

JANUARY, 1909

VOL. XXII, No. 10

THE
**OTTAWA
NATURALIST**

Published by The Ottawa Field-Naturalists' Club.

**JAMES FLETCHER, LL.D.
MEMORIAL NUMBER**

Tributes by Mr. A. E. Attwood, Lieut.-Col. W. White, Dr. W. Saunders,
Mr. W. H. Harrington, Mr. R. B. Whyte, Mr. Arthur Gibson,
Prof. John Macoun, Dr. H. M. Ami, Mr. Frank T.
Shutt, Rev. G. Eifrig, Mr. E. R. Cameron,
Mr. T. J. MacLaughlin, Mr. W. J.
Topley and Dr. S. B. Sinclair.

ISSUED JANUARY 12, 1909.

OTTAWA, CANADA;
THE ROLLA L. CRAIN CO. LIMITED
WELLINGTON ST.

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
"THE BOOKSTORE" SELLS
GOOD BOOKS



ASK FOR OUR CELEBRATED
**FLOOR AND HOUSE
PAINTS**
MADE IN OTTAWA

"Merit" placed **ALLEN & COCHRANE**
THE RED CROSS DRUGGISTS at
the head in the drug business of
Ottawa—on merit they seek your
trade. 3 STORES, OTTAWA, CANADA

OTTAWA PAINT WORKS
Phone 395 138 Bank St.

WOODS, Limited

**SLEEPING
BAGS**

OTTAWA AND WINNIPEG,
Factory - HULL.

SILK TENTS

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

For Quotations
PHONE 8512

Ottawa Sample Room,
Canadian Building. Phone 4463

ROONEY & COOPER
TAILORS
(Ladies and Gentlemen)

Your Patronage 67 Sparks Street
Solicited Ottawa

A. ROSENTHAL & SONS, LTD.
JEWELLERS AND
OPTICIANS

Goldsmith's Hall Ottawa

THE BANK OF OTTAWA
Head Office and Main Branch
Wellington Street, Ottawa

LOCAL BRANCH OFFICES

Cor. Bank and Gloucester Sts.
Cor. Bank and Gladstone Ave.
Cor. Bank and Fourth Ave.
Rideau Street
Somerset Street
Main Street, Hull, Que.

R. H. KENNY & CO.
HIGH CLASS
TAILORS

96 Bank Street Ottawa

INSURE IN
Mutual Life of Canada

H. MOONEY & SON
General Agents
111 Sparks Street Ottawa

At each of the above named offices, savings
accounts may be opened with a deposit of \$1
and upwards, on which interest will be al-
lowed.

KODAKS

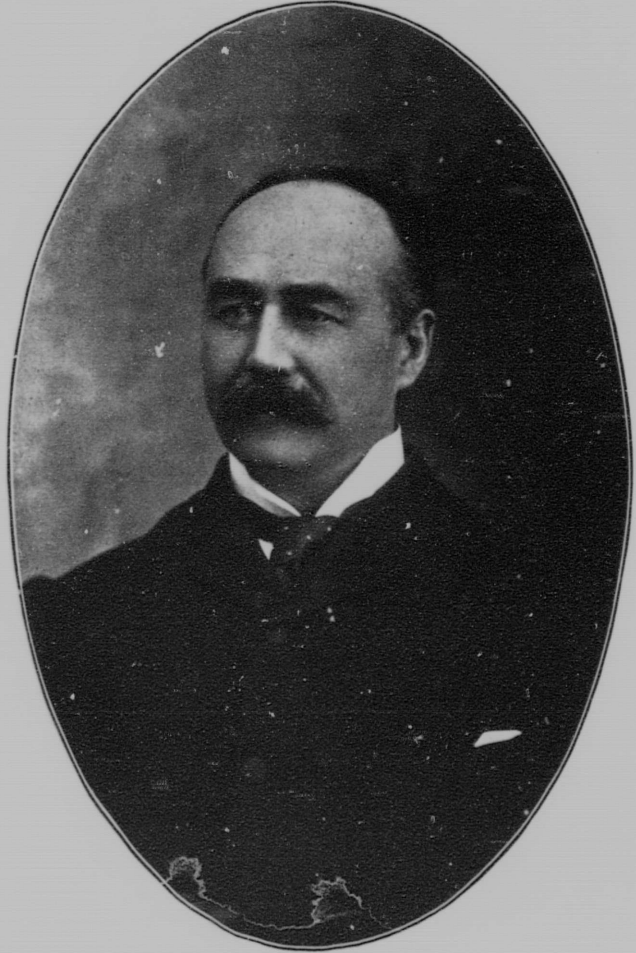
TOPLEY

KODAKS

THE 2 MACS, LIMITED

EVERYTHING NEW IN WALL PAPER

P. STEWART 224-226 BANK STREET } OTTAWA.
701 SOMERSET STREET }



James Fletchery.

THE 2 MACS LIMITED
THE BUSY STORE
ALL WITH HIGH CAREER

JAMES FLETCHER, LL.D.

MEMORIAL NUMBER

Tributes by Mr. A. E. Attwood, Lt.-Col. Wm. White, Dr. W. Saunders, Mr. W. H. Harrington, Mr. R. B. Whyte, Mr. Arthur Gibson, Prof. John Macoun, Dr. H. M. Ami, Mr. F. T. Shutt, Rev. G. Eifrig, Mr. E. R. Cameron, Mr. T. J. MacLaughlin, Mr. W. J. Topley and Dr. S. B. Sinclair.

NOTE—This Memorial Number has been edited by a Committee specially appointed by the Council of the Club and consisting of Mr. Arthur Gibson (Acting Editor), Mr. W. H. Harrington and Mr. F. T. Shutt.

THE OTTAWA NATURALIST

VOL. XXII.

OTTAWA, JANUARY, 1909

No. 10

JAMES FLETCHER, LL.D.

As mentioned in the December number of THE OTTAWA NATURALIST, it is with great regret that we have to record the death of our very dear friend Dr. James Fletcher, which occurred at the Royal Victoria Hospital, Montreal, on Sunday morning, November 8th, 1908. There are many sad hearts among the members of the Ottawa Field-Naturalists' Club, owing to the demise of him who has been styled its "Father". For the past three years his health had been gradually changing, and becoming undermined by intermittent hemorrhages resulting from a malignant tumour which caused his death. Four years ago, when, with the writer and some others, he was tobogganing near his home at the Experimental Farm, he met with an accident which confined him to his house for two months. Since then he often said that his health was not what it was before, and it may be that the trouble which brought his useful life to a close had its origin then. During the last year particularly he suffered much, at times, but his was not the nature to complain, and very few, even of his more intimate friends, really knew that his life was undergoing a serious change. The writer, who was constantly associated with him in the official work of the Division of Entomology and Botany knew what aches and pains he bore. Often, especially of late, as we were working together he would say that his head was thumping as if it would break, but it was only during such attacks towards the end of the afternoon that he would say he would have to stop and get away from the office.

On Thursday afternoon, October 29th, he left Ottawa for Montreal, to consult a specialist, saying that he would be back again on Saturday, or Monday. On November 1st the writer received a letter from him with regard to the annual meeting of the Entomological Society of Ontario, in which he said: "I find it is no use, I cannot get to the meeting. In fact, I only got here just in time. I shall probably not be back for another fortnight at least....." On the following day he wrote again saying: "I am very comfortable, everything so far is going well," and,

referring to the eggs of a rare butterfly which had been sent to him, he said: "The eggs of *Dorcas* are in my cellar in a black cardboard box, you had better get track of them." He asked me to acknowledge these eggs saying that he would write himself in a week or so. This was the last letter from him which we received at the Division.

It was decided soon after his arrival at the Royal Victoria Hospital that he would have to undergo an operation, but, owing to the serious nature of this, it was delayed from time to time, hoping that he would get stronger. This he did not do, however, and the operation had to be performed on Saturday, November 7th. Owing to his very weak condition, he failed to rally and died the next morning. During the whole time he was in the hospital he was very happy and had no fear whatever of the result of the operation. Even here he was looking forward to the near enjoyment of larger quarters for his Department, and of further help to carry on the important work about which he knew so much and which he did so well. The funeral was held on Tuesday, December 10th, from his residence at the Experimental Farm, to St. Barnabas' Church and thence to Beechwood Cemetery.

The Rev. Professor Bethune, in the *Canadian Entomologist*, December, 1908, has expressed our feelings so well when he says: "Few men ever made so many loving friends in all walks of life; every one who came to know him did not fail to become warmly attached to him. There are many sad hearts grieving at his loss all over the Dominion of Canada, and many too in widely scattered places in the United States. Old and young, rich or poor, learned or ignorant, children and their elders, it made no difference—he had a kindly word for each one, and most can treasure in their memories a kindly deed as well. When he addressed a meeting he captivated his audience at once, and when he joined an excursion of nature students all were eager to be with him, and learn from him some of the secrets of the woods and fields that he knew so well. We shall not see his like again, but we may all feel that it was good for us to have known him—his memory will long live in our hearts—his noble words and generous deeds will be happy recollections for many a year to come."

Dr. Fletcher was born at Ashe, in the County of Kent, England, on March 28th, 1852. He was educated at King's School, Rochester, and came to Canada in 1874 as a clerk in the Bank of British North America. Two years later he left the bank and became an assistant in the Library of Parliament, Ottawa. All his spare time he devoted to entomology and botany and soon became a recognised authority not only on these subjects but on other branches of natural history as well.

While he was continually busy with his official work, he yet found time for many other things. He was a loyal member of the Church of England and a generous supporter of all her works. He attended St. Barnabas' Church, of which, at the time of his death he was a warden. His special aptitude for teaching and his love of children made him an ideal Superintendent of the Sunday School, in Holy Trinity Church, Ottawa East. In this capacity he acted for over twenty years, seldom missing a Sunday when he was in Ottawa. He was an active and enthusiastic member of the Brotherhood of St. Andrew, a member of the Board of Governors of St. Luke's Hospital, and a member of the Rideau Club.

At a meeting of the Council of the Ottawa Field-Naturalists' Club, held on November 10th the following resolution of condolence was passed: "The members of the Council of the Ottawa Field-Naturalists' Club desire to place on record their profound sorrow and sense of deep personal loss in the death of Dr. James Fletcher, and to express their sincerest sympathy to his widow and family in their bereavement. Dr. Fletcher was one of the founders of the Ottawa Field-Naturalists' Club which is now nearly 30 years old. It is peculiarly sad that he, who was so often referred to as the 'Father' of the Club, should be the first member of the original council to be removed from our midst."

At this meeting it was decided to hold a Memorial Meeting in the large assembly hall of the Normal School.

ARTHUR GIBSON.

MEMORIAL MEETING

DECEMBER 1ST, 1908.

The President of the Club, Mr. A. E. Attwood, M.A., in asking Lieut.-Col. Wm. White, C.M.G., to act as Chairman for the meeting, spoke as follows:

Members of the Ottawa Field-Naturalists' Club and friends of the late Dr. Fletcher:—It has been a time-honoured custom of the Ottawa Field-Naturalists' Club to begin their series of winter soirées with an evening's programme somewhat informal in its nature. The sudden death of the member who was one of the founders of the Club has rendered it appropriate to make a change this year at our initial soirée. It is hoped, however, that in its informality, to-night's programme will resemble those of former years, and that many will feel free to speak a few words expressive of their regards of the late Dr. James Fletcher.

Speaking as a teacher, I naturally regard the work of an edu-

cationist, *ex-officio*, as the highest. Personally, I can testify that of all the non-professional educationists with whom I have associated during the past fifteen years, I owe the deepest debt of gratitude to Dr. Fletcher. I regarded him as almost indispensable to my development and I know that his death will be a genuine embarrassment in taking away a source of assistance and inspiration in my studies of nature. Such is my weak tribute to this very great man.

As the death of Dr. Fletcher marks the first break among the members of the original Council of the Club, organized nearly thirty years ago, it was deemed appropriate that the first President of the Club, Lieut.-Col. Wm. White, should preside at this meeting held in honour of the memory of a leading member of the original Council. I shall therefore ask Lieut.-Col. White to take the chair.

Lieut.-Col. White on taking the chair, said:—We are assembled this evening for the purpose of paying tribute to one of our earliest members, a well-loved companion and friend of every one of us; a man who was preeminently qualified for the position he held.

We have lost a dear friend and the country has lost a valued servant—whose name is a household word in the homes of the agriculturists of the Dominion. There are here this evening many members who of late years have been more closely associated with Dr. Fletcher, than I have been, owing to advancing age, and therefore without further words from myself, I shall call on several members of the Club to address you this evening, commencing with Dr. Saunders, Director of the Dominion Experimental Farms.

DR. FLETCHER'S WORK, ITS INFLUENCE ON CANADIAN AGRICULTURE.

BY DR. W. SAUNDERS

In this meeting called to honour the memory of our esteemed friend and fellow worker the late Dr. James Fletcher it is my privilege to say a few words on the bearing of his work on the advancement of agriculture. Prior to the organization of the Dominion Experimental Farms, Dr. Fletcher acted as Dominion Entomologist to the Department of Agriculture, a title conferred on him in 1884, and, in this capacity, he published two reports. His first report was published in 1884, and a second in 1885. These reports dealt chiefly with injurious insects, and they had a considerable circulation. At that time he was also serving the

country in the capacity of Accountant in the Library of Parliament.

On July 1st, 1887, Dr. Fletcher was appointed Entomologist and Botanist to the Dominion Experimental Farms and was transferred from the Library of Parliament to the Staff of the Farms. He was thus enabled to devote himself entirely to natural history and his work became the great pleasure of his life. For 21 years I was intimately associated with him from day to day and watched the development of his work with great interest. In his capacity of Dominion Entomologist he studied with much assiduity the many problems which presented themselves in reference to insect life, such as the life-histories of many insect pests which prey on the crops of the farmer and by their depredations often materially lessen his profits. He also studied closely the life-history and habits of the many parasitic species which feed upon and destroy the farmers' enemies, and thus render very substantial service. He also experimented with the means proposed for the destruction of the injurious species. The Entomological Division also prepared collections of both injurious and friendly species, showing them in all the different stages of their growth.

