature.

B.—LAND SHELLS.

From the valley of the Chilliwack River.

Epiphragmophora fidelis (Gray). Four adult living specimens.

Polygyra (Arionta) Townsendiana (Lea). Typical form ; one specimen.

Polygyra (Stenotrema) germana (Gould). One specimen.

Circinaria sportella (Gould). Four specimens.

Most of the species of Unionidæ in the foregoing lists were kindly determined by Mr. C. T. Simpson, of the U. S. National Museum, who has charge of the types of Unionidæ described by the late Dr. Isaac Lea, and now preserved in that institution.

In regard to two of the species of *Anodonta* enumerated in these lists, the following remarks may be made.

Anodonta Kennicotti, Lea. In Mr. Simpson's "Synopsis of the Naiades", published by the Smithsonian Institute in 1901, *A. Simpsoniana*, Lea, and *A. Dallasiana*, Lea, are included among the synonyms of *A. Kennicotti*. The types of *A. Kennicotti* are from Great Slave Lake, at Fort Erie, and the north end of Lake Winnipeg ; the type of *A. Simpsoniana* is from Fort Rae, Great Slave Lake, and that of *A. Dallasiana* from Lake Winnipeg, at the mouth of the Saskatchewan. The types of all three were

collected by the late Major Kennicott. Under the name *A. Simpsoniana*, *A. Kennicotti* has been recorded by the writer as occurring on the Ontario shores of lakes Erie and Superior, in lakes Nipigon, Winnipeg and Manitoba, and in the district of Saskatchewan. Mr. Simpson gives the geographical range of *A. Kennicotti* as "upper and middle St. Lawrence River system; north-west into the Mackenzie drainage", so that its occurrence so far to the north-eastward as the Ekwan River is of considerable interest.

Anodonta Wahlamatensis, Lea. In the Revista do Museu Paulista, vol. I, p. 220, San Paulo (Brazil) 1895, Dr. H. von Ihering says that *A. Wahlamatensis*, Lea, and *A. Californiensis*, Lea, are synonyms of *A. Nuttalliana*, Lea, but that *A. Oregonensis*, Lea, and *A. angulata*, Lea, are different species.

Ottawa, May 30th, 1902.

THE PARULA WARBLER.

By ROBERT ELLIOTT, Bryanston, Ont.

(Read before the Ornithological Section of the Entomological Society of Ontario.)

The commonest birds are not always the best known. Ask an ornithologist to describe off hand an American Crow and the chances are that, however used he is to seeing the bird in his walks afield, he has waived the minute points which differentiate this bird from closely allied forms not found here. Now had we a second species of more pointed wing, or of slenderer build, or possessing some slight whitish lines on the neck, how critically would he watch our common crow to distinguish it from its relative! He would in time know two kinds better than he now knows one.

Mr. Joseph Beck and I, usually working together, have taken in this locality, nine specimens of Lincoln Sparrow. As an almost necessary result, we have become much better acquainted with the Song Sparrow than we were before we became familiar with its congener.

For several years after I began the study of birds, while my rarer specimens were all preserved, I had no collection of my own. That sylvan gem—the Parula—has passed several times through

my hands. How convenient to say—"That is a Parula Warbler!" For two or three years after I began preserving specimens, I did not meet with a single example of this bird.

My interest in the species became quickened when I read in *The Auk*, vol. xiii, page 44, Mr. William Brewster's description of a new sub-species to be known as the Northern Parula. To obtain a Parula Warbler would no longer suffice.

From the given range, I surmised ours should be the northern form, but I wished to verify the theory. Since then I have taken one specimen only—an adult ♂ shot in a thick thorn tree in the Thames valley, 16th May, 1899. On my request for the loan of specimens, Mr. W. E. Saunders kindly placed three adult ♂♂ at my disposal.

While the series is much too small to expect very definite conclusions, I offer the following notes on the classification of these four birds.

To briefly summarize Mr. Brewster's comparative diagnosis—the Northern Parula, *Compsothlypis americana usneæ* may be distinguished from typical *C. americana* by the following points: Slightly larger, with shorter bill. Adult ♂ with less yellow on under parts, more black on lores, collar across jugulum broad and black, chest spotted with rich brownish chestnut.

