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December, 1890.

THE OTTAWA NATURALIST

VOLUME IV. No. 9.

The Transactions

Of the Ottawa Field-Naturalists' Club

(Organized March, 1879. Incorporated March, 1884.)

CONTENTS.

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NOTICE.—The Treasurer begs to call the attention of members to the advertisements.

THE ENGLISH SPARROW.

By J. Ballantyne.

(*Read February 21st*, 1890.)

You are all aware that it is but a short time since the bird known by the name of "The English Sparrow" was introduced into North America, yet, notwithstanding this fact, it has increased in numbers so fast that it has now spread over nearly a third of the whole continent and is extending its area at the rate of about 275,000 square miles annually. It is highly probable that there are more of these sparrows at the present time in North America than of any single species of native bird. The presence of so many of them has become a question of such economic importance that the United States Department of Agriculture has issued a bulletin containing upwards of 400 closely printed pages relating wholly to the English Sparrow in North America, especially in its relation to agriculture. Attention to this bulletin has already been called in the last number of the Ottawa Naturalist. It deals with the whole question in a most exhaustive manner, entering fully into details concerning its introduction and diffusion, rate of increase and checks on the same. It also gives the replies from hundreds of observers from all parts of the country relating to the good and bad effects of sparrows on vegetation. Subsequently it points out the relation of sparrows to native birds, showing clearly that many of our insect-eating birds have been completely routed by the invaders. The conclusions arrived at by an overwhelming majority of observers are, that sparrows are more or less injurious to nearly all growing crops, including all our common fruits as well as grain and vegetables. and what little good they do would have been better done by our native birds had they not been driven away. The bulletin also gives an account of various methods which have been tried, in different localities, to destroy the sparrows, such as poisoning, trapping, shooting, etc. The methods most approved are pulling down their nests when this can be done, and persistent shooting. They become so wary that it is difficult to either trap or poison them.

Perhaps it may not be generally known that a great many colonies

of sparrows have been introduced into the United States and Canada a considerable number direct from Europe, and a much greater number from their progeny in this country. The places and dates of the first importations, so far as known, are as follows :—

Brooklyn, N.Y., 1851-52; Portland, Maine, 1854-58; Peace Dale, Rhode Island, 1858; Boston, 1858-1868; New York City, 1860; Philadelphia, 1869, and not long afterwards into nearly every State of the Union. In Canada they were first introduced at Quebec in 1864, Montreal 1870, Ottawa the same year, Hamilton 1872, Toronto 1875, Halifax 1875-76.

The English or House Sparrow (*Passer domesticus*) is common over nearly the whole of Europe, the northern parts of Africa, and a large part of Asia. It has also been introduced into New Zealand and Australia, and has become, like the rabbits, a great pest in those countries. It is known to have been quite common in eastern countries before the beginning of the Christian era. Aristotle mentions it as being a common bird in Greece in his day. Dr. Charles Pickering, of Boston, states that in hieroglyphic times the picture of a sparrow indicated an enemy or one ready to fight. I think most of you who are at all familiar with the habits and disposition of their latter day descendants will agree with me that they are no unworthy sons of their ancient pugnacious sires. In an old and highly venerated book, which some of you may occasionally see, it is stated that the current price of sparrows some two thousand years ago or thereabouts was two for one farthing, a pretty sure indication that sparrows were either very plentiful at that time and place or that farthings had a higher commercial value than they now have.