As Botanist he studied the value, as fodder plants, of such species of grasses and clovers as can be grown successfully in the different parts of the Dominion. He ascertained their relative value for the production of hay and recommended the most promising of them for general cultivation. These fodder plants were grown in plots adjoining the hedges at the Central Experimental Farm, where they could be conveniently shown to visitors and their advantages explained. He also studied the subjects of smut, rust and other parasitic fungi, especially such as are injurious to our valuable grain crops. He also devoted much attention to another class of enemies with which the farmer must wage war if he is to be successful. I refer to the weeds which infest his crops. These, if allowed to multiply, crowd out the useful plants he is growing, rob them of the moisture they need, also of much of the fertilizing material in the soil which would otherwise contribute to their nutriment.

In both these divisions of Dr. Fletcher's work the field was practically unlimited and in preparing his annual reports from the large mass of material available, the chief difficulty was to select the best and most useful. It was Dr. Fletcher's habit from the outset to endeavour to place his observations and conclusions before the public in the plainest possible language. On this point in one of his earliest reports he says: "In preparing the present report I have endeavored to make it useful to the agriculturist, all unnecessary technicalities have been eliminated, and only

such* information has been included as I deemed would be useful."

His first report after his appointment on the Farm Staff, that for 1887, may be considered in its general usefulness and the variety of important topics discussed as typical of the series. This begins with an important article on the insects injurious to cereal crops, in which those affecting wheat claim first attention, followed by other injurious species affecting other valuable cereals. Insects affecting hay and clover are next considered, where the so-called Army Worm *Leucania unipuncta*, a species early regarded as a formidable antagonist, is dealt with, also the Clover Seed Midge which some seasons destroys a large part of the crop of clover seed. The worst pests which affect roots, potatoes and other vegetables are also described and remedies for their destruction referred to. The Codling Moth and the Tent Caterpillar, so injurious to the apple crop, also insects which are destructive to the grape, raspberry, currant and strawberry are all dealt with and, in the closing chapter, some of the worst insects affecting forest trees.

This brief enumeration of the subjects discussed gives one some idea of the scope of the work undertaken, and the presentation of each subject was so clear and practical as to arrest the attention of those looking for information, and if only a small percentage of the usual annual loss was saved by adopting the remedies recommended, the addition thus made to the farmers' profits must have been quite considerable.

Up to the spring of 1895, Dr. Fletcher had charge of the Arboretum and Botanic Garden at the Central Experimental Farm, and under his management good progress was made, but finding that his many other duties prevented him from giving the necessary time to this work, at his request Mr. W. T. Macoun was made Curator of this important branch of the service.

The twenty-one annual reports which were written by Dr. Fletcher, together with the excellent cuts by which the text was illustrated, have been of great value to the farmers of Canada by instructing them how to recognize their insect enemies, also their insect friends. Full instructions were given from year to year as to the most reliable and practical measures to adopt for the destruction of the more injurious species treated of.

He also waged a constant warfare against weeds, and his reports and bulletins on this subject are very valuable and are highly appreciated and followed by many of the most intelligent farmers throughout the Dominion. Bulletin No. 28 of the Farm series on "Weeds" was written by Dr. Fletcher, in which 164 troublesome plants are mentioned and the best way of fighting them. Dr. Fletcher also prepared that beautifully illustrated

work on "Farm Weeds of Canada" which, although published by the Seed Branch was written by Dr. Fletcher, who also supervised the preparation of the coloured plates, the work of Mr. Norman Criddle. Other botanical subjects were treated of in Bulletin 3 of the Experimental Farm series on "Smuts affecting Wheat," No. 19 on "Grasses", No. 23 on "Fungous Diseases affecting Plants;" No. 46 on "Alfalfa, or Lucerne."

The entomological subjects treated of in bulletin form, and written by him entirely or in part, were No. 11 on "Some Common Insects of the Farm, Orchard and Garden;" No. 14 on "The Horn Fly;" No. 37 on "Apple Insects;" and No. 43 on "Plum Insects." His last bulletin was No. 52, "Insects Injurious to Grain and Fodder Crops, Root Crops and Vegetables," in which 45 of the worst enemies of crops are dealt with. From his busy pen there appeared also from time to time several smaller bulletins, also numerous letters to agricultural and other papers giving accounts of the occurrence of insect pests in various parts of the Dominion and the best methods to adopt for their destruction.

For many years past, Dr. Fletcher was invited from time to time to give evidence before the Select Committee on Agriculture appointed by the House of Commons. On these occasions he dwelt on some of the most important occurrences of insects injurious to crops and the best methods of fighting them. His work in connection with grasses and other fodder plants was frequently referred to with many other subjects covered by the work of his Division.

During the past 21 years Dr. Fletcher carried on a large correspondence with farmers in almost every part of the Dominion. He also attended farmers' meetings in all the different provinces, where, in his addresses on various topics, he conveyed in a pleasant and forceful manner and in his own genial way much valuable information to his hearers. His influence was always exerted for good. He was happy in his work and in the consciousness that through his efforts the condition of the farmer and fruit grower was being improved and their employment made more remunerative.

In his position as Entomologist he was entrusted with the management of the federal fumigation stations, at Vancouver, B.C.; Winnipeg, Man.; Windsor, Ont.; Niagara Falls, Ont.; St. John's, Que., and St. John, N.B. At these points arrangements are made for fumigating plants, trees, and nursery stock generally, under the San José Scale Act to prevent any further introduction of that terrible pest. During the past two years, there was added to Dr. Fletcher's already very onerous duties the supervision of the spraying of orchards in the Indian reserva-

tions in British Columbia, to prevent them from becoming distributing points for injurious insects.

Dr. Fletcher was exceedingly kind and generous to young students, both in entomology and botany, freely giving them much of his valuable time in naming their specimens, and otherwise encouraging them in their work. His was a busy life and the good work he has done, especially in his efforts to further the interests of agriculture, will furnish a lasting memorial of his energy and industry, which will continue to live in the memories of those who have profited under his instruction. to the end of their days.

REMINISCENCES OF DR. FLETCHER.

By W. Hague Harrington.

The members and friends of the Ottawa Field-Naturalists' Club have assembled this evening, to testify to their deep sorrow for the untimely death of their esteemed and beloved friend and leader, and to express their great appreciation of the work which he so zealously and continuously carried on for the advancement of the Club and of scientific research in general. I have been invited to contribute some "Reminiscences of Dr. Fletcher," and am duly grateful for the opportunity to share in this tribute to his memory, though fully aware of my inability to do justice to the theme. Some are present who were his friends and fellow-workers from the inception of the Club, and to these there will be little new, but some who were more recently associated with him may be interested in a brief review of the earlier years of our fellowship. My chief qualification for this retrospect is that, almost from his arrival in Ottawa, I was privileged to enjoy his friendship and to have some share, not only in his scientific and public pursuits, but also in his more personal and private life.

During the past weeks, amid the duties of the day, or during the silent watches of the night, memories of my genial and gifted comrade have thronged upon me. Many of them are too unimportant to record and some seem too sacred for publicity, but even from the remainder there is difficulty in making a selection which will not be too long in the recital. The intercourse of three decades, with one of so varied attainments and interests, is not readily condensed into a ten-minute address, and the indulgence of my hearers must be besought in advance for overstepping that time.

To the companions of those fair early years, so pregnant with life and action, the death of our friend and leader comes as a

sharp reminder of the rapid flight of time and the fast approaching rest from labour.

“Already on our heads the years have spent
Their silver rime. How far the day is spent!
How soon the evening and the low green tent!

The low green tent! Nay, yonder azure dome,
Where myriad, myriad worlds unjostling roam,
Is none too wide if God shall make it Home.”

Fletcher had joined the staff of the Bank of British North America in London, on the 19th of April, 1871, and had been sent in April, 1874, to Canada where he was first stationed in Montreal. He was transferred to the Ottawa office on the 22nd of April, 1875, and my acquaintance with him began during that summer. He was then a handsome young man, in his twenty-fourth year (just three weeks my senior), endowed with unusual physical and mental vigor, and his strong vitality and genial nature made him a great favorite with his companions and rapidly enlarged his circle of friends.

Naturally, he speedily became prominent both in athletic and intellectual affairs, and as it was mainly in canoeing and other out door sports that we were first associated, they will be first touched upon. With the advent of the winter, which was one of abundant snowfall, the Ottawa Snow Shoe Club was organized, of which he was for some time captain, and merry tramps were weekly taken to outlying points, such as Billings' Bridge, etc. Survivors of those days will recall the tramp which was taken to Templeton, or as it was then called Gill's Wharf, on the 3rd of Feb., 1876. Snow was falling when he led the company of a score or so from the Parliament Square down to the river, and it was still snowing when, after a good supper and jolly evening, the return tramp was started about midnight. Several inches of snow had obliterated the trail and had made the going so heavy that some of the weaker brethren, without his frequent aid, might have been all night on the ice and have slept in the snow. When the tired party reached their welcome homes it was well on toward morning. Later, as referee, I witnessed a snow-shoe race which he had with Orde, one of his companions, from the old Suspension Bridge to Aylmer and back, and which was enlivened by two serious runaways started by the blanketed runners. Horses in those days seemed to bolt on slight provocation, but fortunately no one was injured, although sleighs and harness were broken. He was also fond of tobogganing and skating and often formed one of the gliding crowd in the old rink that stood on Slater St., not far from the present Arena.

During the summer there were frequent enjoyable week-end

camping trips up the Rideau or down the Ottawa, which afforded him opportunities for botanizing and especially for the collection of water plants. One such visit to McLaren's Bay is specially remembered by the following incidents. While transporting our canoe across the dilapidated tramway which ran from the river to the bay, he stepped on the loose end of a plank and dropped through to his armpits, being severely shaken and also receiving a blow on the head from the other end of the board. Then when we had launched our craft, it was necessary to cross a boom to reach our camping ground. We hauled the canoe over safely, and he had just got in, when the boom-log on which I was still standing rolled over and, to avoid upsetting the canoe and losing our guns, I had to jump into the water which was unpleasantly cool. However, we were soon snug in camp and suffered no ill results of our accidents.

In the autumn he was one of the organizers of the Ottawa Football Club and his sturdy form, in black and red stripes, was a pillar of strength in the scrimmages of that first memorable match, in which we over-whelmingly defeated and discomfited the then champion Brittanias, of Montreal. There is also a well-remembered paper-chase from Cartier Square, through the fields of the By estate, Stewart's Bush and Mt. Sherwood, across the Dam and what is now the Farm Arboretum, thence by the Locks and across the Rideau and so round by Billings Bridge and back of Archville to the starting place.

In May, 1876, he left the Bank to accept a more congenial position in the Library of Parliament, under his friend the late learned Dr. Todd, for whom he had the deepest esteem and friendship. Here he had ample facilities for prosecuting his studies in botany and entomology, in both of which sciences he was already well versed. The library was then more accessible to students than it has been of later years, as the hours were longer and less restrictions were imposed. Many pleasant and profitable hours did we spend there together, in the examination and study of valuable works of reference.

Fletcher had early found out the few botanists and other naturalists then living in Ottawa, and was energetically collecting and urging others to do likewise. Prior to my acquaintance with him, my attention had never been directed to any special branch of science, or research. A Rambler in the woods and on the waters I had been from boyhood, but now under his magnetic influence Nature assumed new charms and interests, and my future life was thereby broadened and brightened, as have been the lives of so many others with whom he came in contact. Any progress which I may since have made in natural history, and any work which I may have accomplished therein are due chiefly to his

stimulation and to his continued assistance and encouragement.

Before referring to a few of the scientific bodies with which he was connected, mention may be made of a modest literary circle, whose somewhat formidable name of the Ottawa Mutual Research Society, has well-nigh fallen into oblivion. I do not know whether he was the founder of the society, but he was at least the permanent secretary and only officer. The club was limited to twelve members, each of whom in turn acted as chairman and host and proposed a subject for an essay, or set not less than four questions for examination. The resulting papers were read and keenly discussed and sharply criticized at the monthly meetings, and the society was thus an excellent training school for matriculation into other societies. The papers, often of considerable value, were not published, but a formidable pile of manuscripts gradually accumulated in the possession of the secretary. The society lasted for several years with more or less change of membership, but gradually the few earlier members who had been its backbone found their time absorbed by increasing cares and responsibilities and the club was allowed to lapse, though not without much regret on their part.

Fletcher had early joined the Entomological Society of Ontario, and in Sept. 1877 was elected a member of the Council and rapidly took a prominent position thereon. Always an ardent supporter of the society, he did yeoman's service in maintaining and increasing its efficiency and value. Two years later, largely through his influence, the honour of election to the Council was also conferred upon me and we jointly attended for many years the annual meetings of the society.

On the 14th of Oct., 1897, as we were returning from one of these meetings, we had the unpleasant experience of a head-on collision, between Stittsville and Ottawa, which caused a bad wreck. He was deeply moved at the loss of life which occurred and showed much sympathy for the wounded, and aided and cheered the survivors during the delay of some hours and in the transfer, through a boggy woodland lot, to the new train sent out from Ottawa.

He was elected President of the society in 1886 and held office for three years, and was again President for the two years previous to his death, a few days before which he had been re-elected for the sixth time. As his entomological work is to be treated of separately, I shall only mention his first paper, which appeared in the annual report of the society for 1878, under the title "An Outline Sketch of the Canadian Buprestidæ." This was a valuable contribution to the report, and I well remember the great care taken by him in its preparation. His subsequent yearly contri-

butions to the reports and to the Canadian Entomologist, including presidential addresses, were numerous and varied, and testify to his great ability and industry.

We became members of the Ottawa Literary and Scientific Society in November 1877, and in the following April he was elected Curator, an office which he held for six years, when pressure of other duties obliged him to resign from the Council, although he continued his membership long after his residence at the Farm made it impossible for him to visit the rooms, or avail himself of the advantages of the society. In 1879 he took part in a conversazione which discussed the value of a classical education and read a paper on the affirmative, and he always held and expressed the view that a knowledge of greek and latin was of very great advantage, especially to scientific students.