On being compared with my specimen, two of Mr. Saunders's birds are seen to belong to the northern form. His third specimen so closely approaches mine and differs so much from the first two as to afford a rather striking contrast to them. The only feature in which my specimen differs from *C. americana*, is in the extent of the black on lores and malar region. This is more pronounced in mine than in any of the others; in typical *americana* it is less. A row of minute white feathers bordering the yellow on throat may be ascribed to albinism. In all other respects—viz: smaller size, larger and longer bill, amount of yellow, narrowness of collar and diffusion of the chestnut with the yellow of chest—mine agrees completely with the published description of *americana*.

Mr. Saunders's third specimen has unfortunately lost the tip of the bill, but, judging from its size at base, it was apparently larger than in the other two. Mr. Brewster moreover expressly

states that not one of the features he has used in separating the two forms is quite constant. Bearing this in mind, I have little hesitation in arranging the series as follows.

1. *C. americana usneæ*, ad. ♂. Coll. W. E. S. London, May 1881.
2. *C. americana usneæ*, ad. ♂. Coll. W. E. S., Komoka, 24th May, 1888.
3. *C. americana usneæ*, ad. ♂. Coll. W. E. S., Komoka, 6th May, 1893.
4. *C. americana usneæ*, ad. ♂. R. E., Plover Mills, 16th May, 1899.

The first two being typical of the new Northern Parula, the last two being not quite typical of the original species now known as the Southern Parula.

The breeding range of the Northern Parula is given as "New England, New York and westward along the northern tier of States, northward to the Maritime Provinces and Canada." That of the Southern Parula, "The South Atlantic and Gulf States east of Texas, northward near the Atlantic Coast to the District of Columbia and in the interior to Mt. Carmel, Ill."

With respect to the last named, Mr. Brewster had examined no summer birds from immediately north of Washington or Illinois, and, while doubtless the vast majority of the Parulas of Ontario will prove to belong to the northern sub-species, yet the extreme southern edge of the Province being in the same faunal zone as Illinois, the Southern Parula may prove to be a not rare summer visitor to the counties bordering on Lake Erie.

I would urge on the members of our Ornithological Section the desirability of collecting more specimens, especially of adult males taken in spring. It is needless to add that accurate measurements made in the flesh are of great value to any one attempting the classification of such closely related forms.

OOLOGY.

ADDITIONS TO THE GEOLOGICAL SURVEY'S COLLECTION OF EGGS, IN
JUNE, 1902.

The following sets of eggs of Canadian birds have been received from Mr. R. W. Tufts, of Wolfville, Nova Scotia, who collected the whole of them and who has kindly furnished the information in regard to them.

"GOLDEN-CROWNED KINGLET (*Regulus satrapa*).

"Set I, of nine eggs, collected at Wolfville, May 12, 1902. Bird seen, incubation fresh. Nest hanging from thick spruce limb, near the end, about fifteen feet from the ground, composed of green moss outwardly woven with "beard moss" (*Usnea*) and lichens, and lined with long hair and feathers. Entrance at top.

"Set II, also of nine eggs, collected at Greenwich, King's Co., N.S., May 13, 1902. Bird seen, incubation fresh. Nest in spruce tree, hanging from end of limb about fifteen feet up, composed outwardly of green moss and beard moss, lined with hair and robins' feathers. It was found about half completed April 2, and the eggs were taken May 13. This shows how long it takes these little birds to build their nests.

"RED-BREASTED NUTHATCH (*Sitta Canadensis*).

"One set, of seven eggs, collected at Wolfville, May 8, 1902. The bird was seen, and the incubation one-fourth advanced. Nest in a dead stump about twenty feet up, composed of fibres of decayed wood, mixed with grass and a few feathers. Entrance smeared with fir balsam.

"RUSTY BLACKBIRD (*Scolecophagus Carolinus*).

"One set, of five eggs, collected at Davison's Lake, Hants Co., April 29, 1902. Birds seen, incubation fresh. Nest in a small spruce tree about six feet from the ground, composed of twigs and lined with fine dead grass and rootlets. No mud used."

J. F. WHITEAVES.

Ottawa, June 12, 1902.

CANADIAN HUMMINGBIRDS.

BY W. E. SAUNDERS.

