

FEBRUARY, 1910

VOL. XXIII, No. 11

THE OTTAWA NATURALIST

Published by The Ottawa Field-Naturalists' Club.

Editor:

ARTHUR GIBSON,
CENTRAL EXPERIMENTAL FARM,
OTTAWA.

Associate Editors:

DR. H. M. AMI, *Geology.*

DR. J. F. WHITEAVES,
Palæontology.

HON. F. R. LATCHFORD,
Conchology.

PROF. E. E. PRINCE,
Zoology.

REV. G. EIFRIG,
Ornithology.

W. H. HARRINGTON,
Entomology.

W. T. MACOUN, *Botany.*

J. W. GIBSON, M.A.,
Nature Study.

A. McNEILL, *Meteorology.*

CONTENTS:

Everyday Ornithology. By Norman Criddle.	- - - -	197
Meetings of the Botanical Branch.	- - - -	204
Soirees.	- - - -	207
Instinct and Education. Synopsis of address by Mr. A. E. Attwood.	- - - -	209
Fletcher Memorial Fund.	- - - -	211
Notes: <i>Bartonia virginica</i> in Quebec; Bonaparte's Gull.	- - - -	211
A rare Weasel at Ottawa. By W. E. Saunders.	- - - -	212

COPELAND-CHATTERSON-CRAIN LIMITED,

ISSUED FEBRUARY 15 1910

Entered at the Ottawa Post Office as second class matter.

WE DEAL WITH OUR ADVERTISERS

JAMES OGILVY,

Bookseller, Stationer and Publisher
63 Sparks St.

THE BUSY STORE
ON THE BUSY CORNER

JARVIS' "THE BOOKSTORE"
157 Bank St. Phone 732

Any book you see advertised, if we have it not, we will order it for you promptly. We solicit book business.

"Merit" placed **ALLEN & COCHRANE THE RED CROSS DRUGGISTS** at the head in the drug business of Ottawa—on merit they seek your trade. 4 STORES, OTTAWA, CANADA

ASK FOR OUR CELEBRATED
FLOOR AND HOUSE PAINTS

MADE IN OTTAWA

OTTAWA PAINT WORKS

Phone 395 687 Wellington St.

WOODS, Limited

SLEEPING BAGS

OTTAWA AND WINNIPEG,

SILK TENTS

Factory - HULL

Wholesale Manufacturers
Lumbermen's and Contractors' Supplies,
Outfitting Survey Parties,
Exploration and Outing Parties of any kind,
A Specialty

For Quotations
PHONE 3512

Ottawa Sample Room,
Canadian Building, Phone 4463

ROONEY & COOPER
TAILORS
(Ladies and Gentlemen)

Your Patronage
Solicited

67 Sparks Street
Ottawa

A. ROSENTHAL & SONS, LTD.
JEWELLERS AND
OPTICIAN

Goldsmith's Hall Ottawa

THE BANK OF OTTAWA

Capital authorized \$5,000,000
" paid up 3,000,000
Rest 3,000,000

OFFICES IN OTTAWA AND HULL

Head Office, Wellington St.
Bank St. and Gloucester St.
Bank St. and Gladstone Ave.
Bank St. and Fourth Ave.
Lloyd St. and Queen St., West
Rideau St.
Somerset St.
Cartier St.
Main St., Hull.
Bridge St., Hull.

SAVINGS BANK DEPARTMENT
INTEREST AT CURRENT RATES.

THE R. J. DEVLIN CO.
Limited

High Grade Hats Fine Furs

Fur Department
Phone 4828 76 Sparks St.

INSURE IN
Mutual Life of Canada

H. MOONEY & SON
General Agents

111 Sparks Street Ottawa

THE 2 MACS, LIMITED

KODAKS

TOPLEY

KODAKS

GET YOUR FRIENDS TO JOIN THE OTTAWA FIELD-NATURALISTS' CLUB

Library Bureau of Canada

HEAD OFFICE—ISABELLA ST., OTTAWA, ONT.
BRANCHES—Toronto, Montreal and Winnipeg.

Inventors of the Card System,
Vertical Filing and
various Office Devices.

Special Insect Cases
and Natural History
Cabinets made to
order.

BRYSON, GRAHAM & CO.

SELL EVERYTHING

**The United Photographic
Stores, Limited,** 65 Sparks
Street

PHOTO SUPPLIES

Mark G. McElhinney, D.D.S.

109 Metcalfe St.

OTTAWA

Copeland = Chatterson = Crain, Limited

Printers, Bookbinders and Loose Leaf Manufacturers

174-178 Wellington St., Ottawa

When in want of High Grade Furniture
Call and See Our Stock

AGENTS for the Celebrated
CREX PRAIRIE GRASS FURNITURE
And OSTERMOOR MATTRESSES

STEWART & CO.

34 Rideau Street
Just Below the Bridge

THE BUSY STORE
ON THE BUSY CORNER

THE 2 MACS, LIMITED

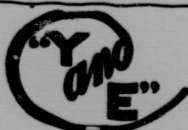
HEADQUARTERS

For all lines of Sporting Goods, Cutlery, House and Builders' Hardware. We are direct importers of all lines carried by us, and the quality of our goods is the highest.

GRAVES BROS.

COR. SPARKS AND METCALFE STS.
PHONE 177

FILING



SYSTEMS

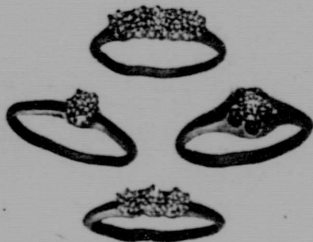
Office Furniture and Equipment in Wood and Steel.

