



DR. JAMES FLETCHER.

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DR. JAMES FLETCHER.

It is with the most profound regret that we record the death of our very dear friend, Dr. James Fletcher, which occurred on Sunday morning, Nov. 8th. For the last two years his health had not been entirely satisfactory, and for more than a twelvemonth he had been troubled more or less with an internal hemorrhage, which caused him much inconvenience and discomfort at times, but which he did not regard as particularly serious. His cheery habit of mind caused him to treat lightly symptoms which would, in most cases, have excited much alarm. In the middle of September he went out to British Columbia on his annual visit, and was absent from home for about six weeks. On his return his colleagues noticed that he had not benefited as much as usual by the trip, and that his appearance was by no means robust. But with characteristic energy he at once set to work to make the arrangements for the Annual Meeting of the Entomological Society of Canada, which he desired should be one of the most successful in its history. As President for the second year in succession he expected to retire from office, but fully counted upon being present at Guelph and occupying the chair at the various sessions which were held on Nov. 5th and 6th. During the preceding week, however, he wrote saying that he was going to Montreal to consult a specialist, and might after all be unable to attend. He went down on Saturday, the 31st of October, and was at once sent to the Royal Victoria Hospital, there to prepare for an operation. To the writer he sent a letter the following day, expressing his great disappointment at being laid up and prevented from coming to Guelph, but full of confidence in the wonderful power of modern surgery, and with apparently no fears as to the result. The operation took place on the following Saturday, but he failed, owing to his weak condition, to rally from it, and the next morning he died. The operation revealed that he had been suffering for some time from a malignant tumour, which had sapped his vitality, and would very soon, in any case, have brought his life to a close. Up to the end he was cheerful and

uncomplaining, free from despondency or anxiety about himself and full of the happy optimism which had always been one of his charming characteristics.

Few men ever made so many loving friends in all walks of life ; every one who came to know him could 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. James 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 to fill the position of a clerk in the Bank of British North America. Finding the work uncongenial, after two years he gave it up and became an assistant in the Library of Parliament at Ottawa. All his spare time he devoted to Botany and Entomology, and became, as years went on, a recognized authority in each of these branches of natural science. This led to his appointment as honorary Dominion Entomologist and Botanist, and a year or two later to his taking up the work of these departments at the newly-established Experimental Farm. This was in 1887, and for twenty-one years he has been a highly-valued assistant to Dr. Saunders, the Director, and long since became known throughout North America as one of the ablest scientific men of the day in his special departments.

In 1878 he became a member of the Council of the Entomological Society of Ontario, and every year since he has been elected to hold some office in it, being four times Vice-President, and President for three years, from 1886 to 1888, and again from 1906 to the time of his death, when he had just been re-elected for another year. His first contribution to the Society's publications was an article on Canadian Buprestidæ, which was published in the Annual Report for 1878, and his first paper in this

magazine appeared in January, 1880. During all the years that have followed, no volume of either publication has been issued without some valuable articles from his pen.

In 1879 he was one of the originators of the Ottawa Field Naturalists' Club, the most successful society of the kind in the Dominion, and more recently he suggested, and by his energy and influence accomplished, the formation of the important Association of Economic Entomologists of North America, of which he was elected President in 1892. He was also one of the original Fellows of the recently-formed Entomological Society of America, and was First Vice-President last year. In 1886 he became a Fellow of the Linnæan Society of London, and in 1896 he received the degree of LL.D., *Honoris causa*, from Queen's University.

In 1885 he was elected a Fellow of the Royal Society of Canada; in 1895 he became President of Section IV, which is devoted to Geological and Biological Sciences. For many years he was Honorary Treasurer of the Society, and for the last two years Honorary Secretary. To the Transactions of the Royal Society he contributed the following papers: 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; Notes on the Preparatory Stages of Some Species of Canadian Lepidoptera, 1907.

A list of his contributions to scientific and agricultural journals would occupy many pages, if such a list could be completely carried out. His most valuable publications were his annual reports on the work of his department at the Central Experimental Farm and the Bulletins in connection with it, in which he gave accurate detailed descriptions of a very large number of injurious insects, and also his papers in the annual reports to the Legislature of the Entomological Society of Ontario. Two years ago he completed an admirable work on the Farm Weeds of Canada, containing descriptions of all the most important weeds that are a trouble to agriculturalists throughout the Dominion; a handsome quarto volume, illustrated with 56 beautiful coloured plates.