In May 1878, in company with Mr. T. V. Macdonald (Bank of B.N.A.) and Mr. Rinfret (Quebec Bank), we occupied a house on the hill beyond Billings' Bridge, where a most delightful summer was passed, all too rapidly. Macdonald, to his deep regret, was soon transferred to Montreal, but his place was taken later by the Rev. Mr. Patton. Here we pursued our entomological and botanical studies, and led by no means an idle or unprofitable life. Usually we had to walk to and from the city, but the road was then less monotonous for nature-lovers than it is now.

The city extended not much beyond Maria St. and thence Bank St. was but a country highway. Where the McLeod St. church now stands we had to pay toll for the transport of our chattels, while westward stretched a rich collecting ground known as Stewart's Bush, through which we often strayed on our homeward way. Grouse and other game were still not uncommon in the thick coverts and swampy glades, and both the fauna and flora were unusually varied. Patterson's Creek was a pleasant stretch of water, and in our canoe we could paddle under the Bank St. bridge to a brook which entered some distance above. Beyond the creek a high board fence enclosed the race track on the Glebe, within which was a swamp with many plants which can now be only obtained far from the city. On the roadside, near the creek, was the old twin pine, a prominent landmark, in whose shade we frequently rested.

Fletcher was indefatigable in his botanizing and the results of his labours then and in the adjoining years appeared in his *Flora Ottawaensis* of 1879-1880. It might truly be said that:—

“Oft have we seen him at the peep of dawn

Brushing with hasty feet the dew away.”

After two or three hours along the river, or through the fields and woods, gathering plants, hunting insects, listening to the morning melodies of the birds and examining their nests, and pok-

ing and prying generally around in swamps and thickets, we would hurry off to breakfast with his big collecting box, known as the "bath," filled with the spoils. In the afternoon there was more collecting, and the evenings were spent in preparing and mounting specimens, and in the capture of any insects which might be attracted to our lights, set on a balcony and backed by a white sheet. There was little time for idle hands, but after dinner on fine days we might recline on the sward to smoke and chat with our housemates, and play with a fifth member of our establishment, namely Joe Fox, who often accompanied us on our evening rambles through the fields. He was full of graceful and amusing antics, delighting to gamble with the dogs, but his fondness for chickens threatened to make him very dear to us. On our return to the city I gave him to Fletcher, but after some amusing episodes he escaped and reverted to the life of the wild.

During this year (1878) Fletcher and a few kindred spirits often discussed the possibility and necessity of reviving in Ottawa the scientific researches which had existed in earlier years, and these discussions eventually led to the founding, in March 1879, of the Ottawa Field-Naturalists' Club for "the study of the natural history of this locality." Although he more than once publicly stated that the idea of the club may be said to have originated with Mr. R. B. Whyte, he was the central and moving figure in its organization, and to his sustained exertions during the many years in which he occupied various positions on the Council is largely due the progress and high standing achieved by the Club. He had ever its interests at heart and in the midst of multifarious duties, which made excessive demands upon his time and strength, he was ever ready to undertake some new service on its behalf.

As a botanist and entomologist, he realized the intimate relations which exist between plants and insects, and recognized the serious loss occasioned by the depredations of injurious insects upon the products of garden, farm and orchard. Foreseeing that, with the inevitable rapid extension of agriculture through the varied soils and climates of our widespread Dominion, and the unavoidable introduction of insects pests from abroad, the loss would be enormously increased, he devoted himself to the practical and economic aspects of his favorite studies, and vigorously began that campaign for the institution of investigations and for the dissemination of information, which occupied him for the remainder of his life. He was much pleased when, as the entering of the wedge, he was in June 1884 appointed Entomologist to the Department of Agriculture, and at the close of the year was enabled to publish a preliminary report of seven pages, which

was the forerunner of many publications of the greatest value to our agricultural communities.

Before the Committees on Agriculture, of the House of Commons, and in every direction whence assistance might be expected, he agitated and pressed for the establishment of permanent experiment stations equipped with a staff qualified to undertake and maintain the work, which to him seemed so imperatively demanded in the best interests of the community. It was therefore a great triumph and cause of joy for him, when the Experimental Farms were established, and he received the position of Entomologist and Botanist which he so successfully occupied for more than twenty-one years, making for himself a world-wide reputation as a leader in such work.

Thorough and painstaking in his investigations, though hampered always by inadequate quarters and insufficient assistance, he had also the ability to present the results in an attractive and simple manner. His position required him yearly to make extensive journeys throughout the Dominion and to address audiences of very varied aims and capacities. He also frequently lectured before learned societies, and delivered addresses to schools and organizations of divers kinds, and having been present on many such occasions I can testify that he invariably charmed his hearers by the simple, yet graphic presentation of his subject combined with his fine voice, his pleasing presence and his genial manner.

It is unnecessary to dwell upon the value of his official work, but a quotation may be made from an important address delivered by Dr. Howard, as President of the Association of Economic Entomologists in 1894. "Mr. Fletcher," he said, "has shown himself to be a man of extraordinary energy, a most entertaining writer and a most careful observer and one who has always kept the practical part of his work foremost in view. He has paid a great deal of attention to a side of his work which is neglected by many of our own official entomologists, namely, personal intercourse with farmers, frequent talks on injurious insects at farmers' institutes, etc., and has in this way built up a very large clientele among the most intelligent agriculturists in the Dominion."

Soon after the foundation of the Royal Society of Canada he was elected a fellow of Section IV, of which he was later President. He was an active worker for the society, holding for some time the Treasurership and then the laborious and responsible office of Hon. Secretary. He was also a member of, and held office in, several other scientific bodies, whose work we frequently discussed together, but which cannot be further referred to at present.



After his marriage in 1879, Fletcher resided for some years on Metcalfe St., within a stone's throw of the Stewart homestead, where now stands the stately museum building for whose erection he was so long and earnest an advocate. An orchard then blocked the street citywards, across which right of way was prohibited, but there were generally holes in the fences for those making a short cut. That section of the city was principally pastures, and in 1886, or later, I could still put on my snowshoes at my door on Gilmour St., and go straight across the fields for a tramp with him to some of our favorite haunts; now leveled into uniform monotony, and quartered in blocks of city dwellings.

His family life was an ideal one, where love and happiness were always in the ascendant and never have I known any happier hours than many which were spent at his cheerful fireside. Later, when he went to reside at the Farm, it was still my privilege to be his frequent guest and to pass with him many pleasant afternoons and evenings. When the weather was suitable we rambled or paddled about examining and collecting the products of land and water. In summer there were many charming little picnics on the banks of the Rideau, where above the rippling music of the rapids, or by placid reaches lily-starred, we found quiet enjoyment and surcease from care until the vesper songs of bird were hushed, the roseate glories of the West grown dim, and

"The warders of God's tent had lit the lamps
That men call stars."

During the winter he resided in the city, but on Saturdays, unless he was absent, or had some special engagement, it was my custom to go to the Farm and spend the afternoon with him. After a short snowshoe tramp through Dow's Swamp, across to the Rideau, or around the Arboretum and Forest Belts, or perhaps some slides on the toboggan, if there were young folk present, we would cook our supper, as if out camping, and then after a smoke and pleasant chat, would spend an hour or so in his office, examining insects, reading proofs, or other work, before walking home.

Our rambles and excursions during the many years of our joint interest in entomology, etc., covered all the immediate vicinity, and frequently extended to more distant points, such as the Mer Bleue, Casselman, Buckingham, Thurso, etc. A brief, but enjoyable, trip was taken in June 1892 to Copper Cliff, to visit a fellow-entomologist, Mr. J. D. Evans, then manager of the copper and nickle mines. Fletcher went largely in the hope of capturing *Erebia discoidalis*, a rare butterfly which had been taken by Mr. Evans three years previously. We arrived at 5 a.m. and to lose no time collected for a couple of hours before calling upon our host, who afterwards took us to the locality where he

had found the butterfly. No specimens could be found, but of other insects we obtained about 275 species, including some of considerable rarity and interest.

Our last outing was in September last when we paddled up the Gatineau and around the booms to the entrance of Leamy's Lake, where he desired to collect some water lilies. Owing to the extreme low water we found that there was quite a carry to get into the lake, and that it would be difficult to reach the lily bed, and as the day was exceedingly smoky and sultry and the sun low we decided to paddle back.

A few days previously we spent, with Mr. Groh, an afternoon paddling about the canal collecting water plants, and he was delighted to discover quite a large patch of the rare *Bidens Beckii* and also to find that the wild rice, which I had seen him sow two years before, seemed to be well established.

The briefest outing with him was invariably interesting, as his knowledge was so extensive and his faculty of observation so trained that there was ever something upon which new light could be given, or which could furnish material for future study. His intimate knowledge of large sections of the Dominion, and his extended acquaintance with scientists and other prominent persons, combined with his remarkable memory and unfailing brightness and geniality, made him a most charming and entertaining companion, either at home or abroad. He was a friend whom I can never replace, and whose loss will be felt afresh whenever the scenes of our outings are visited.

My last evening with him was that of the 14th of September, a day or so before he started on his last trip West. He was busy in his garden watering his flowers until it was too dark to continue, for so he spent many evenings among the beautiful and fragrant plants which he loved, and which afforded him such sustained and genuine pleasure. The task of planting and tending them was with him a labour of love, and not merely performed for the utilitarian or decorative effects which might result. His profound love of nature in all her moods and forms was in no respect more evident than in the patient and skilful gardening from which he derived such undoubted pleasure. Just before we said goodbye he gave me directions where to find a certain water weed which my collection lacked, for he had such an intimate knowledge of the habitat of our plants, and such a retentive memory that he could describe the exact locality in which any rare species had occurred, even if many years previously.

Any memories of my friend would be incomplete, if no mention were made of the deeply religious side of his character. Scientists and other public men not infrequently allow themselves to become engrossed and interested solely in material

matters, but he was also uniformly and consistently occupied with spiritual affairs. As a loving adherent of the Anglican Church, he gave to her interests an unbroken support and the same unflinching attention that all his duties received, and was ever a regular and devout attendant at its services. During our earlier companionship we attended for some time the St. James' Church in Hull, (since burnt) the rector of which was the late Canon Johnson, whose kindly words and actions endeared him to all his parishioners.

Fletcher was not content to be merely a church-goer, but as a lay-reader he took the service whenever necessary in several of the suburban and rural churches. At Billings' Bridge and Ottawa East I have on various occasions listened to services which gained an added beauty from his clear-voiced and sympathetic reading. He was also for many years Superintendent of the Sunday school at Ottawa East and took a great interest in the welfare of the school and of its attendants. Often on Sundays I went to meet him when the school closed, in order to walk home with him, and usually found him the centre of a group of smiling children, for with them he ever was on the most friendly terms and they loved him for his many acts of kindness and his unflinching geniality and sympathy. They, as well as their parents and teachers, have deep reason to grieve for the noble Christian man who was so long their trusted friend and helper, whose hand and heart were so open to all who had need of assistance or sympathy.

No words of mine can give more than a faint idea of his real worth and character, but fortunately these are already widely known. He was truly a lovable man, one of those superior natures whose mental and moral attributes rapidly distinguish them as leaders of thought and action, whose kindly words and generous deeds cause them to be esteemed and beloved by all who come in contact with them. Faithfully and zealously he laboured early and late, with all his forces, to advance the welfare, not only of the agricultural classes, but of all sections of our fellow-citizens. Year by year the seed was sown, often in stony and unprofitable ground, but ever with some increase in the garnered harvest. Others will take up the work he initiated and organized, and their way will be smoother and easier by reason of his unselfish and unremitting toil and watching.

The members of the Ottawa Field-Naturalists' Club may continue to show their esteem and affection for our departed friend and leader, and to honour his memory, by steadfastly striving to maintain and advance the investigations and studies to which he so ardently and successfully devoted his great abilities.

DR. FLETCHER AS A BOTANIST.

By R. B. Whyte.

One day, thirty-two years ago, when struggling alone with the many difficulties which beset a student of botany, I heard with more than passing interest of a young man employed in the Library of Parliament who was making a study of botany. With little delay after hearing of that student of nature I sought him out and made myself known to him. Little did I think then that I was making the acquaintance of one who through so many years was to prove a true, sympathetic and loyal friend. That young man was James Fletcher.

A few months after I had first met him, when discussing the difficulties of studying alone, the idea occurred of having a place where we could meet others similarly interested. The suggestion was carried out, and thus originated the Ottawa Field-Naturalists' Club.

Those of you who have of recent years become members of the Club have no conception of how indefatigable and self-sacrificing he was in his efforts to maintain the Club—no labour was too hard, nor any effort too great if it was for the benefit of the Club in those early days. As an instance of his sincerity of purpose, I recall many, many times that he delivered with his own hands the notices of the Council meetings in order to save the Club the expense of postage.

One of his first works after we were in a position to publish a record of our researches, was to compile a list of all the plants that had been found in the Ottawa district. This list appeared in the first number of the Club's Transactions. The list was added to in subsequent years and finally published as "Flora Ottawaensis." His great regret was that his official duties prevented him from finishing that work.

As a companion and co-worker he was ever ready to help and encourage, and no trouble was too great to help any one in studies or with information. By correspondence and through the press, by addresses and lectures at the educational institutions in the City and at the Field-Naturalists' Club's meetings he unceasingly endeavoured to impart information, and to his great efforts are we indebted for the undoubted high plane of botanical knowledge in the City of Ottawa to-day. I have always claimed, and I do not think the claim extravagant, that there is no City in the Dominion where the general knowledge of plant life is so high as it is in Ottawa.

Great as have been the results of his work in increasing our knowledge of plants, his best work has been in economic botany. For many years he travelled all over the continent addressing

meetings of farmers and farmers' institutes and has probably addressed more people than any other public man in Canada and imparted to them information of economic value which must have been of immense benefit.

The culmination of his work in economic botany is the Weed Book, published in 1906 in conjunction with the Seed Division of the Department of Agriculture, Ottawa.

Not only as an entomologist and botanist has he been of great assistance and influence, but also as a horticulturist. Throughout the Dominion of Canada the horticultural societies have known him for many years as advisor and educator. At the Convention of Horticultural Societies held in Toronto recently which I attended, many were the expressions of sincere regret at the great loss the horticultural societies had sustained by the death of one whom they spoke of not as a public official, but as a personal friend.