(Read before the Ornithological Section of the Entomological Society of Ontario.)

Hummingbirds belong to the order Macrochires, which includes, so far as Canada is concerned, only the Goatsuckers, Swifts and Hummers. Of these families the first two are separated from the third by the presence of more than 6 secondaries, a short broad bill with deeply cleft gape, and the absence of metallic-coloured plumage. The principal characters of the Hummingbird family are:—secondaries 6, a slender, often attenuated bill, gape not deeply cleft, colours of the plumage more or less metallic.

The family embraces many genera and about 400 species, entirely confined to America, and most of this large number are residents of the South only.

Among the many species in the tropics there are, as one might suppose, many curious forms. Some of them have very long tail feathers, while one at least has the bill longer than all the remainder of the body, a character not known elsewhere among birds. The colours exhibit all of the most brilliant tints, and often the most striking contrasts: one bird, mostly metallic green, having pure white tail feathers and coverts. The tongue is protrusive, as is that of the Woodpeckers, and is composed of two tubes for obtaining honey from the nectaries at the base of a flower.

The breast bone is very large, with an enormous keel to accommodate the immensely developed muscles which are required to move the wings at the great speed usual with these birds. The reason for this extremely quick wingbeat is that the upper arm bone is very short, and it is a fact that birds which have this bone very short must use quick wingbeats, while a long one produces a slower beat or a sailing flight. Thus the Grouse and Quail have a short upper arm, and the Gulls and Buzzards a long one.

All the Hummers ranging into Canada were formerly included in the genus *Trochilus*, but in more recent years the species therein contained have been mostly placed in other genera, whose

characters, however, are not structural but appear to relate entirely to the colours of the birds.

While there are about 400 species known to science, only 18 are found in North America. Five of these come as far north as Canada, four of which are confined to the neighbourhood of the Pacific coast. These are the Allen's, Rufous, Black-chinned and Calliope; the two latter far exceeding the others in numbers.

It is characteristic of the whole family that they build beautiful nests, diminutive certainly, but put together with the greatest skill and unsurpassed neatness. Usually they consist of white cotton from willows and other trees, but in the case of one, the Black-chinned Hummer, the buff-coloured cotton of the sycamore is often used exclusively, producing a nest of the colour of a sponge. Those built of white cotton are always covered, one eastern species using lichens, but those in the West appear to use anything that is convenient, mosses, strips of bark, fragments of weed stems and a few lichens being generally found.

The most common Hummer in California is the Annas, which does not wander into Canada, but its abundance in the South makes it worthy of a few remarks here.

It has iridescent red feathers on the throat, a feature so common with the males in this family, and has a similar patch over the head, giving it a most gorgeous appearance. Moreover the male has what Mr. Charles A. Allen calls "a very nice little song," which he delivers from some twig or perhaps a telegraph wire.

This species often builds on the nest of the previous year, a habit which seems more or less common throughout the family. The earliest record of a Hummer's nest in the United States belongs to this bird, a nest having been found on January 20th by Mr. Emerson at Hayward, Cal.

Turning, however, to Canadian species, we notice first Allen's Hummer, a small chestnut-bodied bird with greenish back. This is a bird of wide distribution, but not so much so as is the Rufous Hummer, which it resembles closely, except that the back of the latter is reddish-chestnut. Allen's Hummer is found in the southwestern parts of British Columbia only, which constitute the northern portion of its range. Mr. Allen, after whom it was

named, has found its nest at altitudes ranging from 10 to 90 feet from the ground, and says that its courage is unsurpassed. Once he saw a pair of these birds attack and drive away from the neighbourhood a western Red-tailed Hawk.

The Black-chinned Hummer has a very extensive range, from the Pacific Ocean eastward as far as the Alberta foot hills, and from Northern Mexico in the South at least as far as Banff in the Canadian Rockies. It is one of the smallest birds of the tribe, and has several peculiarities more or less uncommon.

With regard to the eggs, which do not materially differ from those of the other species, a number of sets of three have been taken, and once a set of two was found in a House Finch's nest in New Mexico, without any apparent addition or alteration whatever. The throat of this species has the lower part dull iridescent purple, and the upper part dull black, a peculiarity seldom seen among these gaudy little birds.