Not only with his pen, however, did he perform useful work, but with his voice as well. He was in great demand as a public speaker at Agricultural, Horticultural and Fruit-growers' conventions, meetings of Farmers' Institutes and other gatherings. On these occasions he at once secured the attention of his audience, and charmed them with his graceful

language and lively humour. No one else, indeed, has done so much for Canada in instructing the people in a practical knowledge of their worst insect foes and the best methods of dealing with them. His work has thus been of vast importance, not only to those directly interested in the products of the soil, but indirectly to all the dwellers within the domains of this wide Dominion.

Though so fully occupied with scientific work, he yet found time for other things. He was one of the most efficient members of St. Luke's Hospital Board; for many years lay-reader and superintendent of the Sunday School in Holy Trinity Church, Archville, a suburb of Ottawa, and an active member of the St. Andrew's Brotherhood. His religious life as a devout son of the Church of England was known, perhaps, to but few amongst his intimate friends, though manifested in many ways through his goodness of heart; he lived and died an earnest God-fearing man, devout and upright, filled with unobtrusive piety, a sincere Christian indeed, "in whom was no guile."

While we deplore the loss that we all feel we have individually sustained, we desire to express to his sorrowing family, Mrs. Fletcher and her two daughters, the deepest sympathy with them in their sad bereavement. To them the loss is beyond all words, but it may afford them a ray of comfort to know that he whom now they mourn was so widely beloved, admired and respected, and that so many friends share in their grief and are filled with sorrow for him who is gone.

C. J. S. BETHUNE.

DR. L. O. HOWARD, Chief of the Bureau of Entomology in the Department of Agriculture at Washington, a friend of many years' standing, writes as follows:

"Dr. Fletcher's services to his country were great. He had a wonderful grasp of a very broad field in entomology, and was one of the best-informed men of his time on the intricate and manifold aspects of economic entomology. His reports were sound and practical, and as a public speaker before assemblages of agriculturalists and horticulturists he was unexcelled. His address years ago before the National Geographic Society in Washington, on the Canadian Northwest, was one of the most perfect lectures I ever heard. He was known, admired and loved all through the States. In fact, I have never known a man who had so many absolutely devoted friends as Dr. Fletcher. His energy, his enthusiasm, his

absorbing interest in everything that lives and grows, his warm heart, his cheeriness, his perfect lack of even a suspicion of egotism, attracted every one who knew him, and bound them to him in friendship, and even love, forever. Here in Washington among the entomologists and others there are many sad hearts to-day."

DR. WILLIAM H. ASHMEAD.

On the 17th of October, Dr. William Harris Ashmead died in Washington, D. C., aged 53 years. For more than a year he was in such an unsatisfactory state of health that his recovery appeared impossible, and it was therefore no surprise to learn that the end had at last arrived. His breakdown in the midst of a career of scientific usefulness was evidently brought about by overwork; he devoted himself with such intensity to the study of the Hymenoptera and the publication of the results that he gave himself no rest, and literally wore himself out, to the grief and distress of his family and many friends.

For close upon thirty years he was a constant contributor to the pages of this magazine, his first articles on insects affecting the orange having appeared in 1879. At that time he lived in Jacksonville, Florida, where he was engaged in the publishing business, which included the issue of a daily paper and a weekly agricultural journal. He was naturally much interested in the production of oranges, and his attention thus became drawn to the insects injuring the trees and fruit, and those parasitic forms that somewhat kept them in check. His work was so thorough that he was made a field entomologist for the United States Department of Agriculture in 1887, and began his career as a professional entomologist.

In 1890 he went to Germany and studied for some time in Berlin, thus becoming qualified for the performance of scientific work of a high character. In July, 1897, he was appointed a Curator of the Department of Insects in the U. S. National Museum at Washington, and continued to hold the position till incapacitated by illness.

In October, 1904, he was elected an honorary member of the Entomological Society of Ontario in recognition of his eminence in the science and the valuable contributions that he so constantly made to the pages of the CANADIAN ENTOMOLOGIST. His studies were devoted to the Hymenoptera, and he published many systematic papers on various superfamilies in the order and described a large number of genera and species. His work was of such a high character that it is regarded as authoritative, and

has attracted the attention of the leading entomologists of both Europe and America. One of his completed works is his Monograph of the Proctotrypidæ, a volume of nearly 500 pages, published in 1893. Most of his papers are to be found in the Transactions of the American Entomological Society of Philadelphia, and in this magazine.

He received the honorary degree of Doctor of Science from the Western University of Pennsylvania, and was the recipient of many distinctions from various Entomological Societies. Personally he was esteemed and beloved by all who knew him, and there are many who now deplore his loss.