The life of Dr. Fletcher was a standing example to young men. While a clerk in the Parliament Library he utilized every spare moment in studying or seeking information, and after office hours he did not waste his time in idling about the streets. Early and late he was to be found studying Nature and, when in later years, the Government decided to establish the Dominion Experimental Farms, he was the one man in Canada equipped with the necessary knowledge to fill the important and responsible position of Dominion Entomologist and Botanist.

Finally, considering the great debt that the Ottawa Field-Naturalists' Club owes to Dr. Fletcher, I think it is our privilege to take the lead in commemorating the work he has done, and in talking the matter over with some friends and members of the Club, the unanimous opinion is that in no way could we do it more appropriately than by erecting a drinking fountain at the Central Experimental Farm, where so many of the best years of his life were spent.

DR. FLETCHER AS AN ENTOMOLOGIST.

BY ARTHUR GIBSON.

I am very glad indeed of this opportunity of saying a few words of one with whom it was my happy lot to be closely associated, for nearly ten years, in the official Government work of practical entomology. It is not necessary for me to say that Dr. James Fletcher was a great entomologist. This fact is widely known, not only in Canada and the United States, but even throughout the whole world. It is the people of Canada, however, who will chiefly miss his kindly help, always so cheerfully

given. To Canadian students of insects, his untimely death is a terrible blow, and entomology generally has lost one of its most accomplished exponents. Early in life Dr. Fletcher had a keen love for insects and their ways, and before he came to Canada he was familiar with the butterflies and other insects of his native land. He made a special study, however, of those kinds which are injurious or beneficial, and never lost an opportunity to add to his knowledge of these creatures, which play such an important part in the welfare of mankind. Not a few Canadians have done splendid work in entomology, from the continued encouragement and help which they received from him.

From a purely scientific standpoint Dr. Fletcher did splendid work among the diurnal lepidoptera. For many years he was intensely interested in Canadian butterflies and through his studies was recognised as a high authority on these insects by American entomologists. He was not only a student of the perfect forms of butterflies, but was deeply concerned in finding out their true life-histories. Many a long trip from Ottawa was taken by him to get the eggs of a rare species, in order that the various stages of the insect might be studied. During these collecting trips, too, many new species were discovered. If we glance through the lists of North American insects, we find that quite a number of species were named in his honour. The following is a list of the insects to which the name of Fletcher has been given:—

- Cryptus fletcheri* Provancher: Additions Faune Hymenopterologique, 1886, Vol. II, p. 361. (= *Comsocryptus calipaterus* Say).
- Xylomiges fletcheri* Grote: Canadian Entomologist, 1888, Vol. XX, p. 130. (*Xylomiges patalis* Grote).
- Coleophora fletcherella* Fernald: Canadian Entomologist, 1892, Vol. XXIV, p. 122.
- Cratæpus fletcheri* Ashmead: Canadian Entomologist, 1892, Vol. XXIV, p. 309.
- Lecanium fletcheri* Cockerell: Canadian Entomologist, 1893, Vol. XXV, p. 221.
- Trogus fletcheri* Harrington: Canadian Entomologist, 1894, Vol. XXVI, p. 245.
- Coccophagus fletcheri* Howard: Bulletin No. 7, New Series, Division of Entomology, U. S. Dept. Agr., 1897, p. 63.
- Papilio turnus* L., var. *fletcheri* Kemp: Entomological News, 1900, p. 481.
- Culex fletcheri* Coquillett: Proceedings of the United States National Museum, Vol. XXV, 1902, p. 84.

- Catocala unijuga* Walker, var. *fletcheri* Beutenmuller: Bulletin of the American Museum of Natural History, 1903, Vol. XIX, p. 509.
- Xylina fletcheri* Smith: Psyche, 1904, Vol. XI, p. 56.
- Enarmonia fletcherana* Kearfott: Canadian Entomologist, 1907, Vol. XXXIX, p. 127.
- Brephos fletcheri* Smith: Canadian Entomologist, 1907, Vol. XXXIX, p. 370.
- Platyclus fletcheri* Caudell: Proc. U.S.N.M., Vol. XXXII, 1907, p. 403. (= *Idionotus brevipes* Caudell).
- Eupithecia fletcherata* Taylor: Ottawa Naturalist, 1907, p. 200.
- Lithocolletis fletcherella* Braun: Transactions of the American Entomological Society, 1908, Vol. XXXIV, Oct., p. 338.
- Psilocorsis fletcherella* Gibson: Ottawa Naturalist, Jan. 1909.

Speaking more particularly of his work in economic, or practical, entomology which occupied the best of his time and labour for at least 25 years, he has truly left behind him a vast store of knowledge in the annual reports which he presented to the people of Canada in the large yearly reports published by the Dominion Experimental Farms, in the special bulletins which he prepared, and in the almost yearly Evidence which he gave before the Standing Committee on Agriculture and Colonization of the House of Commons, all of which have already been referred to by Dr. Saunders. In all of these publications valuable information on insects injurious or beneficial to agriculturists, horticulturists and others, is given in the most accurate manner, with the remedies which have been found most useful for those kinds which are destructive to crops, etc.

Of the many injurious insects upon which he did original research work, brief mention may be made of the following.

The Mediterranean Flour Moth, which first appeared in Canada in 1889: its life-history was worked out and the advantage of freezing the insects by opening the mills to the cold of winter was pointed out, among other remedies.

The Cigar Case-bearer of the apple was first treated of in his annual report for 1891, and further original observations are to be found recorded in his report for 1894.

The Hop Vine Borer did much harm in Ontario hop fields in 1892. The habits of the insect were studied and published. The same year new facts were learned regarding the life-history of the Red Turnip Beetle, which every year does some damage to cruciferous crops in the Prairie Provinces.

The Pea Moth claimed special attention in 1894, and a lengthy article was published in his annual report for that year.

The Peach Bark-borer was also studied the same year and new facts recorded regarding the life-history.

In 1895 the Joint-worm which attacks wheat was investigated, and valuable information was obtained on the habits of this enemy of this important cereal. The Cottony Grass Scale was also studied the same year, as was also the New York Plum Scale.

Mention of the Wheat-stem Maggot in Canada first appeared in his 1896 report when an outbreak which occurred in the Northwest was studied. The same year the first record of the Apple Maggot in Canada was made.

In 1897 much study was given to the San José Scale, which had gained a firm foothold in certain of the western counties of Ontario. A lengthy article appears in his report for that year.

The Rocky Mountain Locust was given special study in 1898 when the insect did much damage in southern Manitoba.

The Hessian Fly wrought serious injury in the fall wheat fields of Ontario, and the spring wheat fields of Manitoba in 1899, and called for special investigation. The same year the Destructive Pea Aphis made its first appearance in Canada, as did also the Asparagus Beetles.

The Greenhouse Leaf-tyer was also studied in 1899 and 1900 and the life-history has since been published.

One of the most remarkable outbreaks of an injurious insect which has ever been recorded in Canada occurred in 1900, when the Variegated Cutworm appeared in British Columbia. Original notes on the life-history appear in his annual report for that year, as also on the Spotted Cutworm which did much damage in Ontario.

In 1901 original observations on the life-history of the Variegated Cutworm were published and a more complete article describing in detail the various larval stages appeared in the Canadian Entomologist for November, 1902. Notes are also given in his 1901 report on *Semiophora youngii*, a new enemy of conifers.

The Sugar Beet Webworm was studied in 1903 owing to the damage it did in Manitoba. Attention was also given to the White-marked Tussock Moth, which has done so much harm to shade trees in many Canadian cities.

During 1905 another new pest made its appearance in eastern Canada in destructive numbers and the common name, "The Spined Rustic" was given to it by Dr. Fletcher. The full life-history was worked out and published.

The first Canadian nests containing caterpillars of the Brown-tail Moth were received by Dr. Fletcher in 1906, and during the summer the insect was studied at the Central Experimental Farm, and a lengthy article on it was prepared and pub-

lished in his annual report, as well as in several agricultural papers.

The same year and in 1907 the Rose Chafer caused enormous losses in vineyards in the Niagara district, an account of which appears in his report for 1907. The same year the Rusty Tussock Moth was given special study.

In 1907 and during the present year, the large losses in the hop-yards of British Columbia occasioned by the attacks of the Hop Flea Beetle, called for special thought, and during his recent trip to British Columbia in September last he visited the hop-yards and gave valuable advice to those in charge.

The above are only a few of the injurious insects upon which Dr. Fletcher did original research work. His studies of even the very commonest insects resulted in the finding out of new facts.

In his annual reports, etc., Dr. Fletcher did grand work in educating farmers, fruit-growers, market gardeners etc., to know their worst insect enemies and the way to fight them, and many articles appeared by him on such well-known pests as the San José Scale, the Codling Moth, the Plum Curculio, the Colorado Potato Beetle, the Turnip Beetle, Root Maggots, Cutworms, Grasshoppers, the Hessian Fly, the Wheat Midge, the Western Wheat-stem Sawfly, the Joint-worm, the Oyster-shell Scale, White Grubs, the Pea Weevil, etc, etc.

In the year 1896, Dr. Fletcher received the honorary degree of LL. D., from Queen's University, in recognition of the great services he had rendered to agricultural science. He also received honours from various foreign societies. He was elected a Fellow of the Linnæan Society, a Fellow of the American Association for the Advancement of Science, a Fellow of the Entomological Society of America, a Member of the Association for the Promotion of Agricultural Science, an Honorary Member of the Lancashire and Cheshire Entomological Society, a Corresponding Member of the Washington Entomological Society, and was at the time of his death President of the Entomological Society of Ontario and Honorary Secretary of the Royal Society of Canada. He was the first man to urge the formation of the Association of Economic Entomologists, which is the most important society of its kind in the world. For many years he was a member of the Editing Committee of the Canadian Entomologist, and quite recently, since their beginning, was on the Editorial Boards of the Journal of Economic Entomology and of the Annals of the Entomological Society of America.

NOTE—Plate No. VI is from a small negative taken two years ago by Mr. Shutt, and is considered as giving Dr. Fletcher in a characteristic pose. Members and friends can obtain copies of the photograph from the Topley Studio, Ottawa.

DR. FLETCHER AS A NATURALIST.

BY PROF. JOHN MACOUN.

My intention to-night is to speak of Dr. Fletcher as a Naturalist, for as such I was privileged to know him well. I was twenty years in the field when I came here in 1876 to give evidence before the Committee of the House of Commons in connection with the development of the West. I spent two days here and amongst the other boys I met at that time were Dr. Fletcher, Dr. Small, Mr. Harrington, and one or two others of the old men of to-day. Three years later I came back to live here during the winter of 1879-80 and then came in contact with Dr. Fletcher, who in the three years intervening had developed. How did he develop? How do men pass from the condition of ignorance into light? By the methods pursued by the young men of to-day? No. The young men of the past worked; there was less play then than to-day. I can see Dr. Fletcher and so can you, Sir, when he was Accountant in the Library. What I had never seen before I saw on his desk a wardian case, in which plants are kept in a humid atmosphere and developed so that they may be seen and studied for a length of time. Alongside of the wardian case stood a couple of glass jars and in these jars were insects, either as caterpillars or in a more advanced stage, and he was studying them while attending to his regular duties. When the other gentlemen stood up here to-night they spoke of Dr. Fletcher as being a teacher who talked about what he knew. Nine-tenths of the men who talk don't know, but he always knew. How many men present to-night could argue with him? Whether he was right or wrong, he was always right, and it was a strong man who could argue him down. Hence, I often said, "Fletcher, there is no use arguing about it, we cannot change our opinions." But Fletcher knew and could teach others and there is where his power lay. He went into the country and talked to men. I know old people who look upon him as a god because every word that he spoke went to their hearts and they lived on his word. His power lay in the development of the man as a naturalist and a teacher. I have been going through this thing in the night and thinking over Dr. Fletcher since his death and of the many thoughts was, "Why was there such a man?" I have met during the last fifty years many men, amongst them Dr. Gray and Dr. Torrey, old men, and a host of others, but none like Dr. Fletcher. Here is the reason. The first summer I was here, 1880, I began to see something about him that was different from others. He was not like

anything America had produced. I set him down as a product of the English school system because the gentlemen I met in England were all interested in natural history. He was a man who studied botany, ornithology, entomology, geology and all the other branches of natural science. Dr. Fletcher was a man, a true naturalist, he was a man on all lines, if he went out with me he studied botany, if he went out with Mr. Harrington he was poking around the bark of trees discussing insects which to me were a blank. When we went to collect clam-shells down the Ottawa River he could study the water-plants with me and the shells with Mr. Latchford. The reason he was first in this, first in that, and first in everything, was because he was always busy, always at work, and as soon as he learned a thing he was ready to tell it. Other men would tell us nothing; he would tell us something in a simple, quiet, easy way, and we went home and absorbed it. I never expect to see any Canadian approach Dr. Fletcher on these lines. I never found the equal of Fletcher as an all-round naturalist. As you remember, nearly one hundred and fifty years ago a gentleman lived in England named White, of Selborne, a learned gentleman, who wrote on general natural history. Since his time no man has risen in England like him. He was Dr. Fletcher's prototype. There was no man like Fletcher in the multiplicity of subjects he took up. We read of Darwin, but Darwin ran in grooves as you all know. If you take up any of the other great men you will find that they also ran in grooves; but not so Fletcher.

In connection with this, I may say now there was another point which I discussed with Fletcher the first year I was down here. Talking of natural history, he said that he was going to take up all subjects. I laughed at him, I said I was a geologist; I had gone through entomology long before and discovered I didn't care enough about it to continue to collect, and presented my insects to Mr. Evans, of Trenton, and abandoning entomology had fallen back upon botany. He said, "Why should I not take up all subjects?" Of course, gentlemen, I was like most sceptical people, I laughed at him, and said, "You will start five or six things and finally drop them." But, he had such a power of persistence, as has been so well brought out to-night, that he never failed to accomplish what he set out to do.

My young son and myself were up at Nepigon twenty-four years ago last summer. He was quick on his feet and I was slow, getting well up in years; we saw a fine butterfly go past down the lane, and I said we must get that butterfly, and we obtained perhaps a dozen. I brought them home and showed the butterfly to Fletcher and he said, "Why, Macoun, that is

the greatest discovery of the age, the finest catch for many years," and eventually it was named after me. He got from me particulars of where it should be looked for, and he and Dr. Scudder, of Boston, went three years in succession to Nepigon to get the eggs of this butterfly, so as to rear the larvæ and follow up their life history. They went three years in succession before they got them; *that* shows you the persistence of Fletcher. Now, if it had been me I might have gone one year in search of it. There is where his success lay, and I will always maintain that the man who fights the longest wins. It is the chap who stops first who loses the battle. Fletcher never lost a battle. It might be a drawn one, but it was never lost.