PHONE 935

OFFICE SPECIALTY MFG. CO.

143 SPARKS ST.

ENGAGEMENT RINGS.



\$25 to \$500

IN Diamond Rings, as anything else, too low a price means inferior stones and inferior settings.

OUR prices for every style of Ring are as moderate as is consistent with perfect stones and perfect settings.

BIRKS'

57-59 SPARKS STREET

GRIP LIMITED

ARTISTS—DESIGNERS—ENGRAVERS

48-52 Temperance St., TORONTO

Dominion Express Company Money Orders

FOREIGN AND TRAVELLERS'
DRAFTS AND CHEQUES

Issued in

Dollars, Pounds Sterling, Francs, Marks, Roubles, etc
Payable all over the World.

Money transferred
by Telegraph
and Cable.

OTTAWA CITY OFFICE
Corner
SPARKS AND ELGIN STS.

Foreign Money
Bought and Sold.

THOUSANDS OF AGENCIES THROUGHOUT CANADA

THE OTTAWA NATURALIST

VOL. XXIII. OTTAWA, FEBRUARY, 1910 No. 11

EVERYDAY ORNITHOLOGY.

BY NORMAN CRIDDLE, TREESBANK, MAN.

The following notes are made up simply of observations recorded in my note book at Aweme, Man., supplemented with additional remarks to make the whole appear less disjointed and more complete in detail. They are mere extracts from a mass of material covering a period of four years, commencing in 1906. They are given in the original form, not only because that saves labor, but chiefly because it gives them the appearance of having been made in the field, which is indeed the case.

1906.

JANUARY 10.—It seems remarkable that partridges (Ruffed Grouse) should have a preference for certain clumps of trees upon which they make their evening meal by eating the buds, but such is the case. Not only do they return to the same locality week after week throughout the winter months, but the same clumps seem to be selected year after year.

About one hundred yards from the farm buildings there is a bluff which contains a few hundred trees, all aspens of medium size, with smaller ones and hazel brush beneath. The larger trees are those selected, and every evening shortly after sunset five or six partridges appear, sometimes flying from a considerable distance. About the same number turned up last year, and also the previous winter. That they are gradually stripping the trees of their buds and consequently preventing the growth of leaves there is no doubt, but fortunately they confine themselves largely to those buds that in the course of time would produce catkins, so that the injury is not as great as might be suspected, though it is very evident when the leaves appear. During the day these birds content themselves with eating hazel catkins, rose-berries and such other fruits as appear above the snow. Consequently aspens and other poplars only suffer once in 24 hours.

FEBRUARY 19.—About a week ago we found a Redpoll unable to fly though in apparently excellent condition. It was taken into the house and ate well for two days, at the end of which period it died. I found another to-day that went off in the same way. Both of these were in dull plumage.

MARCH 4.—Another Redpoll was discovered dead this morning, a male, in perfect plumage. This had been observed to be weakening for some days past, though like the others it fed to within a short time of its death. An examination showed it to be rather thin, but the cause of death appeared to have been due to a large clot of blood on the back portion of its skull. These birds all died slowly, and when found were in a sitting position, as if they had gone to sleep and so died.

Redpolls have been very plentiful throughout the winter, and as the snow was deep were attracted in large numbers to seeds placed for their use, and consisting chiefly of lambs-quarters, with a small quantity of wild buckwheat mixed in. Is it this abundance of food without the customary exercise in procuring it that has been responsible for this mortality by a form of apoplexy?

MARCH 17.—Watched a full plumaged Redpoll courting a female. She sat quietly on a bough some 20 feet from the ground while he displaying his bright colours to full advantage remained almost stationary before her by means of a rapid movement of his wings. While thus occupied he indulged in incessant song of a decidedly more variable nature than is usually heard at this time of the year. After continuing this arduous love-making for some twenty seconds he flew to a neighbouring tree where he was quickly joined by his lady love, and eventually they flew off in company apparently mutually satisfied.

These birds are supposed to leave us in summer time to breed farther north, and according to Macoun's Catalogue their nests have been found in some numbers both in Labrador and Hudson's Bay during May and June. Now, as they seldom all leave us before the middle of May, and as both males and females were observed in the hills among spruce woods on June 11th, 1909, there seems to be reasonable grounds for suspecting them of breeding in the province.

MAY 10.—On a newly ploughed field that had not been under cultivation for two years, White Grubs (*Lachnosterna* sp.) were very plentiful, but everyone exposed by the plough was eagerly picked up by crows, a large number of which were breeding close at hand. A rough estimate places the number of larvæ eaten at fully 2,000 to the acre, but the full number consumed probably far exceeds that amount.

MAY 11.—Among the male birds that habitually feed the females while they are nesting, Crows and Chickadees are notable examples. The former does so throughout the brooding period, and it is a strange fact that the hen bird reverts to that method of calling for food so characteristic of the young, with the same excitement and fluttering of wings when food is brought within view. The Chickadee goes still further and feeds his mate with nice juicy caterpillars weeks before she commences to lay. He, also, like the Crow, takes an active share in nest building. Blue Jays likewise become very polite to the females by procuring food before and when she is brooding. They make an extremely affectionate couple at this time of year and can constantly be heard talking softly together. I believe there are few, if any, Canadian birds that have such a complete code of signals.