C. J. S. B.

JOHN A. BALKWILL.

Another death that it falls to our lot to record is that of our worthy friend, Mr. John A. Balkwill, Director for the London District, and for several years the efficient Treasurer of the Entomological Society of Ontario. After a few weeks of severe illness, he died at his residence in London on the 10th of October last, esteemed and respected by all who knew him. For a great many years he was an active member of the Society, and did a great deal to maintain the interest and enthusiasm of his colleagues in the study of Botany and Entomology and the use of the microscope. He was also particularly devoted to the cultivation of flowers, and became the first President of the local Horticultural Society, and continued a member of its directorate. In recognition of his valued assistance, Mr. C. S. Sargent, in his recent Monograph of the genus *Cratægus* in Ontario, named a new species, *Cratægus Balkwilli*, after him. It is a handsome tree found growing near London.

C. J. S. B.

ENTOMOLOGICAL SOCIETY OF ONTARIO.

The forty-fifth annual meeting of the Society was held at the Ontario Agricultural College, Guelph, on Thursday and Friday, Nov. 5th and 6th. Owing to the lamented absence of the President, Dr. Fletcher, whose serious illness terminated in his death on the 8th inst., the chair was taken by the Vice President, Mr. T. D. Jarvis, during the day meetings, and by Dr. Bethune at the evening sessions. Amongst those present were: Rev. Dr. Fyles, Levis, P. Q.; Mr. Henry H. Lyman, Montreal; Prof. Lochhead, Macdonald College, Ste. Anne de Bellevue, P. Q.; Mr. Arthur Gibson, Central Experimental Farm, Ottawa; Mr. F. J. A. Morris, Trinity College School, Port Hope; Dr. Wm. Brodie, Mr. C. W. Nash and

Mr. J. B. Williams, Toronto; Mr. J. F. Calvert, Orangeville; Mr. J. H. Collingwood, Kintore; President Creelman, Professors Zavitz, Hutt and Bethune, Messrs. Jarvis, Eastham, Howitt, Hunt, Crow, Klinck, McMeans and a large number of the students of the Ontario Agricultural College and the Macdonald Institute, Guelph.

The proceedings began on Thursday afternoon with the reading of the reports of the Directors on the insects observed in their respective districts during the past season. This was followed by a conference on the chief insect pests of the year, during which the following were discussed: The Leaf Blister Mite (*Eriophyes pyri*); Shot-hole Borer (*Scolytus rugulosus*); Apple-maggot (*Rhagoletis pomonella*); Lesser Apple-worm (*Enarmonia prunivora*); Malformations of Apples and Pears Due to Insects; Oyster-shell Scale; San Jose Scale; Codling Moth; Tussock Moth; Turnip and Pea Aphis. The subjects were introduced for the most part by Mr. L. Caesar, and were discussed by Dr. Felt, Professors Lochhead and Bethune, Dr. Fyles, Mr. Nash and others. An interesting paper by Mr. Paul Hahn was read, being a report of what was being done in Toronto in order to control the ravages of the white-marked Tussock Moth.

In the evening, Dr. E. P. Felt, of Albany, who is State Entomologist of New York, gave a highly interesting and instructive address, illustrated by a series of excellent lantern pictures, on "The Interpretation of Nature." Professor Lochhead read a paper on the work of the Graduate School of Agriculture held at Cornell University, Ithaca, N. Y., in July last, and the chairman gave a brief account of the growth of the Society and what it had accomplished. The Massey Hall auditorium, in which the meeting was held, was well filled with students, both male and female, and many others. The College orchestra added much to the enjoyment of the evening by the musical selections that they rendered. A very hearty vote of thanks was given to Dr. Felt for his kindness in coming so far and affording so rich an intellectual and scientific treat.

During the second day, Friday, Nov. 6th, meetings were held morning, afternoon and evening in the Entomological Lecture-room, and were well attended by members and students. The reports of the Council, officers and branches of the Society were presented and read, and the following papers: "The Economic Importance and Food-habits of American Cecidomyiidæ," by Dr. Felt; "Observations on the Sorghum Midge in Louisiana," by Mr. R. C. Treherne; "Hydroëcia micacea in