Now, I don't think that it is possible to develop in America a naturalist of the type of Fletcher. To-day, natural history is becoming specialized. Botany of to-day is taken up by a dozen working on different lines. When I was young I had to carry it all. Now, entomology is taken up by a dozen in the same way. All things are changing and hence development will prevent the naturalist of his type coming to the front.

He was made Botanist and Entomologist of the Experimental Farm. We who knew him before that time can remember well the kind of man he was then and the kind of man he became. When he went to the Experimental Farm he began to study natural history on the economic side as he was in duty bound to do. When Dr. Fletcher became Botanist and Entomologist, as Dr. Saunders has told us, he commenced at once to study botany and entomology in the way that was required of him for his work, and from that day forward he was an economic naturalist. He studied things necessary to his work, and therefore he became a power in the country and the Government never had a servant that went up and down the country and did so much good as Dr. Fletcher. It is all very good for politicians to make speeches, but they mostly amount to so much hot air. When a man like Dr. Fletcher and men of his type go up and down the country and talk to the farmers and give them information about every difficult thing that they ought to know in their everyday work, these speakers are much more useful than the other class.

There are many men in the country to-day who have through him become useful men in their day and generation, and now I ask what will the young people of Ottawa do who used to sit in this hall and hear his speeches so full of life and power? We shall never see the like of Dr. Fletcher again, but his work is not done. His spirit lives in the hearts of the people of Canada.

DR. FLETCHER AS A LEADER.

BY DR. H. M. AMI.

It is with great difficulty and diffidence that I attempt this evening to describe to you Dr. James Fletcher as a Leader. The painful loss we have sustained is too recent, and too great, to permit me to even attempt to do justice to him. His all-round personality, genial, kind and affable ways, his utterances and activities are so deeply imprinted upon us by the years of intimate and constant relations that their full living reality cannot be connected with the unutterable pain we experience in the loss we have sustained.

It is only three weeks ago to-day that we followed to their last resting place the mortal remains of our dear departed leader and friend.

Many years and many times we had followed him in those pleasant paths and bye-ways where the Trilliums and Ginseng flourish, where the Spring-beauty and Hepaticas thrive, and where the rare orchids hide their fringed or fantastic blossoms. Suddenly, when we least expected it, he who had been our leader in botany, in entomology, in conchology, in so many and interesting branches of natural history; he who had banded us together and had founded our Club; he who had been the cheery friend of every member of the Club for twenty-nine years; was taken from us and cut off in the prime of manhood. We mourn his loss to-day not alone for what he was to the Club from its very inception—a constant inspiration and a devoted Leader but, also, for what he was to each of us individually—a friend, an example, an ideal man, a man with wide sympathies and firm convictions, fond of knowledge and of truth, of a tender, patient and winsome disposition, as well as of a resourceful nature. His sweet, wholesome influence, his truly unselfish nature, and his beneficent example must ever be a light which will radiate in our community with increasing power as years roll on. His great spirit permeated every branch of the Club's work from its earliest days, and for sound counsel and critical advice we naturally and invariably turned to him. May his life and work be ever kept before our eyes and minds.

What a privilege to have known Dr Fletcher!

He was an ideal Leader, and it is of him as such that I have been asked to speak to you to-night. To be a Leader one must be a seer. He had his visions and in the pursuit of his high ideal Dr. Fletcher fairly drew us along. His great faith, in all that tended to the ideal, the noble, the good, and the true, which was so manifest in him, made him look far into the

broader aspects of those pursuits and studies which occupied his attention.

He never spared himself, but with an ever-springing energy devoted his life to the study of the natural history of the Ottawa District and of the Dominion of Canada, as well as of those larger and international problems and relations, which widened the scope of his researches enormously.

His deeds and suggestions as a Leader I shall not here attempt to recite. You know them all. The members of the Club who have been closest in touch with Dr. Fletcher since the inception of the Club know well the ceaseless and untiring zeal which he displayed in its welfare and on their behalf. All the Normal School classes, which from year to year were wont to attend the Club's Excursions and Soirées, also know well the devotion which he displayed on all these occasions. Educational Institutions of the city, including the Kindergarten children, received inspiring words from him and listened to his enthusiastic utterances on the plant and the insect world.

We cannot realize that he is gone and is no more with us in reality. His presence in our midst for so many years, combined with his powerful physique and constant jovial expression, which made his leadership so attractive, pleasant and inspiring, still permeates our inmost soul and being so thoroughly, that his influence is still felt and will continue to exist. There is not a flower, nor an insect, which does not recall him, which does not bring to mind his noble countenance and winsome ways. There is not a brook, valley, crag, hillside, wood, or swamp; not a spot in the Ottawa District which does not vividly suggest him.

Who can forget those vivid pictures drawn upon the canvas of our minds by his charming words when Dr. Fletcher described to us the life-history of some butterfly, or the capture of a rare and interesting species in the Rockies. How he led us, step by step, in captivating fashion through all the intricate ways of his adventures until the goal of his ambition was reached. How, breathlessly, we listened to his graphic descriptions! How keenly interested he himself was, and how he seemed to live over again the experiences he had enjoyed or suffered! These and hundreds of other utterances by him we shall never forget.

His busy life kept him constantly at work with Nature. In this work he found pleasure and by it gave the same to tens of thousands in Canada and elsewhere.

Nature Study articles of recent years, were a special feature of his writings, and these are masterpieces of composition as well as of comparison and observation.

Not only was Dr. Fletcher one of the founders and organizers of the Club as well as Leader all these years, but he also contributed many articles and papers to our transactions. The first paper in our first volume was by him. This was his inaugural address delivered on 24th November, 1879, which is a masterpiece written by a master-mind. What an appeal this was to us to work up the natural history of Ottawa and its environs! Let every member who can, read this address once more and receive the inspiration which he instilled into his hearers those many years ago. To quote from this address will be to give in his own words the keynote of all his endeavors in the field of Nature about Ottawa. In speaking of the newly-formed Field-Naturalists' Club, he said:—

“One of the chief benefits bestowed by an organization, such as ours, is that it enables one always to know where to find a sympathetic companion. Of all recreations, there is none, to my mind, more enjoyable than a walk in the country with a congenial friend. No kind of intercourse brings you into closer contact with a companion than taking a walk. You cannot take ten steps, even with a stranger, without feeling a necessity of saying something, and if there is anything in a man, you can soon bring it out of him in a country walk. Now, it is very clear that a judicious choice with regard to your companion is a most important matter; but it is not always easy to find one who has the same tastes or takes an interest in the same subjects as yourself.”

In speaking of a naturalist, he said:—

“No one looks upon the world so kindly as he does; no one else gives so much to, or takes so much enjoyment from, the country as he does, and he holds a more vital relation to Nature, because he is freer, and his mind is more at leisure. Moreover, when a naturalist gets a friend, who is not one, out in the country, he feels a sort of moral responsibility resting upon him to find something particularly interesting to point out, so as to arouse his curiosity, and, if possible, to convert him to the study of ‘La Belle Science.’ I say particularly interesting, because everything in Nature is interesting and beautiful; and I defy anyone to bring me a single object, picked up by a country roadside, which is not beautiful, and even exquisitely so—a stick, a piece of straw, a leaf, or a stone, it matters not what, if properly examined and understood, they are all wonderful and lovely.”

After describing a number of commonplace objects and showing their beauty and attractiveness, he goes on:—

“The reason I have dwelt at such length this evening on these objects is to endeavor to point out that there is nothing,

not even the commonest object in Nature, that is not worthy of a careful examination. It is a great mistake, but a mistake which is often made, even by scientific men, to suppose that new knowledge can be gathered only from the unexplored fields of science, when, in the most familiar walks of life, there are countless riches of truth which the reapers, in the hurry of the harvest, have passed unnoticed, and which will abundantly reward the careful gleaner. The French aptly express this thought in the proverb, 'La Science court les rues'—'Science runs the streets;' or, more freely translated, knowledge is to be found everywhere, by those who will look for it, for it is so plentiful that it runs in the very gutters of the streets."

In conclusion he said:—"Let us, then . . . strive, while working up the natural history of our neighborhood thoroughly, to do so in a popular manner, intelligible to all. I believe we have it in our power to give much happiness to many, by inducing them, by our example and persuasions, to study with us Nature. Its wonders are open to everyone, from the youngest child to the aged man; it offers charms and fascinations to all—for all is wonderful and beautiful; and, as nothing makes men so happy as contemplating the beautiful, I consider nothing is so well calculated to make men good and happy as a study of Nature."

What Dr. Fletcher was as a Leader is recorded, though only in part, in the volumes of Transactions of the Club, which are as a monument to his memory. His "*Flora Ottawaensis*" was a feature of the early days of the Club and his endeavor was to obtain as complete a series as possible of our local flowering plants and ferns.

He drew us all together by the magic power of his sweet personality, by the enthusiasm of his love for Nature all about us, and by the kind words and deeds which he uttered and performed even unto the end.

The secret of his good life lay in the fact that he himself was led by motives and visions of the highest and best ideals. Inspired by a strong desire to see others enjoy Nature as he did, he presented the truths as they were revealed to him in a most delightful and pleasing manner. The simplicity of his remarks even when dealing with difficult subjects, marked him as a clear-sighted and keen observer and a vigorous and successful lecturer. With what care he described all he saw of interest in the field and forest, on the road or in the street! Oftimes he was called upon to repeat the same facts and truths, but he never wearied of imparting knowledge. In the numerous excursions and sub-excursions of the Club about Ottawa he was the rallying point and centralizing force. In all his ad-

dresses likewise he led us by ways that were pleasant, and taught us how to collect, classify and preserve plants and insects or other objects of natural history. He was ever teaching all who attended the outings and soirées these fundamental principles in acquiring material for study. In the work of the Club, Dr. Fletcher was *facile princeps* and was our Leader *par excellence*.

Well do I recall at this time the first excursion which the Club had to King's Mountain, Chelsea. What a glorious day! What a glorious Leader! His buoyant nature, cheery disposition and winning ways attracted as so many magnets, and oftimes the geological and the entomological as well as other branches joined the botanical section, because he as the Leader drew everyone, from the child—eager to learn everything about Nature—to the older members and visitors.

He saw beauty, order and use in everything, and the world about him filled his life with numberless surprises and treasures. He was at one with Nature and she revealed herself to him as she does to but few. His enthusiasm was catching and he imparted not a little of it to his friends and associates.

No one can estimate his worth, for he was everything that one can imagine to us as a Club and to many scientific societies and institutes in our land. He understood the relations existing between the plant world and the insect world to a remarkable degree. It was this keen perception and accurate knowledge that led him to take such a deep interest in our farming communities.

How eagerly and zealously he guarded their interests and spoke in their behalf at the Sessions of the Agricultural Committees of the House of Commons when he was stationed in the Library of Parliament. And what a central and attractive spot that Library of Parliament was to us younger naturalists in the 70's and early 80's.

His work at the Central Experimental Farm, whither he was called in 1888, took him wholly into the realm which he loved and cherished.

We deem ourselves fortunate—though now deeply sorrowful—to have been permitted, many of us for so many years, to have accompanied such a Leader into so many paths of pleasure in this neighborhood and elsewhere. His deeds were many and good. His energies were spent for the welfare of all with whom he came into contact. In his death the Club has lost its greatest friend and supporter and Leader. We owe him a deep debt of gratitude which years of service in the same cause can only begin to express.

Those of us, who followed him in many of his outings

with the Club and other organizations, are conscious of a great loss. Nevertheless "we mourn not as those who have no hope," for from his heart and soul there radiated an influence and inspiring grace which the child of God, the Christian in the highest sense of that term, alone can possess, and which can soothe as well as, in time, satisfy the grief and loss we have sustained.

At the close of Dr. Ami's paper, the Chairman asked if there were any present who would like to add their tribute, and in response to this invitation, the following addresses were made.

MR. FRANK T. SHUTT, Chemist of the Dominion Experimental Farms, spoke as follows:—

It is as a co-worker and friend of many years that I would add a word of tribute to-night to the memory of the late Dr. Fletcher. As most of you are aware, Dr. Fletcher and I have been colleagues since the establishment of the Experimental Farm system, now twenty-one years ago, and from the first we became fast friends. His work and mine had the same field—the Dominion of Canada—and it was only natural that a part of our labours at least should be in common. Many of our investigations were carried out together, the chemical work supplementing the botanical or entomological, as the case might be. As instances I may cite our investigation to determine the agricultural value of native and imported grasses and the many problems respecting the efficiency of insecticides. With a full realization of the value of the results from the biological standpoint, he, at the same time, recognized the importance of chemical data. Further, while making himself cognisant of the chemical details, he kept well within his own province in his dicta, referring his readers or hearers to the right authorities when, in treating of a subject, it was necessary to bring before them facts outside his domain and requisite to present the matter in its fullest aspects. You will thus see that it was a very pleasant thing to be associated with him and that our work was carried out together in the most harmonious manner.

Of his ability as an economic botanist and entomologist, and the most excellent services he has given to his adopted country as such, there are many here to-night better qualified to speak than I am. But I would add a word to this testimony in my belief that his large and wide knowledge of Canada and of the conditions that prevail in the various parts of the Dominion was of inestimable value to those to whom he was imparting information. He had travelled and observed in every province of the Dominion and this in itself gave much weight to his opinions and advice.

Reference has been made to Dr. Fletcher's generosity, his desire to help others, his readiness always to do a good turn; it was surely these fine qualities that dominated his life. There must be hundreds scattered all over this wide Dominion who will miss his kindly assistance and encouragement. And this goodness of heart was only equalled by his capacity for work. My bedroom window commanded one in his office, and night after night for weeks together I would retire—and that at no very early hour—leaving his light burning. He was naming botanical and entomological specimens for amateur collectors all over the country, scores of whom probably he was thus encouraging in their studies by his kindly help. He must have been blessed with a strong vitality and much strength, for by sunrise next morning, if the season were summer, he would be out gardening—a work, or rather a pastime for him, of which he was an ardent lover. He took the greatest pride in his garden and nothing gave him more pleasure than the presenting of its products to his friends.