The Rufous Hummer has the widest range of any, breeding over a distance of at least 2,500 miles north and south, and ranging from Mt. St. Elias, Alaska, in latitude 61, down to the table lands of Mexico.

Its nest is usually of cotton covered with mosses, shreds of bark and occasionally a few lichens. One nest contained three eggs, and Capt. Bendire mentions that this is the only instance he knows of, except those of the Black-chinned Hummer. One nest found by Mr. A. W. Anthony at Beaverton, Oregon, had been built on top of last year's nest, the lining having been thickened to cover a pebble which had lodged therein and the sides raised, but no apparent alteration had been made otherwise.

The Calliope is the smallest and, to my mind, the most beautiful of all Canadian Hummers. The throat, instead of being covered with a solid block of iridescent colour, has elongated feathers of ruby-purple in narrow streaks on the upper part, then forming a band across the middle, and extending nearly half an inch farther down on each side. The effect of this colouring is unique and beautiful.

This appears to be a mountain loving species, which does not penetrate far above our southern border, though, if mountains were the longed-for home, British Columbia ought surely to be able to attract them in vast numbers; yet it appears to go only some 3 or 4 degrees north of the 49th parallel. At Fort Klamath, Oregon, Capt. Bendire found it in enormous abundance in the vernal migrations and is sure that there must have been 1000 birds to the acre on one occasion. These were about three-fourths Calliope and one-fourth Rufous Hummers. It is reported to breed at from 4000 to 8000 feet elevation in the pines on the edges of the mountain meadows and parks. It places the nest on a twig of *Pinus contorta* (*Murrayana*) 8 to 15 feet from the ground, usually on or beside a bunch of cones, and the nest itself so closely simulates the appearance of a cone that it would readily be taken for one of the bunch.

A nest found in Nevada was built on a knot of rope which was hanging from an outhouse, and by covering the outside with bits of bark, pieces of wood and flakes of whitewash the nest was made to look like the knot on the rope and did not resemble a pine cone at all.

I have a specimen shot by my brother, Mr. F. A. Saunders, late in July of 1892 at Agassiz, B.C., which is a hint that in the northern part of its range it nests at a lower elevation than in the southern.

With all these species living in British Columbia, it seems strange that only one ever visits the eastern part of the continent. That one, however, has a breeding range exceeded by but few birds, extending from Florida to Labrador, and in the interior as far north as Lat. 57, more than 550 miles north of the 49th parallel, giving to its range a total of over 1000 miles of latitude in Canada alone.

This species is the Ruby-throated Hummingbird, a well known favorite throughout Ontario, where it visits every flower garden to suck the sweets and catch the small insects living in the flowers. With us it is not very common, for, though a good garden may attract Hummers a dozen times in an afternoon, yet these will probably consist of but 3 or 4 individuals, and, when one

walks in the country, he will usually see not more than 1 or 2 in a morning and often none. Under these conditions, nests are seldom found, and in all the years I have studied birds I have found but 3, one of which was never completed. This first was found near Ottawa on July 7th, 1890, and was seen under exceptionally favorable circumstances. My brother and I spent quite a long time watching the tiny builder. The nest had not yet begun to show cupping, and she was very busy; her absences were short and her visits frequent; 20 or 30 seconds was often sufficient for her to get a load, and she took only from 10 to 30 seconds, usually 20, to finish working it in. The universal testimony seems to be that, while the female is useful, the male is merely ornamental, and takes no part whatever in the work; that was certainly the fact in this instance. When we took this nest, we wound cotton carefully around it and then cut off the limb, and thus succeeded in safely collecting the whole. The only other nest I have taken was at Port Stanley, on June 2nd, 1893. It was placed on a dead twig of a wild cherry tree and was certainly difficult to secure, but by following the same tactics as before, winding it with cotton and sawing off the limb, I secured it safely.

These little birds have very dainty habits, and one can spend no hours more pleasantly than in watching them. I was once favoured by being allowed to view the morning toilet of a Hummer in my garden. There had been a heavy dew, and the little fellow bathed in the moisture-laden leaves of the grape and raspberry, fluttering his wings and shaking his body and feathers, just as larger birds do in larger vessels. It seemed like a burlesque, and one could hardly help the idea that this little mite "thought he was a bird."

On another occasion I saw one drink the juice of a cherry that the robins had broken.