Canada," by Mr. Arthur Gibson ; "Life-history of *Euchætias Oregonensis*," by Mr. H. H. Lyman ; "Natural Enemies of Some of the Ontario Coccidæ," by Mr. A. Eastham ; "Parasite Work on the Gypsy and Brown-tail Moths in Massachusetts," by Mr. W. R. Thompson ; "The Respiration of Caterpillars," by Mr. H. H. Lyman ; "Collecting with a Lantern Trap," and "Notes on the Occurrence of *Lachnosterna* in 1908," by Mr. J. D. Evans ; "Some Beetle-haunts, by an Amateur Botanist," by Mr. F. J. A. Morris ; "Insect Notes from Quebec Province," "What the Fruit-grower and Farmer Should Know About Entomology" and "The Strawberry Weevil," by Prof. Lochhead ; "Notes on Mites," by Mr. Jarvis ; "The Farmer's Wood-lot," by Dr. Fyles ; "Present Condition of the Work Connected with the Importation of the Foreign Parasites of the Gypsy Moth and the Brown-tail Moth," by Dr. L. O. Howard ; "Injurious Insects in Ontario in 1908," by Dr. Bethune. The proceedings, which were of a more interesting character than usual, were brought to a close at 10.30 p.m. by an informal address from President Creelman. A noteworthy feature of the meeting was the presentation of excellent papers by three of the senior students of the College. The whole of the papers read will be published in full in the forthcoming Annual Report of the Society.

The election of officers for the ensuing year resulted as follows :

President—James Fletcher, LL.D., F.R.S.C., F.L.S., Entomologist and Botanist of the Experimental Farms, Ottawa.

First Vice-President—Tennyson D. Jarvis, B.S.A., Lecturer in Entomology and Zoology, Ontario Agricultural College, Guelph.

Second Vice-President—Dr. E. M. Walker, University of Toronto.

Secretary-Treasurer—J. Eaton Howitt, B.S.A., Demonstrator in Botany, O. A. College, Guelph.

Curator—Lawson Caesar, B.A., B.S.A., Demonstrator in Entomology and Plant Diseases, O. A. College, Guelph.

Librarian—Rev. C. J. S. Bethune, M.A., D.C.L., F.R.S.C., Professor of Entomology and Zoology, O. A. College, Guelph.

Directors—Division No. 1, Arthur Gibson, Department of Entomology, Central Experimental Farm, Ottawa ; Division No. 2, C. E. Grant, Orillia ; Division No. 3, J. B. Williams, Toronto ; Division No. 4, C. W. Nash, Toronto ; Division No. 6, R. S. Hamilton, Collegiate Institute, Galt.

Auditors—Professor McCready and J. Crow, B.S.A., O. A. College.

Delegate to the Royal Society—Arthur Gibson, Ottawa.

"SOME BEETLE-HAUNTS," BY AN AMATEUR BOTANIST.*

In my four seasons of collecting as a coleopterist there have been three collecting grounds that have most attracted me: (a) Stumps and tree-trunks; (b) blossoms; (c) foliage. In all three I have found a considerable range of beetle-guests, and am able to record rare or interesting finds. It is probably in the second of these three haunts that I have had most success, but it is with the first that I intend chiefly to deal in this paper.

There are two conditions under which stumps make a good collecting-ground; one is when they are dead and dry, but have the bark still covering them; it was this condition that first drew my attention and held it through my first season as a collector. The other condition is when there is yet some life in the wood, so that the top of the stump bleeds. I have found that stumps ooze sap in this way for several seasons after the tree has been cut down. A good way to catch beetle-visitors is to scatter some good-sized chips or lay a slat or two of wood or bark on the top. Most beetles are active at night, and when there is a shelter of this sort, they take cover there instead of flying away when the sun rises. Easily the best tree for its range of beetle-visitors, as well as for total quantity, I have found the basswood; next to that the white pine; then the maple, the birch and the elm. Often when a stump is dry and apparently not in a condition to attract guests, it may be made inviting if the bark is still partly green. I have often pried up the bark with a chisel, and laid the strips thus removed on the top of the stump; the smell of the sap or juice fermenting has generally lured some prizes to this bait and trap combined.

The season for collecting in this way may be said roughly to extend from the beginning of May to the middle of July. I began collecting in the spring of 1905, but as I went to England at the end of June I did not make much headway that season. In 1906, however, I did a great deal of collecting and gained quite a lot of experience. One of my first finds was at the beginning of June, while prying the bark from a basswood stump; I discovered something like a dozen specimens of *Saperda vestita*, newly hatched and buried in the inner bark of the tree. I had

*Read at the Annual Meeting of the Entomological Society of Ontario, Nov. 6, 1908.

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my killing-bottle with me, but as the insects were still soft I put them into a small tin box. Here they crawled about excitedly, squeaking (or, rather, stridulating) when handled. On examining them after my return home, I found they had fought in the box, two of them had their antennæ nipped off and several had been deprived of their full complement of legs. I had not yet learned the advantage of laying the detached bits of bark on the stumps as shelter for nocturnal visitors, and so missed a golden opportunity. However, there were a number of basswood stumps in the clearing where I made my first capture, and from these I got several more specimens.