MAY 30.—The Redbacked Cutworm is doing an immense amount of damage to growing grain, and our friends the Crows are once more at work for their own benefit and incidentally ours. From 18 to 32 were counted together at different times to-day on an infested field, and close inspection shows where they have dug the Cutworms out, while watching detects many a beak full being taken to the nests.

Crows have by no means a good reputation, especially in corn belts, or among sportsmen, who accuse them of much damage to winged game through eating eggs and young, but the injury is much exaggerated. We are apt to overlook the good deeds, as the picking up of small objects, such as noxious insects; whereas, to see a Crow fly off with a young bird is much more likely to attract attention, especially if the parents are attempting some sort of defence. As to the destruction of eggs of Grouse by Crows, these birds are so admirably suited in colour for concealment that it is only on very rare occasions, provided the birds are not otherwise disturbed, that their nests are discovered.

JULY 14.—Found the nest of an Ovenbird in woods near some large aspens. It was of a dome shape, rather elliptical in outline, and so remarkably well constructed, outside with dead leaves and grass, that it would almost surely have passed for a slight rise in the ground had I not flushed the bird. Inside the nest were four young, surrounded by a lining of fine grass and horsehair.

JULY 15.—Several Crows have been found dead recently, apparently in good condition. They seem to have died suddenly, sometimes while flying, but I could discover no cause for this. If the death role has been as high in other parts, many thousands must have perished.

JULY 27.—Three more Crows found dead, two full grown

young and an adult. A young bird fully fledged was also discovered in a weak condition, though nothing could be found to account for its sluggishness.

1907.

FEBRUARY 6.—A small band of Chickadees have been with us since the winter commenced, feeding upon pieces of suet placed for their convenience. Recently this has become scarce and the Chickadees are now subsisting to quite a large extent on waste oats. These they carry to the sunny side of a log building and holding the oat with one foot extract the kernel from the husk with their beak. This is quite a new departure for Chickadees.

APRIL 28.—Found two Western-horned Owls in possession of a nest built by a pair of Goshawks last year. There were two or three young of different ages in the nest and an old bird made several queer noises at me, one of which resembled the barking of a dog. There was a recently killed field mouse at the bottom of the tree.

MAY 26.—Examined around the Owl's nest mentioned above and found several pellets, which were made up chiefly of the hair of mice and rabbits, with the broken bones of those mammals and one bird bone.

JULY 26.—There are two Ravens a few miles northwest of here which have discovered a young calf and dog recently deceased. This is the first occasion that Ravens have been observed at Aweme in summer time and might lead one to suspect them of breeding in the neighbourhood.

AUGUST 11.—Visited the nest of a Vesper Sparrow to see what effect the heavy rain had had upon the young. Found one stretched out very much overcome, but later in the morning both were perfectly well. They are almost fully fledged.

NOVEMBER 16.—I have for the last week been cutting down trees close to a Chickadee's sleeping place, a hole some 18 feet from the ground in an old tree, evidently the work of a Woodpecker. The Chickadee appears regularly and enters its home at about ten minutes after sunset, there being a slight variation, according to the brightness of the evening. At first the stump was surrounded by trees, but though these have now all been cut away and the only branch upon which the bird perched before entering its nest broken, it entered its hole as usual after showing but momentary surprise at the change. This Chickadee is often accompanied by others, but they have separate homes and soon vanish to meet together again next morning.

1908.

MARCH 10.—Two White-throated Sparrows have managed to survive the winter and are now quite active. The only shelter they had was a wood pile at night and round about the farm yard during the day. They suffered but little, excepting during the most severe weather, showing that it is more a question of food than cold that is responsible for the southward migration. Doves, Blackbirds, Juncos and Robins have also been known to come through the winter when provided with sufficient food.

NOVEMBER 6.—There are an exceptional number of Canada Jays about this autumn, and farmers south of here, who have been killing cattle for beef, say that these birds at once attack the carcasses, damaging them for the market. They are also at times a perfect nuisance to trappers by stealing the bait from traps. Meat, skins, bread, potato peelings, grain and indeed anything else that can be eaten, is carried off. In fact, when these birds once discover something palatable, it is practically impossible to make them leave the vicinity.

1909.

JANUARY 12.—During an exceptionally cold spell, a Northern Shrike has made its headquarters here, and subsists very largely upon House Sparrows rendered sluggish by the cold. At least a dozen of these birds have been taken, and also some Chickadees, that habitually come up to partake of suet. The Shrike seems to withstand the cold easily and has been seen to carry off Sparrows without much difficulty.

JANUARY 24.—The little group of birds that come up daily to eat of the fat, now consists of Northern Hairy Woodpeckers, Blue and Canada Jays and Chickadees. The Canada Jays have also been seen to eat a few asparagus berries, but not with particular relish.

FEBRUARY 9.—Discovered a Goshawk with a Ruffed Grouse which he had just captured and eaten a small hole in its side. The unfortunate bird was still living, though mortally wounded, and seemed to have lost much blood. From the fact that there was no sign of this on the snow, I am strongly of the opinion that the hawk drank it from the hole in the partridge's side. As there was no hope for its recovery I ended its further suffering. This Goshawk has been about for some weeks past and during that time has caused the death of numerous grouse and some rabbits.

These hawks are undoubtedly the most destructive to grouse of all the hawks found in Manitoba. They are not only more numerous than other injurious species, but they seem to have a decided preference for feathered game. On the other

hand it should not be forgotten that they compensate to some extent, at least, by destroying bush rabbits, and therefore, while the sportsman would assuredly look upon them as an enemy, the fruit grower, and those having an interest in forestry, might well class them equally as a useful ally.