As has already been stated the consensus of opinion among observers, regarding the habits and food of sparrows, is unmistakably against them so far as agricultural pursuits are concerned, and the verdict has gone forth that it would be better if they were made to go. Accepting this dictum as final, the question naturally enough arises, can they be made to obey? It has been said by some that they could "call spirits from the vasty deep," but the reply to the question, "Will they come?" has never been satisfactorily answered; so it may be with our little fellow-emigrants. The question of their going may not be very

easily answered. It seems to me that the advent of the people of Europe on this continent is almost a complete parallel to that of the sparrows. When they first came to this country they were heartily welcomed by the then occupiers of the land, but it was not long before the avarice, greed and cruelty of the strangers caused them to change their minds, and the word went forth among the dusky nations that the white man must go. We all know where he is now to be found, but where is the red man? So it may be with the sparrow. It came, or rather was brought, as the welcome ally of the husbandman. It has outlived the welcome, but it is still here in ever increasing numbers, and, like its human prototype, it has probably come to stay.

One of England's greatest men in the world of science, but recently deceased, makes the statement that the power of adaptation to surroundings, means the survival and extension of both plants and animals so conditioned. The proofs of the truth of this statement are abundantly manifest, and perhaps no more striking instance can be given than the rapid increase and spread of the House Sparrow in this country. It appears to be possessed of the power of accommodating itself to climatic conditions in a higher degree than most of our native birds, and the varied range of food on which it can subsist and thrive fits it in an eminent degree to become a citizen of the world.

The sparrow, in providing for the rearing of its young, takes great precautions in the way of securing dry and warm quarters for them; from the care exercised in this respect there are reasons for believing that an unusually large proportion of their eggs produce young. It may also account in some manner for their great fecundity. The drain on the system incident to maternity being reduced to a minimum on account of their nests being always thickly lined with feathers and non-conducting materials, so that the time required to keep the eggs constantly warm during the period of incubation, must be shorter than it would be when the construction of the nest was of a different character. The fact that sparrows have from three to six broods in a season, varying from five to seven in each brood, while very few of our native birds have more than two broods, varying from four to seven in each, would confirm the belief that the drain on the vitality of the mother sparrow is less than it is with many of our native birds. Another

proof that maternal duties do not affect the vitality of sparrows in a very great degree is the fact that occasionally there will be found in their nests, at one and the same time, new-laid eggs, eggs half hatched, and young birds. I have not seen this myself, but my friend, Mr. W. A. D. Lees, on the 30th May, 1888, took from a nest in the top of a young hemlock tree, built on the remains of an old robin's nest, two young birds just out, one half-hatched egg, and another fresh and good, apparently new laid. Whether a continuous succession of eggs and young birds ever extend over a whole breeding season remains, so far as I know, yet to be found out.

During the past fall, after the breeding season was over, several members of the club observed sparrows carrying feathers and other light materials to the nests occupied in summer, with the evident purpose of making them warm and better adapted to resist the severity of winter weather. In fact, it did not seem to be nest-building at all, but rather house-building, much after the same manner as a man might build a house and occupy it. This habit, I believe, is common in other cool climates. I was not aware of the fact until a few days ago, when Mr. Lees called my attention to an article on "Winter Birds" in the December number of *Blackwood's Magazine*, 1889. I will give the quotation: "In times of severity he seeks the innermost eaves and holes of thatches, gnarled ivy roots and interior of barns, being a lover of warmth to no inconsiderable degree. Certain it is that at times, when nesting cannot possibly occupy his mind, he may be seen dragging feathers about which evidently are to warm the nest last used in summer." It was gratifying to learn that observations in Canada were in such complete harmony with those made in England on this peculiar habit of the sparrow. It would be a reasonable conclusion to arrive at, that it was a case of adaptation to climatic conditions.

Sparrows begin nest-building very early in the year, and it is certain that occasionally they hatch young in February. I was informed by Mr. Fletcher a few days ago that he saw sparrows carrying hay and other materials to a nest on Metcalf street in the last week of last January, also that a warm new-laid egg was found in Mr. A. McIntyre's porch on the 18th day of the same month. Mr. Armstrong, M.P. for one of the ridings of Middlesex, tells me that he saw fall from

a sparrow's nest in this city, in the last week of February, three or four years ago, a half-fledged sparrow; there were probably others in the nest. Notwithstanding the above, there are reasons, however, for believing that the breeding season does not fairly begin until the latter part of April or the beginning of May.