It was, of course, in his addresses on Nature Study and allied subjects that he won his laurels and gained a wide popularity. He was a particularly attractive speaker. Of good presence, with a pleasant voice, of an easy yet enthusiastic manner with fluency of speech it was not difficult to hold his audiences entranced in his description of Nature and Nature's children. He carried his hearers with him, so that they forgot the immediate surroundings and were transported in spirit to the mountain side or the bank of the stream as he went in quest of his plants or insects.

But we must not overlook the fact that a very large part of his useful work was done with the pen. I always thought he had a love for letter writing. He had a wide and ever increasing correspondence respecting plants and insects and he encouraged it. His was certainly the "pen of a ready writer."

We all like to think of him as our own personal friend. His cheery, jovial, kindly spirit—for by nature he was buoyant and light hearted—won all with whom he came in contact. Even those who only met him casually will have a pleasant memory of his genial manner and desire to help. Since Dr. Fletcher's death I have received many letters from mutual friends and they all bear warm testimony to his sterling qualities and his charming personality. To those of us who knew him well, intimately, he was a loveable man, warm in sympathy and true, a man of generous impulses and kindly, considerate thought for others. We mourn the death of a dear friend and a truly Christian gentleman. But while we must all deplore the cutting off of such a bright and useful life in the midst of its activities, we must equally rejoice that Dr. Fletcher's work lives after him and that he has left us a noble example to copy in his faithful, helpful, inspiring work.

REV. G. EIFRIG, a Member of the Council:—

Although I did not have the good fortune to know our late lamented Dr. Fletcher so long as some of the other speakers of this evening had, yet, the time—five years—was long enough to let our friendship ripen into a very cordial and sincere one. In fact, his character was such a lovable and unselfish one, that to know him was to love him and become a friend to him. I think his very unselfishness was the key to his great popularity and the general sorrow caused by his taking off. He was a lover of men and a lover of nature, and in this connection I may bring out another side of his many-sidedness, and that is his keenness as an observer of birds. I well recall with what pleasure he would let me know by letter or telephone when he saw the first arrivals of the spring migrants, his first song sparrow, or bluebird, or red-winged black bird, etc. In fact, he rendered some very material service to ornithology in this vicinity, for the first and only positive records of the Lapland Longspur (*Calcarius lapponicus*) and the Shore Lark (*Otocoris alpestris*) in this neighborhood were made by him in May 1890. It is my deep conviction that we have sustained a great loss, the whole country, the Experimental Farm System, Ottawa, and last, but not least, our Club.

MR. E. R. CAMERON, Registrar of the Supreme Court of Canada:—

The gentlemen who have so far addressed you this evening have been more or less associated with Dr. Fletcher's scientific work. I should like the opportunity of saying a word from what may be called a layman's standpoint or that of the amateur naturalist. I have known of Dr. Fletcher's work from a national standpoint, as every other intelligent Canadian has, and of his great services, especially to the farming community and I have been able to appreciate in a humble way the high quality of his scientific attainments. No one could know Dr. Fletcher without being compelled to say: "Here is a great man."

We find in the history of all races that at times nature produces a specially great individuality. When the history of this period comes to be written long after we have passed from the scene, Dr. Fletcher's name will stand forth prominently, and identified with the great advance in scientific agriculture and horticulture. Something has been said as to the form which a memorial to Dr. Fletcher's memory should take. Personally, I strongly prefer that we should aim at establishing a bursary or scholarship in one of our Canadian Universities to encourage research work in entomology and botany, the subjects which are identified with Dr. Fletcher's life-work. This might be styled

the Fletcher Memorial Bursary. I would recommend that before this meeting breaks up a committee be appointed to take this matter into consideration.

MR. T. J. MACLAUGHLIN:—

The various papers and addresses delivered here this evening have touched very beautifully upon almost every phase of Dr. Fletcher's works and his character, but Prof. Shutt, in describing him as a friend, has sounded another chord, and a very important one, in the anthem of praise of this good and great man, in which we are all ready and anxious to join. As one who knew Dr. Fletcher intimately for considerably more than a quarter of a century, I can heartily endorse all that Mr. Shutt has said of him as a true friend.

Dr. Johnson once said, in his criticism of one of the minor poets, that he was interesting to posterity only as a friend of another poet, and I was thinking while Mr. Shutt was speaking, that although the poet's friends considered this harsh criticism, some of us here to-night would not object to being placed in a relative position to that of the poet thus criticised and to have it said of us that we are interesting only as friends of Dr. Fletcher. For my own part I would be perfectly satisfied to be considered worthy of such a distinction. Whether I have been a friend to Dr. Fletcher or no, is not, of course, for me to say, but I can say and do know that he was a true and noble friend to me during all the years that I knew him—a friend in need and at all times, whom I loved as a brother and whose memory I shall ever dearly cherish.

Dr. Fletcher was not only a friend and companion of the learned and scientific, but of all, irrespective of position or condition in life. The high, the low, the rich and the poor met with him on common ground.

It may well be considered that the Ottawa Field-Naturalists' Club has sustained a severe loss in the death of him who was one of its founders. We old members of the Club, all well know that his great personality and enthusiasm carried it through many a severe crisis, but it is to be hoped that it is now old enough and strong enough to long survive him and continue the work to which he was so earnestly devoted.

Dr. Saunders' address on the value of Dr. Fletcher's services in connection with the Experimental Farms—his efforts in the cause of science and agriculture—affords an estimate of the loss which the country has sustained in his death. Indeed it would scarcely be possible for any man to work and experiment so incessantly as Dr. Fletcher did for so many years, without making many valuable discoveries and adding much to science along the lines of his profession. I am not qualified to speak of Dr. Flet-

cher's scientific attainments or of his position in the field of science, as Dr. Saunders, Mr. Harrington, Mr. Gibson and others who have preceded me, are able to do and have done to-night, but I have had ample opportunity of observing many of the lovely qualities of his nature which are not apparent in the broadside of action, as presented to the public; those inborn permanent characteristics which neither time, nor circumstances in life can eradicate or alter, and which endeared him to his family and friends and made his home life so happy and joyous. His pain at the distress of his friends—his pleasure at their success—his ready self-denial for their pleasure and profit—his love for little children and of innocence in every form, and a thousand other evidences of gentle soul and those rarer human virtues which only a great soul has power to arouse, constituted the adornment and great charm of his life and are now the consolation of those who knew him best and loved him most.

I was not aware that Dr. Fletcher was ill at all and the news of his death came to me in New York, where I was at the time, as a most grievous shock and surprise. He was buried before I could return. I was therefore denied the privilege of even looking upon him in death or of following his remains to the grave. I am glad, however, to be at this memorial meeting and to be allowed to add a word to the many beautiful encomiums of the evening on his life and activities, and to express the deepest regret and sorrow at his early death.

— — —
MR. WM. J. TOPLEY:—

Although it is late, I must claim a few moments to add my tribute. While I have listened to the loving words, to the glowing testimonies of his intimate associates, I am impressed with this thought; the lesson of this evening is, that Love rules the world, that we should realize that often it is just as easy to do a kindness as to neglect the opportunity; that the influence of loving deeds habitually performed is almost limitless.

My first impressions of Dr. Fletcher date from 1876. My attendance at excursions and lectures increased my admiration and later, during the work of making a photographic record of some of our forest trees, I was much interested in marking his preparation and provision to record systematically, every observation in his line of work, even those outside our work in hand. On several occasions I have brought visitors to the Experimental Farm, sometimes to obtain advice from Dr. Fletcher, and in the getting of it, was magnetized by his inspiring personality. Whatever may be the future of this institution, we of Ottawa are justly proud of the efficiency of the staff, the

uniform courtesy always in evidence and extended to the humblest applicant for information.

It was not, therefore, Dr. Fletcher's official courtesy that impressed me, it was his approachableness at all times and in all places; his every-day enthusiastic readiness to serve; his desire to give. His life was like a book lying open before you; every time you wished you could apply, could have intercourse without preface or introduction.

We have no remembrances of unkind words, his temperament was too bright. A remark by a former speaker reminds me that Dr. Fletcher once said he had no use for poets; nevertheless, Dr. Fletcher was a poet; his unequalled energy, his love for doing things led him to make a humorous protest against apparent listlessness. A poet is one who through observation and meditation distils thoughts into strong words; who weaves beautiful thoughts into songs full of Divine uplift to the human soul; thus bringing hope and joy into daily living. In this large, best, truest sense he was a poet of "sweetness and light."

At this club meeting it is natural that references should be made to the scientific side of his life, I was pleased that one of the speakers touched upon the charm of his home and family life.

Not being a member of the Club would it not be proper for me to refer to the fact that Dr. Fletcher discharged with equal enthusiasm and efficiency the social and religious duties of a citizen.

Until something better is evolved, all that is included in the word church will continue to stand for the highest moral force. This Dr. Fletcher recognized, to the benefit and appreciation of a large number of our citizens, thus rounding out an ideal life. Too many of our scientists are one-sided like all great thinkers.

When science escaped from the tyranny of ecclesiasticism the pendulum swung to the opposite, materialism; during the last twenty-five years many scientists have not only swung back again but have become spiritists.

A large number take a half-way position, claiming that the evolution of man as mirrored in nature demands a continuity of life, another environment in which the wonderful powers of the subconscious mind may be unfolded; that what we call life is always associated with what we call death.

Whatever we may think of these conclusions it seems to me that one of the strongest proofs of the Divinity of the human soul and of a future life is suggested by the untimely ending of a life so full of fruition, so full of even greater promise; the closing of the clean record of a beautiful life such as his of whom we tonight speak these words of fond remembrance.

"Those whom we love truly never die.
For death the pure life saves,
And life all pure is love, and love can reach
From Heaven to earth, and nobler lessons teach
Than those by mortals read."

"Thank God for one dead friend,
With face still radiant with the light of truth,
Whose love comes laden with the scent of youth
Through twenty years of death."

The following letter from Dr. S. B. Sinclair was read:—

It is probable that the death of no one outside the teaching profession would be mourned more deeply or sincerely by Canadian teachers and more particularly by the graduates of the Ottawa Normal School, than Dr. Fletcher. Dr. Fletcher, in addition to combining in a rare degree the qualities of the gifted scientist and the cultured gentlemen, was above all the Prince of good companions.

The students never lost an opportunity to express their appreciation of his untiring energies in their behalf and of the value of the lessons which he taught and the interest which he created.

Hundreds of teachers, when they hear the sad news, will recall a time when under the convincing and inspiring force of an eloquent and masterly address or in the never to be forgotten walk through the pathless woods they caught something of the spirit of this great man and ever after nature had to them a larger and a Diviner meaning.

DESCRIPTION OF *PSILOCORSIS FLETCHERELLA*, A
NEW SPECIES OF MOTH OF THE FAMILY
ECOPHORIDÆ.

BY ARTHUR GIBSON, CENTRAL EXPERIMENTAL FARM, OTTAWA.

In the Canadian Entomologist, March, 1908, the writer published, under the name of *Cryptolechia quercicella* Clemens, a note on some larvæ, which had been found feeding on *Populus tremuloides*, in the Arboretum of the Central Experimental Farm, Ottawa. On further study the moth reared from these larvæ proves to be an undescribed species of the genus *Psilocorsis*, as mentioned by Mr. August Busck in the Proceedings of the United States National Museum, Vol. XXXV, page 197, 1908. As a tri-

bute to the memory of my late Chief, and ever kind friend, from whom I always received the greatest encouragement and help in my studies, I esteem it an honour to name it

Psilocorsis fletcherella, new species.

Alar expanse 19 mm.

Labial palpi ochreous, margined beneath and on sides with longitudinal black lines, second joint thickened with appressed scales; antennæ simple, without pecten, black, annulated with light ochreous. Face and head rust-yellow; thorax darker, with a tinge of purple; abdomen almost concolorous with thorax, lower edge of segments pale ochreous. Fore wings of a pale gold colour rather heavily dusted with pale brown and having a purplish reflection. Outer discal spot conspicuous, blackish, inner discal spot same colour but not so well defined. Cilia ochreous, darkened with brown. Hind wings: ground colour same as fore wings but only lightly dusted with pale brown. Legs bright pale ochreous, shining; tarsal joints fuscous.

Described from a single, female specimen, the type, Cat.No. 12185 U. S. N. M.

THE PUBLISHED WRITINGS OF DR. FLETCHER.

COMPILED BY ARTHUR GIBSON AND HERBERT GROH.

In the preparation of the following list of writings of the late Dr. James Fletcher, the compilers have met with many difficulties. The author had kept no list of his publications, and search had to be made in many quarters. The list cannot be considered by any means a complete one. Such a list is impossible, owing to the many agricultural and other papers to which he sent material for publication. In the *Montreal Family Herald and Weekly Star*, in his Farmers' Friends and Foes column, which began in 1896, he has contributed replies to hundreds of enquiries, on a great variety of subjects. A list of these could be added but it has been thought better to omit them here.

In the Annual Reports of the Dominion Experimental Farms:

Report of the Entomologist and Botanist, 1887, pp. 8-41; 1888, pp. 47-77; 1889, pp. 59-92; 1890, pp. 154-205; 1891, pp. 190-220; 1892, pp. 144-167; 1893, pp. 157-193; 1894, pp. 183-226; 1895, pp. 135-181; 1896, pp. 223-276; 1897, pp. 187-230; 1898, pp. 167-219; 1899, pp. 159-204; 1900, pp. 195-249; 1901, pp. 197-262; 1902, pp. 169-201; 1903, pp. 163-215; 1904, pp. 205-256; 1905, pp. 159-204; 1906, pp. 201-234; 1907, pp. 182-213.

In the Interim Report of the Experimental Farms, covering the period from Dec. 1st, 1905, to March 31st, 1906: Report for period and historical resumé of economic entomology in Canada, pp. 59-81.

In the Annual Report of the Minister of Agriculture, 1895: Report of investigations in Manitoba and British Columbia, as Entomologist and Botanist, pp. 10.