FEBRUARY 12.—There was a Richardson's Owl in the straw shed this morning. Later in the day we tried to feed it with raw meat, but our efforts were unavailable, though it allowed a very close approach, and in fact sat among the meat.

FEBRUARY 19.—Several Eagles, both Golden and Bald, are living upon rabbits along the Souris River. They are seen almost daily and undoubtedly do much good by destroying a pest which has no competitor among mammals injurious to trees. Further up the river both species breed, according to Mr. W. D. Black, of Margaret, Man., who says they are not uncommon in that neighbourhood.

It is indeed unfortunate that these fine birds, together with several large hawks and owls, should be continually shot. Many people seem to think they have done something exceptionally meritorious when they relate the destruction of one of these useful birds. But, it is time such deeds were painted in their true colour, otherwise extermination will follow ignorance and the country will suffer from the increase of numerous rodents such as mice, rats, rabbits, etc., which in the past have been kept within reasonable bounds.

FEBRUARY 20.—The Richardson's Owl mentioned above has twice been up since that date. This morning it was found, as usual, in the straw shed, and, as is customary with these birds, allowed me to approach within a few feet. Later on I discovered it with a house mouse in its claws, which it ate and then disappeared into the woods to sleep.

MARCH 18.—The Canada Jays are now very much together. They are apparently in search of a nesting site and go about very quietly. Sometimes one, presumably the male, sings softly from some low bush, and when they become separated both utter loud cries.

MARCH 30.—The Northern Shrike that has been about here throughout the winter was shot to-day. It has on more than one occasion made itself obnoxious by killing Chickadees, Redpolls, and other small birds. As these had been specially attracted by food, it was impossible to stand by and watch their destruction; and so, after much threatening, the shrike has met the fate he meted out for so many others.

The economic value of these birds is questionable, for though they destroy many mice and House Sparrows, they are most

plentiful during the migration of small birds, particularly Tree Sparrows and Juncoes, upon which they prey with much persistency. They should not be confused, however, with the White-rumped Shrike, which takes their place during the summer months. These latter birds are probably much more useful, as their food is made up largely of grasshoppers.

APRIL 18.—Examined pellets of a Western-horned Owl of last summer and found them to contain fur of a striped gopher (unusual food), rabbit and mouse hair, and also broken bones of several small mammals.

JUNE 10.—Saw a male Marsh Hawk capture a Cowbird. He appeared suddenly over some bushes and made his capture almost before the small bird was aware of his presence.

Only a farmer can fully appreciate Cowbirds. You must be following the plough or tending cattle to note the habits which can be observed nowhere else. They will be seen at one time running about on the back of a cow, catching flies; at another, being shoved out of the way by the nozzle of a feeding horse. A small band are nearly always in attendance of the ploughman picking up noxious larvæ, such as White Grubs, etc., and when they become less hungry they content themselves with pinching the heads of large grubs, only eating the smaller. It is interesting to watch them running along with their beaks pointing upwards making a careful scrutiny above for a possible hawk. To see the males, which greatly predominate, showing off and being chased by the females; to sit still and have full grown young walk over one and fearlessly take food offered, besides many other little acts, tends to make us forget the habits of parasitism for which they are condemned, for with all their faults they still do much good; and, for the old-fashioned naturalist, who cares less for the dollars and cents, and more for Nature, because it is Nature, the Cowbird, when properly known, will always be looked upon with warm regard.

JUNE 11.—Noticed several Red Crossbills in the spruce woods feeding on old cones on the tops of the trees, which indicates that perhaps they breed here.

JUNE 18.—A nest of a Red-tailed Hawk examined to-day, contained three young that could almost fly, and a striped gopher.

JUNE 24.—Found the nest of a Swainson's Hawk in an aspen tree. There were three young in it about two weeks old, also three striped gophers and a Meadow Lark.

I have examined numerous nests of these hawks at different times, and when there were young present, have never failed to find gophers also, showing that the nestlings are supplied with

all they require. To find dead birds in the nest is quite an exception.

Owls also keep their larders well stocked with fresh meat, and it is by no means an uncommon thing to find several untouched mice in nests containing young of Long-eared Owls. I have twice found those rodents present a day previous to the first egg-hatching, but whether these were for the expected young, or had merely been supplied by the male for his mate's use, I am unable to tell.

AUGUST 5.—I have been taking special observation of House Sparrows feeding their young within the last two weeks, and find that the food consists largely of grasshoppers, which at present are more plentiful than usual. Both parents go out in search of these insects, sometimes as far as half a mile away.

NOVEMBER 12.—About thirty House Sparrows arrived from the north this morning and left in a southerly direction before evening.

NOVEMBER 20.—A Northern Shrike has been up several times recently and at present is devoting its attention to capturing Juncos. The House Sparrows have grown wise and as a rule are much too quick having learned that safety lies in rapid entrance into a building. The smaller birds are not so sagacious and attempt to escape by flying upwards, which almost invariably proves fatal, as the shrike follows like a bloodhound, and by sheer persistency more than rapidity of flight, accomplishes its object.

MEETINGS OF THE BOTANICAL BRANCH.

On the evening of November 13th, the first meeting of the Botanical Branch for the season was held at the residence of Mr. G. H. Clark. The following members were in attendance: Messrs. J. Macoun, R. B. Whyte, W. T. Macoun, T. E. Clarke, D. A. Campbell, G. H. Clark, L. H. Newman, A. E. Attwood, H. Groh, Geo. Michaud, Dr. Blackader, T. H. Binnie, W. H. Harrington and E. D. Eddy.