It may be owing to the fact that sparrows have been brought so much into contact with man that they have attained to such a high degree of intelligence. There is little doubt but that they exercise a greater degree of cunning, it may be called, in self-preservation and applying means to ends than do most of our native birds. A case illustrative of this fact I saw in one of the papers a short time ago. It is as follows: A gentleman in one of the neighboring States having been greatly pestered with sparrows undertook to destroy them. To do so he soaked wheat in a solution of arsenic and water for some time, and then had it thoroughly dried. This he scattered about in places convenient for the sparrows to get. In a yard close by he had a lot of chickens which he was in the habit of feeding with the same kind of grain, unpoisoned of course, and where the sparrows were in the habit of congregating and eating the wheat along with the chickens. At first the sparrows readily ate the poisoned grain, but, soon experiencing the disagreeable effects of eating grain otherwise than in the company of the chickens, refused to eat wheat at all, whether poisoned or not, unless the chickens would eat it also. They knew that it was safest to eat in good company, and acted accordingly. This may be a case of exaggeration and not quite in accordance with facts, but there are so many well authenticated accounts of their sagacity as to leave no room to doubt the statements made concerning their wonderful cunning.

Sparrows are largely used as food in Europe, as well as in this country; even in this city I have been informed that many of them are shot with noiseless guns and used in this manner, and are said to be quite as good as rice-birds or snow-birds. It might have an appearance of cruelty to destroy the pugnacious and self-maintaining little scavenger. I confess I like to see the sparrows hopping about the streets in winter when all the other birds are gone; but when it comes to be a choice between our native songsters and the foreigner my patriotism wells out in unmistakeable accents. Canada for Canadians, and if for love of our

country we must wage war, perhaps we cannot do better in the way of showing love to our enemies than by converting them into a savory mess and surrounding them with our own dear selves.

I might have said something about the effect of sparrows on our native birds, as observed at our own place; but as my ten-minute limit has fully expired, I will only say that the number of native birds nesting with us grows fewer year by year, some of them having disappeared altogether

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EXCURSIONS.

Excursion No. 2.—On 21st June an excursion attended by 110 ladies and gentlemen was held to Casselman on the Canada Atlantic Railway. Notwithstanding the intense heat and the enormous nummers of mosquitoes, which kept in constant attendance on the visitors throughout the day, the excursion was a most enjoyable one. Rare and interesting specimens rewarded the collectors in all branches. As soon as the Nation River was reached, the leaders made up their parties; some crossed the the river to examine the beds of fossiliferous limestones and to look for Indian relics; some took boats and amused themselves fishing or collecting aquatic plants or animals, while others went off in different directions through the woods and fields culling the treasures which everywhere presented themselves. As evening drew on the party reassembled at the railway station and, after an hour pleasantly spent in discussing the discoveries of the day, as well as the contents of the luncheon baskets, the usual addresses were delivered by the leaders. In the absence of the President, Mr. Robert Whyte congratulated those present on the successful and enjoyable excursion they had all taken part in. The thanks of the Club are due to Mr. Ebbs, of the Canada Atlantic Ry. Co., for the exceptionally low rate charged for the transportation which had made it possible for so many to attend.

Mr. Fletcher spoke of the insects collected and explained the uses of stings amongst the hymenoptera.

Mr. W. Scott, the botanical leader, drew attention to some of the rarer plants he had found. Botanically Casselman is a most interesting locality, several plants found here, not having been detected in any other place near Ottawa. Of these mention may be made of *Saururus cernuus, Phlox divaricata, Hypericum Ascyron, Thaspium aureum* and *Rudbeckia laciniata.*

Mr. W. A. D. Lees gave a good account of the birds seen by his party during the afternoon and spoke of their habits.

Mr. H. M. Ami spoke in his usual earnest manner and explained the rock and clay formations seen on the way to Casselman and there exhibited.