In the Annual Report of the Select Standing Committee on Agriculture and Colonization of the House of Commons: Evidences, 1891, pp. 13; 1892, pp. 19; 1893, pp. 24; 1894, pp. 20; 1895, pp. 18; 1896, pp. 22; 1897, pp. 17; 1898, pp. 22; 1899, pp. 20; 1900, pp. 45; 1901, pp. 25; 1902, pp. 56; 1903, no Evidence given; 1904, pp. 26; 1905, pp. 24; 1906-1907, pp. 27.

Bulletins of Experimental Farms:

No. 3. Smuts Affecting Wheat, 1888.

11. Recommendations for the Prevention of Damage by Some Common Insects of the Farm, the Orchard and the Garden, 1891.

14. The Horn Fly, 1892.

19. Grasses: Their Uses and Composition, 1893. (Jointly with Mr. Frank T. Shutt, M.A., F.C.S., F.I.C.)

22. Part II on Injurious Insects, and Part III on Potato Blights, 1895.

28. Weeds, 1897. Reprinted 1907.

37. Part of, on Apple Insects, 1901.

43. Part of, on Plum Insects, 1903.

46. Part III, on Lucerne or Alfalfa, 1904.

52. Insects Injurious to Grain and Fodder Crops, Root Crops, and Vegetables, 1905.

56. Parts of, on Insects Injurious to Currants and Gooseberries, and, on Insects Injurious to Raspberries and Blackberries, 1907.

Experimental Farm Notes No. 2: Potato Blights, 1894.

Experimental Farm Notes No. 4: The Russian Thistle, or Russian Tumble Weed, 1894.

Other Publications of the Dominion Department of Agriculture:

Reports of the Dominion Entomologist for 1884, pp. 1-7; 1885, 1-56.

Leaflet on the Clover Seed Midge, 1886.

Farm Weeds of Canada, by G. H. Clark, B.S.A., and James Fletcher, LL.D., F.R.S.C., F.L.S., with illustrations by Norman Criddle. 1906, pp. 1-103. (Text written by Dr. Fletcher).

Government of the North-West Territories:

Bulletin No. 1, Noxious Weeds and How to Destroy Them, 1898.

In the Canadian Entomologist:

Nature-printed Butterflies. Vol. XII, Jan., 1880, pp. 1-3. Also published in Annual Report, Entomological Society of Ontario. Entomology for Beginners—the Calosomas. XII, Feb., 1880, pp. 32-35.

Note on *Melitæa phæton*. XII, Aug., 1880, p. 160.

Thecla niphon. XVI, May, 1884, pp. 92-94. Also in Rep. Ent. Soc. Ont.

A Rare Sphinx Added to the Canadian List (*Pterogon clarkii*). XVII, Dec., 1885, p. 251.

Notes on the Preparatory Stages of *Carterocephalus mandan*. XXI, 1889, pp. 113-116.

Winter Collecting. XXI, 1889, pp. 15-17. Also in Rep. Ent. Soc. Ont.

The Apple Tree Tent Caterpillar. XXI, 1889, pp. 74-76. Also in Rep. Ent. Soc. Ont.

- Cutworms. XXI, 1889, pp. 117-120. Also in Rep. Ent. Soc. Ont.
 The Imported Currant Sawfly. XXI, 1889, pp. 150-152. Also in Rep. Ent. Soc. Ont.
 The Tiger Swallow-tail. XXI, 1889, pp. 201-204. Also in Rep. Ent. Soc. Ont.
 The Mediterranean Flour Moth. XXII, March, 1890, pp. 41-44. Also in Rep. Ent. Soc. Ont.
 The Northern Mole Cricket. XXIV, 1892, pp. 22-25.
 Notes on Killing, Preserving and Relaxing Insects. XXIV, 1892, pp. 14-16. Also in Rep. Ent. Soc. Ont.
 The Mottled Umber Moth. XXVI, Jan., 1894, pp. 22-24.
 Notes on Mr. E. F. Heath's Collection of Butterflies. XXVII, Nov., 1895, pp. 314-315.
 The Cigar-case Bearer of the Apple. XXVIII, May, 1896, pp. 128-130.
Argynnis idalia in New Brunswick. XXIX, April, 1897, p. 93.
Papilio ajax, var. *marcellus* in British Columbia. XXXI, Jan., 1899, p. 8.
 The Bite of *Otiorynchus ovatus*. XXXI, Jan., 1899, p. 14.
 Description of the Full-grown Larva of *Grapta j-album*. XXXII, Sept., 1900, pp. 273-276.
 Description of the Full-grown Larva of *Anacampsis lupinella*. XXXIII, Jan., 1901, pp. 15-16.
 Life-history of the Variable Cutworm, *Mamestra atlantica*, Grt. XXXIV, Nov., 1902, pp. 279-284. (Jointly with Mr. Arthur Gibson).
 Note on *Deilephila galii*. XXXV., April, 1903, p. 109.
 A New Food Plant for the Common Spring Blue Butterfly (*Cyaniris ladon*, var. *lucia*). XXXVI, Jan., 1904, p. 4.
 How do Insects pass the Winter? XXXVII, March, 1905, pp. 79-84.
 Canadian Three-color Process Illustrations. XXXVII, May, 1905, pp. 157-159.
 The Buffalo Carpet Beetle. XXXVII Sept., 1905, pp. 333-334.
 The Larva of *Eupithecia interruptofasciata*. XXXVII, pp. 262-263. (Jointly with Mr. Arthur Gibson).
 The Pupation of *Euanessa antiopa*. XXXVIII, Dec., 1906, pp. 411-412.
 The Life-history of the Spined Rustic (*Barathra curialis*, Smith). XXXVIII, Dec., 1906. (Jointly with Mr. Arthur Gibson).
Platysamia columbia nokomis. XL, Oct., 1908, p. 373.
- In the Reports of the Entomological Society of Ontario:*
 An Outline Sketch of the Canadian Buprestidæ. 1878, pp. 46-84.
 Scarabæidæ—Diggers. 1879, pp. 65-71.
 On the Chief Benefits Derived by Farmers and Horticulturists from a Knowledge of Entomology. 1880, pp. 57-68.
 Necrophori—Burying Beetles. 1881, pp. 70-73.
 Homoptera—The Harvest Flies and their Allies. 1882, pp. 69-83.
 Collecting in Early Winter. 1883, pp. 31-32.
 Notes on Worms. 1883, pp. 68-76.
 The Larch Saw-fly. 1884, pp. 72-77.
 The Hessian Fly. 1886, pp. 43-45.
 Annual Presidential Address. 1888, pp. 3-13.
 A Trip to Nepigon. 1888, pp. 74-88.
 The Wheat Midge. 1888, pp. 88-91.
 Fuller's Rose-beetle. 1890, pp. 62-64.
 Annual Address as President of the Association of Economic Entomologists. 1891, pp. 36-44.

- The Northern Mole-cricket. 1891, pp. 87-90.
 The Horn-fly. 1892, pp. 49-53.
 Clothes Moths. 1892, pp. 53-58.
 Injurious Insects of 1892. 1893, pp. 8-13.
 Notes on some of the more Important Entomological Exhibits at the
 Chicago Exhibition. 1893, pp. 61-64.
 The Pitcher Plant Moth. 1894, pp. 44-46.
 The Gypsy Moth. 1894, pp. 67-72.
 The San José Scale. 1894, pp. 73-76.
 Injurious Fruit Insects of the Year 1894. 1894, pp. 76-81.
 The Interrelation of Insects and Flowers. 1894, p. 119. (Jointly
 with Mr. J. A. Guignard).
 The Value of Entomology. 1895, pp. 16-21.
 Insect Injuries of the Year 1895. 1895, pp. 31-36.
 Insect Injuries to Ontario Crops in 1896. 1896, pp. 58-69.
 The San José Scale. 1897, pp. 78-86.
 The Brown-tail Moth. 1898, pp. 72-74.
 Injurious Insects in 1898. 1898, pp. 75-87.
 Some Interesting Insects. 1899, pp. 30-32.
 The San José Scale. 1899, pp. 17-20.
 Injurious Insects of Ontario during 1899. 1899, pp. 106-111.
 Injurious Insects of Ontario during 1900. 1900, pp. 62-72.
 The Value of Nature Study in Education. 1901, pp. 21-22.
 The Painted Lady Butterfly, *Pyraeas cardui*. 1901, pp. 54-56.
 The Entomological Record. 1901, pp. 99-108.
 Injurious Insects of Ontario during 1902. 1902, pp. 80-87.
 The Pea Weevil. 1902, pp. 3-8.
 Insects Injurious to Ontario Crops. 1903, pp. 62-71.
 Biographical Sketch (with portrait) of Rev. G. W. Taylor. 1903,
 pp. 108-109.
 Insects Injurious to Ontario Crops during 1906. 1906, pp. 81-86.
 The Entomological Record. 1902, pp. 87-98.
 The Entomological Record. 1903, pp. 85-89.
 The Entomological Record. 1904, pp. 56-78.
 Insects Injurious to Ontario Crops in 1904. 1904, pp. 49-56.
 Notes on Mrs. Nichol's paper (On Butterfly Collecting in Canada).
 1905, pp. 79-80.
 Insects Injurious to Ontario Crops in 1905. 1905, pp. 81-90.
 The Entomological Record. 1905, pp. 90-105.
 The Entomological Record. 1906, pp. 86-104. (Jointly with Mr.
 Arthur Gibson).
 Insects Injurious to Ontario Crops. 1906, pp. 81-86.
 The Entomological Outlook. 1907, pp. 9-15.
 The Entomological Record. 1907, pp. 113-133. (Jointly with Mr.
 Arthur Gibson).
- In the Transactions of the Ottawa Field-Naturalists' Club:*
 Inaugural Address as President. 1879, I., pp. 12-22; 1880, II,
 pp. 8-21; 1881, III, pp. 11-19; 1882, IV, pp. 11-21.
 Flora Ottawaensis. 1879, I, pp. 48-61.
 Notes on the Flora Ottawaensis, with Special Reference to the
 Introduced Plants. 1883, Vol. II, No. 1, pp. 29-37.
- In the Ottawa Naturalist:*
 Flora Ottawaensis, 2nd Edition (not yet complete). 1888, pp. 1-98.
 Short Instructions for Collectors Away from Home. Vol. III,
 April, 1889, pp. 8-9.

- Educational Value of Botanic Gardens. V, 1891-92, pp. 105-113.
 Fall Webworm. VI, 1892-1893, pp. 70-71.
Brephos infans at Ottawa. VIII, p. 43, 1894.
 Entomological Notes—The Sumach Gall; *Eacles imperialis*; *Catocala relictæ*; *Anisota virginienensis*. VIII, pp. 117-118, 1894.
 Botanical Notes—*Hypopitys lanuginosa*; *Corallorhiza striata*; *Podostemon ceratophyllus*; *Phragmites communis*. VIII, 1894, pp. 118-121.
 Note on *Erebia discoidalis*. IX, July, 1895, p. 92.
 Note on *Asplenium Ruta-muraria*. IX, Nov., 1895, p. 171.
 Note on The Common House Mouse, *Mus musculus*. IX, Nov., 1895, p. 171.
 Note on *Pamphila peckius*. IX, Nov., 1895, p. 171.
 Note on *Sphinx luscitiosa*. IX, Nov., 1895, p. 172.
 Botanical Notes—*Sisymbrium Alliaria*; *Cypripedium aristinum*; *Arethusa bulbosa*; *Listera australis*; *Habenaria fimbriata*; *Trillium grandiflorum*; *Camelina sativa*. X, July, 1896, p. 86.
 A Butterfly-catching Spider. X, Nov., 1896, p. 151.
 Botanical Note—*Ribes ciliolum*. XIII, June, 1899, p. 75.
 Manitoba's Wild Flowers. XIV, April and May, 1900, p. 19.
 Note on Jewel Weed. XIV, Sept., 1900, p. 120.
 A Hint to Gardeners. XIV, Sept., 1900, p. 120.
 Note on *Pieris protodice*. XV, Oct., 1901, p. 161.
 Note on Macrae's Coral-Root. XVII, July, 1903, p. 76.
 Nature Study. XVII, May, 1903, p. 45.
Matricaria inodora. XVII, Nov., 1903, pp. 143-144.
 Alum Root as a Remedy for Diarrhoea. XVIII, June, 1904, p. 76.
 The Clouded Sulphur Butterfly (*Colias philodice*). XIX, May, 1905, pp. 59-62.
 Note on *Erythronium albidum*. XIX, June, 1905, p. 68.
 Botanical Notes—The Fruit of *Epigæa repens*; Rare Ottawa Plants. XIX, August, 1905, p. 110.
 School Exhibits of Pressed Plants. XX, Nov., 1906, p. 173-176.
 Botanical Note—Fruit and Seed. XX, Nov., 1906, p. 161.
Leucobrephos middendorfi. XXI, July, 1907, p. 67.
 Mountain Sprites. XXI, March, 1908, pp. 225-231.
 The Honey Bee and other Bees. XXI, Feb., 1908, p. 213.
 Two Newly Introduced European Plants. XXII, July, 1908, p. 80-81.
 A Black Fruited Thorn in Ontario. XXII, Nov., 1908, p. 164.
- In the Transactions of the Royal Society of Canada:*
 Presidential Address, 1895, on Practical Entomology.
 Recent Additions to the List of Injurious Insects of Canada. 1899.
 The Value of Nature Study in Education. 1901.
 Descriptions of Some New Species and Varieties of Canadian Butterflies. 1903. Reprinted in Canadian Entomologist, Vol. XXXVI, May, 1904, pp. 121-130.
 Notes on the Preparatory Stages of Some Species of Canadian Lepidoptera. 1907. (Jointly with Mr. Arthur Gibson).
- In the Report of the Geological Survey of Canada:*
 List of Diurnal Lepidoptera of the Yukon District, Northern British Columbia and Mackenzie River. 1887, pp. 229-231B.
- In "Instructions to Canadian Pacific Railway Land Examiners"* (Winnipeg, Man.), 12mo.:
 Botanical Collections. pp. 24-27.