Mr. J. W. Gibson was the leader for the evening and chose as the topic for discussion "The adaptation of plants to their environment as shown by their internal structure." The different evidences of adaptation in the plant tissues were demonstrated by means of microscopes and a carefully selected collection of microscopic slides, some of which had been loaned for the occasion by Prof. W. T. McClement and his assistant, Mr. A. B. Klugh, of Queen's University.

The leader introduced the subject by first pointing out the

main problems that confront the student of plant ecology and also the practical value of the study over and above its mere scientific interest. He then proceeded to demonstrate the fact that the minute structure of the internal parts of plants may reveal an adaptation to their environment no less marked than does their external form or habit of growth. The ability of plants to meet the exigencies of a new environment by a modification of their internal structure was clearly shown as in the case of *Ranunculus aquatilis* and *Proserpinaca palustris* (Mermaid Weed) which were grown in air, although habitually they are aquatic. The difference in internal structure of leaves grown in bright sunlight and in shade was also demonstrated.

The question as to whether or not living plants absorb moisture otherwise than by their roots gave rise to some discussion on account of a divergence of views held by the different members of the Club. The discussion will probably be resumed at some future date when more experimental evidence will be presented. The value of dew to growing plants and the effect on transpiration of relative humidity of atmosphere were also discussed at some length. The view presented by the leader that excepting in the case of a few epiphytic plants which have specialized organs for the absorption of water, dew is only indirectly beneficial to plants i.e. in so far as it depresses transpiration, was challenged and rather discredited.

It was also pointed out that the main causes of internal modification of plant tissues were variations in the intensity of light and heat and also in available water supply. Of these three important ecological factors the last mentioned was considered most important, although a few of the members held the view that variations in heat are of even greater importance in modifying plant structures. The main characteristics of three great classes of plants were pointed out and discussed, viz.: Mesophytes, or the normal plants of a locality not given to extremes or excesses; Hydrophytes, or those plants that are surrounded by excess of moisture and have to provide against "drowning" by the development of an abundance of aeration tissue; Xerophytes, which endure great privation from lack of moisture and excess of heat, and which therefore must adapt themselves to such conditions by developing an abundance of cells for storing up water, by throwing out protective coverings and by lessening transpiration through sunken and protected stomata.

Several miscellaneous slides were also exhibited illustrating Halophytes (plants belonging to saline or alkali lands), Isophytes (plants whose leaves are the same on both sides), Carnivorous and parasitic plants.

J. W. G.

The second meeting of the Botanical Branch was held at the home of Mr. R. B. Whyte on Saturday evening, November 27th, 1909. There were present, in addition to the Chairman, Messrs. Geo. H. Clark, Groh, Michaud, Blackader, Attwood, Newman, Campbell, Prof. J. Macoun, W. T. Macoun.

There was no special subject for discussion, the arrangement being that each person present was to say something about what he had been doing during the summer. The discussion, however, proved so interesting that few men had an opportunity of telling of their work. Mr. Whyte told of what he was doing in raising seedling gooseberries. His object was to obtain a variety that would be as good, or better in quality, than any other, and which would be hardy and free from mildew. He showed specimens of a fine large seedling of the English gooseberry which he said was of very good quality. A discussion arose as to Mr. Whyte's methods, some claiming that there would be no marked increase in hardiness without the introduction of blood of a hardier gooseberry. The reason why the English gooseberries are susceptible to mildew in this country was thought by some of those present to be due to the fact that the English gooseberry was a native of a moist climate and when grown where the conditions were drier the leaves and fruit were affected by the mildew, as occasionally occurs in the drier parts of England. This brought out the interesting fact that some species of mildew thrive best in dry air, while some do best under moist conditions, as do the higher plants.

Mr. Michaud gave an interesting account of his work in the testing of vegetable seeds during the past summer. He found that, on the whole, seeds germinated better in diffused light than in total darkness. For instance, lettuce seed germinated better on the surface of blotting paper than between folds of this paper. The fact was brought out that in Nature most seeds germinate on the surface of the ground. As, however, it is impossible to control the conditions of moisture in the growing of crops outside it is necessary to plant the seeds in order to ensure their receiving sufficient moisture to germinate.

After Mr. Michaud had told of his germinating tests there was considerable discussion on the growth of plants and as to what proportion of the growth took place at night. One member claimed that there was more growth at night than in the daytime, but the general opinion was that this was not so. Growth takes place in darkness as well as in light, but elaboration of plant food takes place only in light. For instance, a potato may grow in a dark cellar by using up the food in the tubers which has been previously elaborated in the light.

Mr. Groh told of his study of the local hawthorns during the past summer. He examined fifty trees in different localities and collected flowering specimens of them, and later in the season obtained fruit as well. He found a marked difference in the number of stamens, styles and colour of the anthers of the flowers, and the number of flowers to a corymb, on different trees. The specimens, together with those collected by Prof. Macoun, have been sent to a specialist on *Crataegus*. Prof. Macoun stated that when collecting in western Ontario some years ago he had found that there was a month's difference between the time when the earliest blooming species of *Crataegus* flowered, and the latest. At Ottawa he had found in 1903 that the earliest bloomed on May 21st and the latest on June 3rd. He reported that he had completed the List of the Ottawa Flora from the lower forms up to the Caryophyllaceae.—W. T. M.

SOIREES.