EXCURSION No. 3.— On the 19th of July a most successful excursion was held to Montebello by steamer "Empress." The weather was fine and a large number attended. On arriving at Montebello some visited the famous mansion and grounds, others explored the beautiful mountain from which the place takes its name, while a fortunate few, of the geological branch, were very kindly taken by the Hon. Mr. Papineau some distance up the river in his steam yacht to inspect certain tracks of marine animals there exposed in the rock. They were afterwards most hospitably entertained to luncheon at the Papineau mansion, for all of which, as for many like kindnesses in the past, the club is deeply indebted to Mr. Papineau. While returning by boat addresses were given: By Mr. Ami on the interesting marine tracks mentioned above; by Mr. Whyte on the plants collected, many of which were rare, and by Mr. Lees on the more noteworthy birds observed during the day.

EXCURSION No. 4. August 9th.—A trip to the Mer Bleu, in August, when the blueberries are ripe, has long been talked of by members of the Ottawa Field-Naturalists' Club, but it was not until this year that it could be arranged.

Upon the above date, however, a large party left by the C. A. P. 1 p.m. train, and found that the pleasures anticipated in such an excursion were in no way over-estimated.

On arriving at Eastman's Springs Station, Mr. R. B. Whyte acting as President announced the programme for the afternoon. The

party then examined the mineral baths and wells in the vicinity of the hotel, and some regaled themselves on the celebrated saline waters. Mr. Whyte then led the way to the vast peat bog known as the Mer Bleue. Some time was spent in visiting the gas spring and lighting the bubbles of gas as they rose to the surface of the water. The bog itself was very attractive; blueberries (*Vaccinium corymbosum* and its var. *atrococcum* with black berries) were very abundant, and in even greater profusion were the not unpleasant berries of the Choke-berry (*Pyrus arbutifolia* var. *melanocarpa*). The most conspicuous object was the beautiful ruddy Cotton Rush *Eriophorum Virginicum*), with here and there a patch of the white variety. The lovely White-fringed Orchis (*Habenaria blephariglottis*) was found in quantities, as well as many other peat-loving plants.

On reassembling at the railway station Mr. Whyte addressed those present in the happy and entertaining style now so well known to the members of the Club. He spoke of the plants gathered during the excursion. He was followed by Messrs. Fletcher and Kingston, who delivered addresses respectively upon insects and birds. Mr. Kingston's remarks upon the Chimney-swift were listened to with great interest.

Excursion No. 5, to Kirk's Ferry.—The last excursion of the season was to the above favourite locality and was well attended. At 9.30 on Saturday morning 6th September six large vans carried off a merry party of over 100 to the grand old Laurentian hills, now magnificent in their glorious autumn array of purple, green, bronze, and gold. The weather was all that could possibly be desired, clear, bright and hot; but tempered by a gentle breeze. A most enjoyable day was spent by all. Those who did not care to follow the energetic leaders sought out shady nooks amongst the rocks by the rapids or strolled quietly through the mountain woods. Prof. Macoun who had just returned from the Rocky Mountains was heartily welcomed by the members of the club.

An hour was well spent, before leaving for home, in listening to the leaders' addresses.

The acting President, Mr. R. B. Whyte, first called upon Prof. Macoun, who gave two most instructive addresses, the first upon the classification of Fungi and the way to distinguish between edible and

poisonous varieties. At the request of the leaders in Ornithology, he also spoke at some length upon some western birds which were representative of eastern species.

Mr. R. B. Whyte spoke upon general botany as leader of the botanical section. One plant new to the locality, viz., *Monotropa hypopitys* had been found by Mr. T. J. MacLaughlin.

Mr. H. M. Ami in speaking of the Laurentian rocks amongst which the day had been spent, showed specimens which he had collected during the excursion and mentioned the economic minerals contained therein.