In Insect Life (Department of Agriculture, Washington, D.C.):
 Preliminary Note upon *Chionobas macounii*. II, 1889, pp. 45-46.
 Mediterranean Flour-moth. II, 1889, pp. 187-189.
 Notes upon Injurious Insects of the Year in Canada. III, p. 247.
 President's Inaugural Address, 3rd Annual Meeting Association of
 Economic Entomologists. IV, 1891, pp. 4-16.
 Notes on Injurious Insects in Canada in 1892. V, Nov., 1892, pp.
 124-126.

In Entomologica Americana:

Annual Address of President of the Entomological Club of the A. A.
 A. S., 1889. 1900, Jan., pp. 1-8.

In the Proceedings of the Association of Economic Entomologists:

Notes from Canada. Bull. 26, New Series, Division of Entomology,
 U.S. Department of Agriculture, 1900.
 Injurious Insects of the Year in Canada. Bull. 40, Division of
 Entomology, U.S. Department of Agriculture, 1903.
 Insects of the Year in Canada in 1903. Bull. 46, Division of En-
 tomology, U.S. Department of Agriculture, 1904.

In the Farmer's Advocate:

The Clover-root Borer. 1891, p. 387.
 Articles on Injurious Insects (I-XI). 1892, pp. 18, 58, 147, 198,
 231, 308, 348, 395, 439, 479; 1893, pp. 10, 50.
 Clothes Moth. 1893, p. 149.
 Does Wheat turn to Chess? 1893, p. 167.
 Granary Weevils. 1893, p. 423.
 Injurious Insects. 1894, p. 157.
 Insects Injurious to Farm Crops in Canada in 1896. 1897.
 Carpet Beetle or Buffalo Moth. 1897.
 Injurious Insects: San José Scale—The Army Worm. 1897, April
 1st.
 Injurious Insects: Spraying—Spring Work. 1897, April 15th.
 The Flour Mite. 1900, March 1st.
 Red Spider Injuries (in Manitoba). 1900, Oct. 15th.
 A Cattle Tick (*Boophilus bovis?*) 1900, May 1st.
 Hessian Fly and Joint Worms. 1906, Oct. 4th.
 Calendar Guide to Spraying. 1907, p. 532.
 Uniform Formula for Lime-sulphur Mixture. 1907, p. 533.
 The Larder or Bacon Beetle. 1907, July, p. 1206.
 Calendar Guide to Spraying, 1908, March 26th, p. 549. (Jointly
 with Mr. W. T. Macoun.)
 Uniform formula for Lime-Sulphur Mixture. 1908, March 26th, p.
 550.
 Insects that trouble Vegetables and How to combat them. 1908,
 May 7th.

In The Nor'-West Farmer:

Collecting Botanical Specimens. 1892, p. 196.
 Invasion of Box Elder Bug (*Leptocoris trivittatus*). 1901, Nov. 5th,
 p. 694.
 A Currant Maggot (*Epochra?*) 1901, Dec. 5th, p. 751.
 Getting Rid of Bed Bugs. 1905, Sept. 20th.

In the Montreal Family Herald and Weekly Star:

The Hessian Fly. April 3rd, 1901.
 The Pea Weevil. April 17th, 1901.
 Fleas and Bed Bugs. May 20th, 1901.

- Black Vine Beetle, attacking Strawberries. May 30th, 1901.
 The Powder Post Beetle. Nov. 6th, 1901.
 The Peach-tree Borer. Nov. 13th, 1901.
 Ants in Houses. Nov. 20th, 1901.
 The Hawk House-fly (*Olfersia americana*). Dec. 11th, 1901.
 The San José Scale in Ohio and Ontario. Dec. 18th, 1901.
 Injurious Insects of the Year. Oct., 1902.
 The Pea Weevil. March 25th, 1903.
 The Eyed Elater. August 12th, 1903.
 The Carolina Praying Mantis. Oct. 14th, 1903.
 Fodder Crops of the North-West. Nov. 25th, 1903. (Continued in issue of Dec. 2nd).
 The San José Scale. April 6th, 1904.
 Alfalfa in the Canadian North-West; Growing Brome Grass. May 4th, 1904.
 Injurious Insects of the Year. Nov. 9th, 1904.
 The Rusts of Wheat. Nov. 30th, 1904.
 The Pea Weevil—A Warning. April 5th, 1905.
 The White-marked Tussock Moth. April 26th, 1905.
 Dangers of Sowing Foul Seed Grain. March 7th, 1906.
 Spraying and Spray Mixtures. April, 1906.
 The Brown-tail Moth. April 24th, 1907.

In the Montreal Witness:

- Asparagus Beetles. 1902, Aug. 5th.
 The Buffalo Moth. 1902, Sept. 16th.

In the Annual Reports of the Fruit Growers' Association of Ontario:

- Insects Injurious to Fruit. 1902, pp. 54-55.
 Insects and Fungous Diseases of 1903. 1903, pp. 103-106.
 Insects Affecting House Plants. 1903, pp. 155-158.
 What the Little Bee is Doing. 1904, pp. 90-96.

In the Annual Report of the Bee Keepers' Association of Ontario:

- The Value of Bees in Orchards. 1901, pp. 56-63.

In Proceedings of a Convention of Fruit Growers of the Dominion of Canada, Ottawa, Feb., 1890:

- Injurious Insects Affecting Fruits—Remedies to Prevent their Ravages. pp. 71-74.

In the Annual Reports of the Canadian Seed Growers' Association:

- Co-operation in Improving Seed for Crops. Second Annual Report, 1906, pp. 103-106.
 The Place of the Canadian Seed Growers' Association in the Campaign against Weeds. Fourth Annual Report, 1908, pp. 76-78.

In O. A. C. Review (Guelph):

- The Study of Insects an Essential Part of Farming. 1908, May, pp. 423-426.

In the Annual Report of Nova Scotia Department of Agriculture, 1907:

- The San José Scale.
 The Gypsy Moth.
 The Common Parasites Affecting Sheep.

In Weekly Globe and Canada Farmer:

- Insects and House Plants. 1907, June 19th.

PROPOSED PERMANENT MEMORIAL TO DR. FLETCHER.

The committee appointed by the Club to consider the suggestions made at the Memorial Meeting that a permanent memorial should be erected to the memory of Dr. Fletcher has prepared a letter to be issued to societies and individuals who may have been interested in his work. The letter has been approved by the Club and reads as follows:—

You have no doubt heard with regret of the death of Dr. James Fletcher, Entomologist and Botanist of the Dominion Experimental Farms, which occurred after a short illness at Montreal, Nov. 8th, 1908.

Dr. Fletcher not only did most excellent work for the country in his official capacity, but, as is well known, took a most active part in encouraging the study of Natural History in its broadest aspects throughout the Dominion.

His activities in this connection have been widely recognized and greatly appreciated by scores of students and others who have benefited by his timely assistance and warm encouragement. He was always in requisition as a lecturer by Normal Schools, Natural History and other Societies; for he had gained a wide popularity as a charming and exceedingly instructive speaker.

The Ottawa Field-Naturalists' Club, of which Dr. Fletcher was one of the founders, have thought that his life work was of such a national character that a permanent tribute to his memory should be made. Such a memorial would not only serve to commemorate for all time the good work done by Dr. Fletcher, but would also act as a stimulus to future generations in the study of the fauna and flora of Canada.

Several suggestions have been made as to the form the memorial should take, namely:—

- (a). A fountain at the Central Experimental Farm.
- (b). A statue to be placed in the grounds of the new Natural History Museum.
- (c). A bust or portrait to be placed in that building, or at the Central Experimental Farm.
- (d). To found a bursary at some Canadian University.

Of necessity no decision can be reached until it is known, approximately at least, what amount of money can be raised.

The Council has appointed the members hereafter named to be a Committee to ascertain what response might be forthcoming to an appeal for contributions toward such a memorial.

Will you kindly state on the enclosed form the amount you are agreeable to subscribe to this fund and return it at your earliest convenience to the Secretary.

COMMITTEE:—A. E. Attwood, M.A., President O.F.N.C.; T. E. Clarke, B.A., Secretary O.F.N.C.; Arthur Gibson, Treasurer O.F.N.C.; W. Saunders, C.M.G., LL.D., F.L.S., F.R.S.C., Director of Dominion Experimental Farms; W. Hague Harrington, F.R.S.C.; E. R. Cameron, M.A., K.C.; R. B. Whyte, Vice-President Ontario Horticultural Association; Frank T. Shutt, M.A., F.I.C., F.C.S., F.R.S.C.; A. McNeill, Chief of Fruit Division, Dept. of Agriculture; H. M. Ami, M.A., D.Sc., F.G.S., F.R.S.C.

Signed on behalf of the Committee,

E. R. CAMERON, *Chairman.*

W. HAGUE HARRINGTON, *Secretary.*

Library Bureau of Canada

HEAD OFFICE—201 QUEEN 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 Rolla L. Crain Co.

LIMITED

Printers, Bookbinders and
Loose-Leaf Manufacturers

174-6-8 WELLINGTON ST.

OTTAWA, ONTARIO

THE NEW NATURE LIBRARY

Now complete in 15 large superb volumes.

- | | | |
|------------------------|---------------------|-----------------------------|
| Vol. 1—Bird Neighbors. | Vol. 6—Butterflies. | Vol. 11—Trees. |
| Vol. 2—Game Birds. | Vol. 7—Moths. | Vol. 12—Frogs. |
| Vol. 3—Bird Homes. | Vol. 8—Insects. | Vol. 13—Reptiles. |
| Vol. 4—Animals. | Vol. 9—Wild Flowers | Vol. 14—Mosses and Lichens. |
| Vol. 5—Fishes. | Vol. 10—Mushrooms. | Vol. 15—Shells. |

TEAR OFF HERE

DOUBLEDAY, PAGE & CO.,
123 East 16th Street, New York, U.S.

Please send me descriptive circulars and full details of your new plan for the purchase of your Nature Library. I understand you offer most favorable terms.

O. NAT.

INSPECTED
M. GRAHAM
ICF

GRAVES BROS. FINE HARDWARE

Large Assortment of Fishing and other Sporting Goods.
Camp Supplies.

COR. SPARKS AND METGALFE STREETS, OTTAWA.

FILING



SYSTEMS

Office Furniture and Equipment in Wood and Steel.

THE OFFICE SPECIALTY MFG. CO., Ltd. 143 SPARKS ST.
Phone 835.



LONDON LEATHER

The famous "CROSS" Leather is universally accepted as the acknowledged standard of excellence and is sold in Canada exclusively by

HENRY BIRKS' AND SONS
Limited.

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

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

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

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 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. 7 and List of Entomological Publication for sale just out. Write for it. Insect List No. 6 still in force

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

Publisher of Views of Ottawa Phone 912 Books on Nature Study

C. H. THORBURN

Books & Stationery
 80 SPARKS STREET, OTTAWA

R. McGIFFIN

MEN'S FURNISHINGS
 106 Sparks Street } OTTAWA
 24 Rideau Street }

GEO. H. HOPPER,

Groceries and Dairy Produce
 PHONE 1967
 395 BANK ST., Cor. Waverley, OTTAWA

THE SMITH PREMIER

The World's Best Typewriter

E. R. McNEILL, Agent
 35 QUEEN 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

That Eye Strain

can be relieved by glasses. Eyes tested free of charge by graduate optician

MUSGROVE'S DISPENSARY
 212 BANK STREET

JUN 1 3 1898

The Ottawa Field-Naturalists' Club, 1908-1909

Patron:

THE RIGHT HONOURABLE EARL GREY,
GOVERNOR-GENERAL OF CANADA.

President:

A. E. Attwood, M.A.

Vice-Presidents:

A. Halkett. Rev. G. Eifrig.

Librarian:

C. H. Young.

Secretary:

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

Treasurer:

Arthur Gibson,
(Central Experimental Farm).

Committee:

Mr. J. M. Macoun.
Mr. H. H. Pitts.
Mr. E. E. Lemieux.
Mr. Alex. McNeil.

Mr. L. H. Newman.
Miss O. Jackson.
Miss E. E. Currie.
Miss M. B. Williams.

Auditors:

R. B. Whyte. F. T. Shutt.

Standing Committees of Council:

Publishing: A. Gibson, J. M. Macoun, H. H. Pitts, L. H. Newman, Alex
McNeil, Miss O. Jackson.

Excursions: G. Eifrig, E. E. Lemieux, T. E. Clarke, C. H. Young,
A. McNeil, Miss E. E. Currie.

Soirées: A. Halkett, H. H. Pitts, J. M. Macoun, E. E. Lemieux, L. H.
Newman, Miss M. B. Williams.

Leaders:

Geology: H. M. Ami, W. J. Wilson, W. H. Collins, M. F. Connor,
M. Wilson.

Botany: J. Fletcher, John Macoun, D. A. Campbell, S. B. Sinclair, A.
McNeil, L. H. Newman, T. E. Clarke.

Entomology: W. H. Harrington, J. Fletcher, A. Gibson, C. H. Young, J. W.
Baldwin.

Conchology: J. F. Whiteaves, F. R. Latchford, J. Fletcher, S. E. O'Brien.

Ornithology: G. Eifrig, W. T. Macoun, A. G. Kingston, A. H. Gallup, H. F.
Tufts.

Zoology: E. E. Prince, A. Halkett, W. S. Odell, E. E. Lemieux.

Archæology: T. W. E. Sowter, J. Ballantyne.

Meteorology: Otto Klotz, A. E. Attwood, D. A. Campbell, A. McNeil.

THE OTTAWA NATURALIST

Acting Editor:

ARTHUR GIBSON, (Central Experimental Farm.)

Associate Editors:

DR. H. M. AMI, Geological Survey of Canada.—Department of *Geology*.

DR. J. F. WHITEAVES, Geological Survey of Canada.—Dept. of *Palæon-
tology*.

DR. JAS. FLETCHER, Central Experimental Farm.—*Botany & Nature Study*.

HON. F. R. LATCHFORD.—Department of *Conchology*.

MR. W. H. HARRINGTON, Post Office Department.—Dept. of *Entomology*.

REV. G. EIFRIG, 210 Wilbrod St.—Dept. of *Ornithology*.

PROF. E. E. PRINCE, Com. of Fisheries for Canada.—Dept. of *Zoology*.

DR. OTTO KLOTZ—Dept. of *Meteorology*.

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