The opening soiree of the Club for the season of 1909-10 held on the 14th of December, was of the nature of a conversazione. The first hour was devoted to a display of objects under the microscope and of natural history specimens. Afterwards short addresses were delivered by the President, Mr. A. E. Attwood, Mr. G. H. Clark and Mr. A. Halkett. Besides these a short talk, illustrated with lantern slides, showing the development and structure of the cell, was given by Mr. A. H. W. Cleave.

Several microscopes were very kindly loaned for the evening by Mr. J. W. Gibson, of the Normal School. Besides these Messrs. Cleave and Odell each had their own microscopes present and showed interesting objects to those attending the meeting. Mr. W. J. Wilson also took charge of one of the microscopes and entertained many.

The following exhibits were of much interest:—

Mr. Geo. Michaud, of the Seed Branch of the Department of Agriculture, showed

1. A set of old coloured plates of plants, taken from a botanical magazine published in London in the year 1790. These plates are remarkable from the point of view of the colour, which is all made by hand. Each plate is accompanied by a botanical description of the plant. The sets contain three or four plates with the text and were sold for one shilling each.

2. A set of the lithographic plates of "Farm Weeds," published by the Seed Branch of the Department of Agriculture, 1906 and 1909. These plates, which were painted by Mr. Norman

Criddle, both from the artistic and botanical point of view, deserve much praise.

3. One collection of economic seeds and weed seeds, put up by the Seed Branch, Department of Agriculture, containing the seeds of the most common forage plants and weeds.

4. One pocket collection, containing seeds of the worst weeds of the country, all mentioned in the Seed Control Act, 1905.

Several cases containing insects of many kinds were exhibited by Mr. Arthur Gibson, Mr. C. H. Young, and Mr. J. W. Baldwin. Those brought by Mr. Gibson were from the collection of the Division of Entomology at the Central Experimental Farm. They represented a collection mostly of local butterflies and hymenopterous insects. Mr. Young's cases contained chiefly a collection of microlepidoptera taken in the Ottawa District. These were beautifully mounted and were much admired. Mr. Baldwin's specimens were in two cases, one of which contained 92 specimens, representing 60 species of moths collected at Ottawa. In this case were some rare forms. In the other case an interesting series of the genus *Catocala* was shown. Dr. C. Gordon Hewitt sent in a small but interesting exhibit of coleoptera and diptera fossilized in gum animé, obtained for commercial purposes from Zanzibar, from areas where no trees are now visible. The gum is the product of *Trachylobium hornemannianum*.

Mr. Young also showed some cases containing a valuable collection of specially well prepared star fishes and crabs, all of which had been collected by him in British Columbia during the past year.

Mr. H. Groh, Assistant Botanist, Experimental Farm, exhibited a number of botanical sheets of native parasitic flowering plants which are destitute of green foliage. The following are some of those which were noticed.—

Cuscuta Epithimum, Clover dodder; *Cuscuta Gronovii*, Love-vine; *Monotropa uniflora*, Indian Pipe; *Monotropa Hypopitys*, Pine-sap; *Pterospora andromedea*, Pine-drops; *Epifagus virginiana*, Beech-drops; *Conopholis americana*, Squaw-root; *Orobanché uniflora*, One-flowered Cancer-root; *Orobanché fasciculata*, Broom-rape.

Mr. Groh also showed a stem of Juneberry (*Amelanchier*), which, according to him, "had been virtually choked to death by a vine of Climbing Bitter-sweet (*Celastrus scandens*). The stem had continued to increase in diameter until the coils of the vine were almost buried in the wood, but finally last June the obstruction of the passage of food had become so serious that the leaves turned yellow and dropped."

A very interesting feature was an exhibit, by Mr. Ernest LeSueur, of living turtles (some of which were exotic), salamanders and tree-toads. There were four of the last mentioned, and two of them (probably females) took on, early in the evening, the green colour of the electric-light shade.

Mr. Halkett showed a number of specimens of various fishes preserved in museum jars.—A. H.

INSTINCT AND EDUCATION.

An abstract of an Address read before the Ottawa Field Naturalists' Club, January 4th, 1910, by
Mr. A. E. Attwood, M.A.

Foreshadowings of Instinct in its mechanical manifestations are observable in inorganic nature in the phenomena of gravitation, magnetism and crystallization. The movements and behavior of plants resemble the instinctive actions of animals. Plants are animate objects, *i.e.* objects with mind. Heredity, a distinctive characteristic of instinct, is also a characteristic of plants. Vitality implies mentality.

Reflex action so closely resembles instinctive action that Herbert Spencer defines instinct as complex reflex action. Instinct is, however, a broader term as it is observable in the lowest of animals, whereas reflex action implies a more or less developed nervous system.

Instinct is racial memory; it is inherited habit; it is complex reflex action; it is capitalized experience. A series: an action, a repeated action, a habit, an inherited habit or an instinct, an intuition. Instincts are faculties which are innate, hereditary, semi-automatic and semi-conscious. They attain results without the necessity of previous individual instruction, reason, or experience.

There are two classes of instincts: primary or congenital instincts, and secondary or acquired instincts. The latter are evolved from the exercise of a rational intelligence. The brain is the organ of reason. The evolution of instincts was promoted by the development of a brain in the animal kingdom. The brain is the school-master in the work of evolving instincts, it is a short-cutting device for the development of the race.

The progress of the race depends upon the constant accretion of secondary instincts. The work of education should be to develop desirable habits which shall be transmitted as instincts to subsequent generations. We should begin the training of a child many generations before he is born.