Mr. Fletcher as leader in Entomology spoke of galls and in a general way of the instinct of insects.

The party reached home at 8 o'clock thoroughly satisfied with the last outing of the most successful series of excursions ever held by the club.

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SUB-EXCURSIONS TO THE MUSEUM OF THE GEOLOGICAL SURVEY DEPARTMENT.

Through the kindness of the Director and officers of the Geological Survey, the Excursion Committee of the club has been able to arrange a series of sub-excursions to the Museum on Sussex street. These excursions will be held at 2:30 p.m. on the second and fourth Saturdays in each month throughout the winter.

Three of these meetings have already been held, and were most successful. The first of them was of the Ornithological branch to the bird room.

They were met by Mr. J. F. Whiteaves, Palæontologist and Zoologist to the Survey, who delivered an instructive address upon the habits and noteworthy peculiarities of the birds exhibited as mounted specimens in the cases. Prof. Macoun also assisted in showing the specimens to the visitors, and afterwards took the party to the "long room," where he had arranged a large series of skins of western birds with their eastern representatives, he pointed out the gradual variation

which was shown by species obtained at the exreme limits of their habitats.

The second sub-excursion was of the Zoological branch. The club was again indebted to the kindness of Mr. Whiteaves for a most pleasant afternoon. The collection of stuffed animals was made the subject for a most entertaining object lesson.

The third sub-excursion was of the Botanical branch. Prof. Macoun met the party at the door with characteristic geniality and led them to the "long room," where he had laid out a large number of mounted specimens of Canadian plants and upon which he delivered an address which was eagerly listened to and highly appreciated. Some time was also spent in examining and comparing the specimens exhibited. Great interest was shown in the complete and handsome collection of Canadian woods, the economic values and distribution of which were described.

The next meeting will be held on Dec. 13th, when Dr. G. M. Dawson will give a description of some of the more interesting objects contained in the exsensive collection of Indian relics and curiosities, in the gathering together of which he has taken such an active part. The subjects to be explained at their meetings in the Museum will be announced from time to time in the OTTAWA NATURALIST. Mr. Ferrier has promised two lectures upon Mineralogy and Lithology. The Director, Dr. Selwyn, and other officers of the Survey Staff will take charge of the other meetings of the course.

The thanks of the Club are due to the Director and Staff of the Geological Survey for this opportunity of examining the collections in the National Museum under these very advantageous circumstances, and we trust that the sub-excursions will be largely attended.

Those who had the good fortune to attend the three first meetings are very grateful for the courtesy shown them on those occasions by Mr. Whiteaves and Prof. Macoun.

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BOOK NOTICES.

MANUAL OF INJURIOUS INSECTS AND METHODS OF PREVENTION. By Miss E. A. Ormerod. Second edition.

We have just received from our highly esteemed corresponding member, Miss Ormerod, copies of a much enlarged and thoroughly revised edition of her well-known Manual of Injurious Insects. Economic Entomology has made great progress since the appearance of the first edition in 1881, and this progress is largely due to the unceasing efforts of this talented authoress. Her Annual Reports are eagerly looked for by thousands of farmers in England and other parts of the world. There is no writer upon the science of combating the ravages of insects which attack crops, in Australia, India, South Africa, the United States or Canada, who does not quote her opinion as the highest authority upon those subjects which she has studied, and the present remarkable work is just what might have been expected from such a writer. "Insect Life," issued from the Department of Agriculture of the United States, and edited by the highest living authorities upon Economic Entomology, contains the following complimentary notice of this work:—"On account of its convenient size, admirable arrangement, plain language, and abundant illustration, it is almost a model of what such a work should be."—"Miss Ormerod's work cannot be too highly commended."