While one notices these tiny creatures only while they are on the wing, he will discover by watching them that their rests are frequent and long, but their wee, faint "chirp" is seldom uttered except while on the wing. During the longer rests, generally made on a dead or bare twig, or a wire, the bird will often plume itself for many minutes at a time and shows in many ways its neatness and cleanliness.

I once saw two males go through a curious performance. They were feeding at a trumpet creeper growing on a fence, one on each side, and, when they rose to where they could see each other, they flew together and, without touching, rose perpendicularly about 12 feet, facing each other all the time, then separating came down; but, if they were in mutual view when they reached their feeding flower, up they went again, and sometimes for three or four flights in succession. This performance was repeated several times, but without apparent object. I guessed that it was a game of bluff on each side, but the other fellow wouldn't be scared.

Dr. Bendire quotes from Mr. Otto Widmann, of Old Orchard, Missouri, relating a still more curious play. Mr. Widmann says:

"A peculiarity of the Ruby-throat which I have only once seen mentioned in print, is the pendulum play of the male Hummer. In time, it coincides with the period of sexual excitement; it begins here about May 12th, with the arrival of the bulk of the females, and lasts until incubation has commenced. In this play the bird is swinging to and fro, as if suspended from a fixed point. It describes one-fourth of a circle and travels about a rod. This movement is continued a dozen times, the bird emitting chirps all the time."

With Dr. Fletcher I witnessed this action on the Ottawa Experimental Farm in May, 1901, when we saw the bird pass through an arc of about 12 yards, and looked for the female nearby, but without success.

In the *Ornithologist and Oologist* for May, 1882, Mrs. C. M. Crowell, Haywards, Cal., describes the habits of a pair which she raised from the nest by feeding on syrup only, though she says they would frequently pursue and capture a house fly and doubtless they ate a small number of other insects; they lived for nearly four months.

The feeding habits of the young birds are peculiar, resembling to a certain extent those of the pigeons, the bill of the old bird being inserted deep into the throat of the young. But, while this would lead us to infer that the young are fed with a semi-digested food, we have the testimony of one observer that he took a number of small spiders from the throat of a young bird whose contents he investigated.

The earliest date on which the spring arrival of the Ruby-throat at London has been noted, is May 9th, but usually it is a few days later. In the fall the latest was noted on October 2nd, 1890, and the average of seven years is September 23rd.

The more one studies birds, the more certain he becomes that the best way to learn their habits is to be still and keep quiet. Particularly is this true with the Hummers, whom we can scarcely ever follow, even if we tried, while when one is quiet they are likely to feed around, alight, preen themselves and occasionally favour us with an insight into some previously unknown phase of their life.

ORNITHOLOGICAL NOTES.

NOTES ON THE BREEDING OF THE SHORT-EARED OWL (*Asio accipitrinus*) NEAR KINGSTON, ONT.

Until this season I had always considered the Short-eared Owl a migratory species whose visits occurred with singular regularity, for, as each succeeding year came round, I invariably saw a bird of this species rise from one particular part of Catar-aqui marsh. It is now clear to me that, on these occasions, I was very cleverly decoyed to that part of the marsh in which the birds never had a nest.

On visiting the marsh on the 23rd of last May, the actions of the owl clearly indicated the presence of the nest, from which a few minutes later the female rose, or rather tumbled into the long grass. The nest, which was composed of sticks, grass and one or two feathers, was placed out in the open marsh and contained seven eggs far advanced in incubation.

Upon examining the spot from which the male bird rose, I found pellets of hair containing the complete heads of four field mice.

EDWIN BEAUPRÉ.

ANNUAL REPORT OF THE BOTANICAL SECTION OF
THE OTTAWA FIELD-NATURALISTS' CLUB.

(Read to the members of the Club Feb. 11th, 1902.)

The Botanical Section reports that, as usual, the Club's excursions were well attended by those interested in Botany. At all of these excursions one or more of the botanical leaders were present and assisted in the determination of the difficult species collected. One of the rarest plants in this vicinity—*Petasites palmata*—was found by Miss Matthews near Britannia, on May 4th, the date of the Club's excursion to that place, and the Hon. F. R. Latchford found the same species near Mountain View about the same time.