Just as there are vibrations in the solar spectrum below the visible red rays and above the visible violet rays, there are evidences of the working of mind outside of the range of consciousness. These extensions of the mental spectrum have been called the subliminal mind. Is not this subconscious mind identical with the instinctive mind?

The brain is the organ of the conscious or objective mind. The instinctive mind has no special organ, but is the federal head of the aggregated minds of the cells which constitute the whole organism. The brain, or imperial mind, exerts its influence on the instinctive or colonial mind by the power of suggestion. "Every suggestion is a nascent instinct. Original sin is a kind of suggestion instilled from childhood and producing real hereditary sin."—(Guyau).

Conscience is a peculiarly human emotion. It is certain of action only when it has become instinctive. A good conscience is the fruit of good seed sown by the rational intelligence in the soil of the instinctive mind. The voice of conscience is the voice of our distant progenitors transmitted along the lines of heredity.

Patriotism is an altruistic instinct. Kipling's "Absent-Minded Beggar" acts, not rationally, but instinctively when he enlists in defence of the Empire. When a nation finds it necessary to assert its patriotism by noisy and dangerous demonstrations, it may be assumed that such patriotism has not yet developed into an instinct.

The sting of death is withdrawn when it is recognized that like sleep, it is instinctive. The great majority of deaths are peaceful because they are instinctive.

What has been called an instinctive aversion to snakes, seems to be disappearing in the civilized human race in the light of the fact that most of our snakes are harmless. The rivalry of the rat for the possession of the earth may in time develop a similarly strong instinct in the human mind against that animal.

Instinct, Intuition, Omniscience, are words embodying ideas of the same category. Intuition is a high grade of instinctive human intelligence, the faculty of knowing without the labor of inductive reasoning. Genius is habitual intuition. The genius is "in tune with the Infinite;" his instinctive mind vibrates in unison with the mind of the Omniscient.

Extend instinct, intuition, genius to infinity and we attain omniscience. Divine omniscience and human intuition are the same in kind, differing only in degree, differing as the Father differs from the son.

THE FLETCHER MEMORIAL FUND.

At a meeting of the Fletcher Memorial Committee held on the 7th February, it was decided to close the subscription list to the above fund on the 20th day of March next. The expectations of the Committee have almost been realized, but before the list is finally closed, it is hoped that at least another hundred dollars will be subscribed, so as to bring the total up to \$1,800. This is the last appeal which the Committee intends to make, and, therefore, if there are still any members of the Club, or others, who wish to contribute to the Memorial to be erected at the Central Experimental Farm, it is important that they should attend to this matter at once. This will be the first memorial of its kind in Canada, and the Committee is particularly anxious that it shall be worthy of him to whose memory it is to be erected. This, of course, can best be accomplished with the help of as many members of the Club, and friends, as can conveniently subscribe towards the cost of the undertaking. ARTHUR GIBSON, Secretary-Treasurer of Committee, (Experimental Farm, Ottawa).

NOTES.

BARTONIA VIRGINICA IN QUEBEC. In Mr. James M. Macoun's "Contributions" in the January number of *The Naturalist*, *Bartonia virginica* (L) BSP. is recorded from one Canadian locality, near Mahone Bay, N.S. I am glad to be able to add to this record another from St. Hubert, near Montreal. In 1908, shortly before his death, Dr. Fletcher received specimens of this plant collected by Father Marie-Victorin, in June, July and August of that year, at the above locality. They were stated to be growing in the peat bogs of that place. HERBERT GROH.

BONAPARTE'S GULL. The stomach of a Bonaparte's Gull taken at Point Pelee about November 25th, 1909, was sent to Mr. Arthur Gibson, at the Experimental Farm, for the purpose of having the contents determined. Over fifty noctuid larvæ were found, which Mr. Gibson reports to be of a species of *Agrotis*, or *Hadena*.

The use of insects as food for gulls, was referred to by Mr. Arthur H. Norton, in the October "Auk" when he mentioned the maggots living in seaweed, used for this purpose, but the caterpillars eaten by the Bonaparte's Gull are terrestrial, and were probably found in some such situation as a Muskrat house, which consists of decayed vegetable matter, such as rush stems and grasses. They must have been in considerable abundance to have enabled the gull to find so many of them at one time. W. E. SAUNDERS, London, Ont.

A RARE WEASEL AT OTTAWA.

By W. E. SAUNDERS, London, Ont.

Exact knowledge regarding weasels is not a part of the mental equipment of most nature lovers, and the capture of what was to me a rare specimen, may afford an opportunity for hanging thereon a few remarks.

It is, of course, well known that the weasel, which in summer is brown above and yellowish white below, turns pure white in winter, with the exception of the tip of the tail, which is black at all seasons. I had long realized that there were two sizes of weasels which (naturally!) were of two species, but some years ago when I happened to study them a little I found that all the large ones were males, and all the small ones were females, and the authorities state this is the normal condition of affairs in the common *Putorius noveboracensis*. There is, however, a small weasel in old Ontario, and I have been on the lookout to find it for a long time, but vainly, until November 11th. at Ottawa, when I shot one on the stone ridge thrown out of the pipe excavation leading to the Tuberculosis Hospital. I saw before shooting that this specimen was a small one, and when I found I had a male, I was delighted, as it could be nothing else than the long sought Bonaparte's Weasel, *Putorius cignonani*. When I fired I was delighted to see him fall right over, apparently dead, but to make sure I ran the intervening distance and was disgusted to see a flicker of white disappearing down through the stone pile, just as I reached him. That, of course, made it necessary that the stone pile should be removed, which was promptly done, and, encouraged by an occasional drop of blood, operations proceeded as far as the ground and then along the pile in the direction indicated, when he was soon found stone dead.