The merits enumerated above render this work intelligible—nay, indispensable, to every farmer, gardener and fruit-grower who wishes to carry on his work in the most successful manner. Nor is this the case in England alone where the work was written, for so many of the insects mentioned are common to both Europe and America that it will be found of interest to all of our readers. Moreover, from the fact that most of our injurious species have been imported from Europe, we know not at what moment any of the others mentioned in this work may not appear amongst us as a serious tax upon our cultivated crops. The different kinds of attacks are arranged alphabetically under the three headings, Food Crops, Forest Trees, and Fruit. Some new attacks not mentioned in the first edition, and which occurred subsequently to

the appearance of that volume, are here treated of at considerable length, *e. g.*, the Hessian Fly, Stem Eel-worms, and the Wheat-bulb Fly. In all cases much additional information is given; but particularly with regard to Wire-worms, Turnip-Flea and Hop Aphis. In the treatment of insects injurious to fruit trees a most important addition is that of the use of the arsenical poisons. The use of these poisons, now so well understood in this country, but which were until quite recently unknown in England as insecticides, has been wisely and boldly advocated by Miss Ormerod during the past two years, and the results have been most satisfactory.

As an appendix to the Manual is given a short and copiously illustrated "Introduction to Entomology," where, in the plainest possible language, the structure and changes of insects are described, and illustrations and definitions of the various natural orders into which they are classified are given, so as to "enable the observer of a crop attack to tell at least what kind of insect is before him," and also "in the list of the orders of insects, notes are given of the most observable of the characteristic points by which the insects composing these different orders may be distinguished from each other."

A glossary of terms and a full index render this work very complete. It contains 410 pages, and is illustrated with 155 excellent figures, many of them from the authoress's own pencil. It is well printed, neatly bound in cloth, and the small price at which it is published ($1.25) brings it within the reach of all.

REVISION OF THE SPECIES OF THE GENUS AGROTIS. By John B. Smith, 8vo. Washington, pp. 237, 1890.

This important work forms Bulletin No. 38 of the United States National Museum. It was begun when Prof. Smith was associated with Prof. Riley at Washington; but was subsequently handed over to the present author for completion, on account of pressure of other work upon the time of the United States Entomologist. Prof. Smith has made a special study of this difficult genus for many years and the present monograph will be gladly welcomed by all students of the noctuidæ. There is no doubt but that the publication will give an impetus to the study of these injurious insects, which was seriously

hindered by the lack of such a source of reference. There are five plates, four of sexual and other characters and one of an ideal agrotid, showing the normal maculation and habitus, with the proper names for the different constant markings, which will be of great service to students.

CATALOGUE OF INSECTS FOUND IN NEW JERSEY, 8vo. Trenton, pp. 486, 1890. By John B. Smith.

The above catalogue is issued by the Geological Survey of New Jersey and is a publication of much interest. Local lists are of great value when carefully prepared and Prof. Smith seems to have used the facilities he possessed to great advantage. Being well acquainted with all the leading Entomologists, both from the public positions he has held, and also as editor of *Entomologica Americana* he has been able to avail himself of the assistance of specialists in all the different orders. This catalogue is a valuable contribution to the Science of Entomology in North America, and we trust that ere long many others of the States will follow the good example set by New Jersey. 6,098 species are recorded as occurring in the State.

PLANT LICE AND HOW TO DEAL WITH THEM, by John B. Smith.

This is Bulletin No. 72 of the New Jersey Agricultural College Experiment Station. It is a pamphlet of 27 pages and is illustrated with 16 exceptionally good illustrations, all of which are original. The insects treated of are the Wheat Aphis, which, as well as its parasites, is fully described, the Cabbage Aphis, the Black Peach Aphis, the Cherry Aphis and the Melon Aphis. In all cases the best remedies are given and the method of their application is described. For such plant-lice as attack vegetation above the ground, Kerosene Emulsion and Whale-oil Soap are recommended, and for those species which attack the roots, periodical dressings of Kainit of Potash were found effective This substance not only acts as an efficient fertilizer, but also destroys many of the plant-lice. The application should be made just before a rain, if possible, so that the salts can be at once dissolved and carried into the ground.