Several new species have been added to the local list during the year. These include a number of Violets new to science: *Viola cardaminifolia*, growing near Aylmer, Que., *V. subviscosa*, from the same place, *V. leucopetala*, back of Rideau Hall, and *V. Fletcheri*, from the woods near Creighton Lodge. The first two were discovered by Dr. Fletcher, the last by Mr. J. M. Macoun, and *V. Fletcheri* by Dr. Fletcher and Mr. Macoun when working together. The violets of this vicinity are yet far from being worked out, but, as descriptions of all the new species have been published in THE OTTAWA NATURALIST, even a beginner in botany may determine the common species. Other species added to our flora are *Thalictrum confine*, Fernald, collected by Prof. Macoun near McKay's Lake, *Agrimonia hirsuta* and *Triosteum aurantiacum*.

An unusually large number of botanical papers and notes were published during the year. The most important of these were: "Some New Canadian Gentians" by Dr. Theodor Holm, "New Plants from Alberta" by Dr. Edw. L. Greene, "On the Autumn Flowering of Various Wild Plants in 1900" by Mr. Cephas Guillet, Part xiv. of "Contributions to Canadian Botany" by Mr. J. M. Macoun, "Allies of *Stellaria media*" by Dr. Holm, and descriptions of new Violets and Senecios by Dr. Greene. In addition to these, short notes on local species were published from time to time.

It is proposed to complete the publication of Dr. Fletcher's *Flora Ottawaensis* this spring. The Carices and grasses have now been thoroughly worked up and nothing remains but to get the manuscript ready for the printer. The list will be a very complete one, as both Dr. Fletcher and Prof. Macoun have made a special study of these orders during recent years.

Several members of the Club did good botanical work in remote regions during the year. Mr. Dowling brought home a collection from Equan River and Mr. Wilson from Abitibi River. Dr. Fletcher collected on Mount Che-am and Mount Arrowsmith and in other parts of British Columbia. Mr. J. M. Macoun made a thorough examination of the flora of the Chilliwack Valley, B.C., and has added about fifty species to the Canadian flora, most of them new to science. Prof. Macoun made very large collections in south-western Ontario, and added many species to our flora. Two species new to science have already been described from his collection—a *Helenium* and a *Vernonia*—and there are several still to be described.

In conclusion, the botanical leaders would urge upon the members of the Club the necessity of a careful study of the local flora. The plants of this region are supposed to be well known; but so many of the supposed species have been found to include two or more species that growing specimens of even the commonest of them should be examined and compared with the description. The Rosaceæ, the Umbelliferæ and the Ranunculaceæ are especially worthy of study. The recently published "Manual of the Flora of the United States and Canada" by Dr. N. L. Britton is the only book in which descriptions of all the new eastern American species can be found.

J. M. MACOUN.
CEPHAS GUILLET.
D. A. CAMPBELL.
A. E. ATWOOD.

SOIRÉES.

The sixth soirée was held in the Assembly Room of the Normal School on March 11th, when Mr. W. E. Saunders, of London, Ont., lectured on "Native Birds: their Characteristics and Habits." The lecturer showed about 70 slides, which comprised most of the better known birds of Canada. Many peculiarities of these species were mentioned, and frequently the different families were treated as a group; the modifications of structure and habit which fit them for their place in nature, were also explained. Particular attention was paid to the relation the various tribes and species of birds bear to agriculture, and their influence on this important industry was deduced not only from their own direct efforts but indirectly by their attitude towards other species of birds and animals, both beneficial and injurious. The lecture was illustrated by anecdotes which had come within the speaker's personal experience, and the audience enjoyed especially the imitations of the various bird-songs and call-notes, some of which, particularly the plain clear whistles, were very faithful to nature. Deprecating mention was made of the enormous destruction which had nearly exterminated some species of gull, terns and herons on the Atlantic coast and in Florida, and a short account given of the methods which are now being employed to preserve the remnant and, if possible, to restore them to something of their former abundance.

The last soirée of the season was held in the Assembly Room of the Y.M.C.A. on March 18th, when officers for the ensuing year were elected. A paper entitled "Notes on the Arboretum at the Central Experimental Farm, Ottawa," was read by Mr. W. T. Macoun which is printed in this number of THE NATURALIST.

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