Doubtless this animal covers the coniferous parts of Ontario fairly well, but in my district around London, where the vegetation is largely deciduous and where balsams are entirely absent, it is doubtful if there are any of these remaining; certainly I have never been able to learn of the capture of one of them.

The normal measurement in millimeters of male and female *noveboracensis* and the measurement of this specimen of *cignonani*, which seems to be normal, are given below:

	Length	Tail	Hind foot
Noveboracensis—Male.....	418	150	50
Female.....	298	92	26
Cignonani.....	290	80	35

WE DEAL WITH OUR ADVERTISERS

James Hope & Sons Booksellers, Stationers Sparks St. Ottawa
Bookbinders, Printers

OPPOSITE THE CITIZEN BUILDING, Ottawa.
W. E. SEED TAILOR 133 Sparks St.,

J.G. BUTTERWORTH & Co.

ALL-RAIL SCRANTON COAL
HAS NO EQUAL
86 SPARKS STREET, OTTAWA

THE C. C. RAY CO. Ltd.

BEST QUALITY **COAL** LOWEST PRICE
58 SPARKS ST. Phone 461

The **TORONTO GENERAL TRUSTS CORPORATION.**

A Quarter of a Century's

Successful administration of ESTATES ranging in value from \$500 to \$5,000,000 each, is the best guarantee that you may confidently name as your EXECUTOR and TRUSTEE this Corporation

JAMES DAVEY, Manager
OTTAWA BRANCH:
Cor. SPARKS and ELGIN STS.

CHARLES WATT

Specialist in
Phone 1350 ARTISTIC BRASS HARDWARE AND KITCHEN FURNISHINGS
Bank & Somerset Streets

American Entomological Co.

DEALERS IN
Insects and Entomological Supplies

The only makers of the genuine Schmitt Insect Boxes. Manufacturers of Cabinets and Cases for Insect Collections, and of the

American Entomological Company
Insect Pins

Supply List No. 8 and List of Entomological Publications for sale just out. Write for it. Insect List No. 6 still in force

GEORGE FRANCK, Manager
55 Stuyvesant Av., BROOKLYN, N.Y.

GATES & HODGSON,
Successors to

WALKER'S
CONFECTIONERS, &c.
Phone 750 73 SPARKS ST.

R. McGIFFIN
MEN'S FURNISHINGS
106 Sparks Street } OTTAWA
24 Rideau Street }

W. B. GRAHAM,
Groceries and Dairy Produce
Phone 1967
395 BANK ST., Cor. Waverley, OTTAWA

THE **SMITH PREMIER**

The World's Best Typewriter Visible Writer

E. R. McNEILL, Agent
166 SPARKS ST., OTTAWA

HENRY J. SIMS & Co.

Furriers and Hatters
110-112 SPARKS ST. - OTTAWA.

MASSON'S



SHOES

72 Sparks Street, Ottawa

OTTAWA DAIRY PURITY INSPECTED MILK ICE CREAM

Backache Try **MUSGROVE'S K. & L. SPECIFIC**
SURE CURE 212 BANK STREET, OTTAWA

JUN 1 3 1968

The Ottawa Field-Naturalists' Club.

Patron:

THE RIGHT HONOURABLE EARL GREY,
GOVERNOR-GENERAL OF CANADA

Council 1909-1910

President:

Mr. A. E. Attwood, M.A.

Vice-Presidents:

Mr. A. Halkett. Rev. G. Eifrig

Librarian:

Mr. C. H. Young, Geological Survey.

Secretary:

Mr. T. E. Clarke, B.A.
(470 O'Connor Street).

Treasurer:

Mr. Arthur Gibson,
(Central Experimental Farm)

Mr. Alex. McNeill.
Mr. L. H. Newman, B.S.A.
Mr. J. W. Gibson, M.A.
Mr. F. T. Shutt, M.A.

Mr. A. G. Kingston.
Miss McKay Scott.
Miss F. M. Burt.
Miss B. Gilbertson.

Standing Committees of Council:

- Publications:* L. H. Newman, Alex McNeill, F. T. Shutt, C. H. Young, A. Gibson, Miss McKay Scott.
- Excursions:* G. Eifrig, T. E. Clarke, A. McNeill, J.W. Gibson, A. G. Kingston, A. Gibson, Miss B. Gilbertson.
- Socials:* A. Halkett, L. H. Newman, F. T. Shutt, A. G. Kingston, J. W. Gibson, Miss F. M. Burt.

Leaders at Excursions:

- Geology:* H. M. Ami, W. J. Wilson, T. W. E. Sowter, W. A. Johnston
- Botany:* W. T. Macoun, John Macoun, D. A. Campbell, L. H. Newman, T. E. Clarke, H. Groh.
- Entomology:* W. H. Harrington, A. Gibson, C. H. Young, J. W. Baldwin.
- Conchology:* J. F. Whiteaves, F. R. Latchford, S. E. O'Brien.
- Ornithology:* G. Eifrig, A. G. Kingston, H. U. Morris.
- Zoology:* E. E. Prince, A. Halkett, E. E. Lemieux, E. LeSueur.
- Archæology:* T. W. E. Sowter, J. Ballantyne.
- Meteorology:* Otto Klotz, D. A. Campbell, A. McNeill.

Auditors:

R. B. Whyte. J. Ballantyne.

Membership Fee to O.F.N.C., with "Ottawa Naturalist,"
\$1.00 per annum.