This bulletin will be read by many with great interest, and from the language in which it is couched it can be understood by every one.

We take much pleasure in congratulating our esteemed corresponding member for having produced one of ehe very best bulletins ever yet sent out from any of the United States Experiment Stations. The language is plain, the matter is well arranged, and the illustrations are good; merits which cannot but commend it to agriculturists, the people for whom it is prepared.

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CORRESPONDENCE.

To the Editor of the Ottawa Naturalist:

SIR,—In answer to the letter of Mr. W. E. Saunders in the OTTAWA NATURALIST for August, I beg to say that when I visited the marshes near Kars in 1883, I, unfortunately, was not in a position to secure any specimens of the birds I took to be Short-billed Marsh Wrens (*Cistothorus stellaris*). As my visit took place seven years ago, my recollection of what occurred is not very distinct, but I remember seeing a large number of what I believed to be Short-billed Marsh Wrens, and getting quite close to a few of them. I was not, however, familiar with the species, nor was I then aware of its limited range. I had no doubt at the time of the correctness of the identification, but would have made an effort to further verify it before placing it on record had it not been for the fact that one of my co-leaders in Ornithology, Mr. Geo R. White, reported the capture of a female of the species near the Rideau on the 22nd of June of the same year. (See "Transactions" 1883-4, p. 141). This, I concluded, settled the matter. I have never seen the skin taken by Mr. White, but I preume it must still be in his collection.

Yours truly,

Ottawa, August 5, 1890. W. L. SCOTT.

NOTE.—The above note was sent to me by Mr. Scott immediately after the appearance of Mr. Saunders's letter, but was accidentally mislaid. The delay, therefore, in its appearance must be attributed to the Editor.—J. F.

The following interesting letter has been handed to us for publication by Prof. Macoun:

265 YONGE ST., TORONTO, NOV. 23RD.

To the Naturalist of the Geological Survey, Ottawa.

A few days since, I received for monnting, a very uncommon bird which proved to be a hybrid between a Pintail Duck and a Mallard.

It is a male with a beautiful blending of the plumage of both parent birds, In shape and length, it resembles the Pintail, measuring 25⅜ in. : tail 5⅜, culmen 2⅛, wing 11¼, tarsus 1¾, toe without nail 2, as against the measurement of a fresh Mallard I got for comparison : Length 23¼, wing 11, tail 3⅞, culmen 2⅛, tarsus 1⅞, toe 2⅛. The bright green head of the Mallard is toned down to a brownish green, and the ring runs up behind towards the top of the head, as in the Pintail, while below it extends and fades into brown or chestnut. The wing contains green instead of the deep violet or purple of the Mallard. The wings are the same as in the Pintail, having the pencilling much heavier than the Mallard. It is a very interesting and fine looking specimen.

In Mammalogy too, I have just received a curious specimen; a red Deer, half white. Although a heavy buck, it is not nearly as tall as an ordinary one. The white extends from the belly to half way up to the back, on sides of face, top of neck, shoulders, front leg and hind quarters. It was killed on Cove Island, Lake Huron. When I have it completed I intend to have it photographed.

W. CROSS,
(Taxidermist and Naturalist)

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THE WINTER LECTURES.

Throtgh the kindness of Dr. J. A. MacCabe, Principal of the Ottawa Normal School, the winter courses of lectures will be held in the commodious and comfortable Lecture room of that institution. This is a great advantage, and one which we feel sure will be appreciated by all our members. The programmes for the two series of lectures are presented herewith, and will be found to contain papers of great interest. The soiree committee, in drawing up the programmes, particularly endeavoured to obtain papers which would be of interest to the general public as well as to naturalists.

The educational aims of the Ottawa Field-Naturalists' Club have been kept prominently in view, and to further this end it has been decided by the Council to make admission to all the lectures in both courses free to any who may wish to attend.

With the object of making the lectures as entertaining and instructive as possible, where practicable specimens will be exhibited illustrative of the subject discussed.

The chair will upon all occasions be taken promptly,—for the evening lectures at 8 o'clock, and for the Monday afternoon popular science lectures at 4.15 p.m. These afternoon lectures will last for 45 minutes, and 15 minutes will be given for discussion.

1890. Ottawa Field-Naturalists' Club. 1891.

EVENING LECTURES 8 P.M.

1890.

Dec. 11.—Science as an Aid to General Education.. ...Dr. MacCabe.
President's Inaugural Address.. ....Dr. Ells.

1891.

Jan. 15.—Report of the Zoological Branch.
The Beaver ..... Mr. Lett.
19.—Report of the Ornithological Branch.
The Chimney Swift.....Mr. Kingston.
Canadian Gems .....Mr. Willimott.
Feb. 12.—Report of the Botanical Branch.
The Development of Cultivated Fruits from Wild Varieties ..... Mr. John Craig.
26.—Report of the Conchological Branch.
" Some new species of Chazy Fossils. ... ... .Mr. Sowter.
" A Botanist among the Glaciers... .. Prof. Macoun.
Mar. 3 Report of the Geological Branch.
Asbestus..... .....Dr. Ells.
12.—Report of the Entomological Branch.
Mineral Phosphates..... .....Mr. Lainson Wills.

MONDAY AFTERNOON LECTURES 4.15 P.M.

Jan. 12.—The Study of Natural History .....Miss M. A. Mills.
19.—The Geographical distribution of Plants.....Prof. Macoun.
26.—The Educational value of Botanic Gardens...Mr. Fletcher.
Feb 2.—The Physiology of Plants.....Mr. W. Scott.
9.—The Migration of Birds.....Mr. Lees.
16.—The True Bugs .....Mr. Harrington.
23.—The Chemistry of Food (1).....Mr. Shutt.
Mar. 2.—The Chemistry of Food (2).....Mr. Shutt.
9.—Beneficial Birds..... .. Kingston.

N.B.—All the above lectures will be delivered in the Lecture Room of the Normal School. Admission free. Anyone wishing to attend will be welcome.

SUMMARY

—OF—

Canadian Mining Regulations.

NOTICE.

THE following is a summary of the Regulations with respect to the manner of recording claims for *Mineral Lands*, other than Coal Lands, and the conditions governing the purchase of the same.

Any person may explore vacant Dominion Lands not appropriated or reserved by Government for other purposes, and may search therein, either by surface or subterranean prospecting, for mineral deposits, with a view to obtaining a mining location for the same, but no mining location shall be granted until actual discovery has been made of the vein, lode or deposit of mineral or metal within the limits of the location of claim.

A location for mining, except for *Iron* or *Petroleum*, shall not be more than 1500 feet in length, nor more than 600 feet in breadth. A location for mining *Iron* or *Petroleum* shall not exceed 160 acres in area.

On discovering a mineral deposit any person may obtain a mining location, upon marking out his location on the ground, in accordance with the regulations in that behalf, and filing with the Agent of Dominion Lands for the district, within sixty days from discovery, an affidavit in form prescribed by Mining Regulations, and paying at the same time an office fee of five dollars, which will entitle the person so recording his claim to enter into possession of the location applied for.

At any time before the expiration of five years from the date of recording his claim, the claimant may, upon filing proof with the Local Agent that he has expended $500.00 in actual mining operations on the claim, by paying to the Local Agent therefor $5 per acre cash and a further sum of $50 to cover the cost of survey, obtain a patent for said claim as provided in the said Mining Regulations.

Copies of the Regulations may be obtained upon application to the Department of the Interior.

A. M. BURGESS,
Deputy of the Minister of the Interior.

DEPARTMENT OF THE INTERIOR,
Ottawa, Canada, December 19th, 1887.