About the last day of June in the same season, while struggling from a tamarack swamp in which I had found a rare fern (*Botrychium simplex*), I noticed a fallen and decaying trunk of elm, and on removing some bark found it infested with a larva closely resembling that of *Saperda vestita*; I took one that appeared nearly full-grown, with some of the rotten inner bark, and succeeded in rearing it; some three weeks later it emerged from the pupa as the elm-borer (*Saperda tridentata*). I have taken only one other specimen of this beetle; it settled one fine Sunday night in June on a supper-table at which I sat, a guest; the entomologist, however, would not be denied, and in spite of looks of outraged propriety on the part of my fellow-guests, and some embarrassment (not mine, but my hostess's), I produced a cyanide bottle and captured the insect.

Early in July I went to Oliver's Ferry on the Rideau, and in a day or two chanced upon a spot that proved a regular treasure-house to the young collector; it was at the side of a path through a wood of young growth, mostly basswood and maple; here lay a log of basswood with the bark still on it, close by the stump from which it had been cut, and a pile of basswood split and stacked. In the bark of the stump and the log I found larvæ and pupæ of the *Saperda vestita*; some pupæ that I took home lived, and from two or three I secured specimens of the imago. In the hot sunshine beetles lit on the log and on the wood-pile, and I tried the experiment of laying detached pieces of bark on the stump, the log and the split wood, sometimes sandwiching bits of bark between sticks of the wood-pile. This simple contrivance of bait and trap yielded splendid results for over a week, at the end of which time the bait was filched by the sun drying all the moisture out. My captures comprised an *Elater* as large as *Alaus oculatus*, and dark pitchy-brown in colour;

two specimens of a *Chalcophora*, three or four of *Dicerca divaricata*, and 15 of a *Chrysothris*, about the size of the apple-borer (*Ch. femorata*) ; a dozen or more of a blackish weevil, akin to the strawberry weevil ; some two dozen specimens of *Eupsalis minuta*, sexes evenly divided ; 25 specimens of *Parandra brunnea*, one specimen of *Tragosoma Harrisii*, and a beautiful specimen of the little *Amphionycha flammata*. This last, Dr. Bethune tells me, has seldom, if ever, been reported from Ontario, and it may therefore be interesting to some of you to know that I captured a second specimen of the same beetle about three days later, sunning itself on a leaf of basswood, within 50 yards of the first capture. It was a bright, calm day in July when I captured the first, and very hot, with the sun almost at its zenith, and the log on which the insect lit was bathed in sunshine ; small as the creature is, the sharp click with which it settled was distinctly audible. As the basswood pile was beginning to fail me, I happened on a clearing where some small maples had been felled. Finding the stumps still moist, I laid chips and bark about their tops ; this yielded me several new species, a beetle marked like the *Megalodachne*, but smaller and with the ground colour light brown instead of dark chestnut ; three or four specimens of a beetle allied to the weevils, I think one of the *Anthribide* ; and, settling on a stump in the sunshine, a magnificent specimen of *Purpuricenus humeralis*, a longicorn of great beauty.

At the end of August I was out fern-hunting at Lake Dalhousie, about 20 miles north of Perth. From a stump of white pine I took the pupa of a longicorn, which later emerged as *Rhagium lineatum*, and while raising some chips from the top of a fresh and resinous stump of white pine I drove from cover a *Clerid* that was then new to me ; the head and thorax were dull orange, the base of the elytra the same, the rest of the elytra was alternate gray-white and black. Up to that time I had only found two species, a small scarlet one, fairly common under bark, and one banded with orange and dark blue, which is frequent on certain blossoms. Early next spring, about April the 28th, I found some white pine had been felled in the winter, not many miles from the school in Port Hope. Recollecting my find of the previous autumn, and thinking the fresh resin might be the attraction, I laid some bits of bark and chips on the surface of the stumps. On visiting my traps a day or two later I was agreeably surprised to find three specimens of the resin-loving *Clerid*. About the same time I got five more specimens from newly-felled pine, under the

chips that had been left on the stump by the axe. Some of these stumps I baited with chips, and in all captured about a dozen. I have never found them on dry stumps, but only under fresh chips and associated with new resin. The creature closely resembles a beetle figured by Curtis in his British Entomology as *Thanasimus formicarius*; it is there said to frequent the Scotch fir, which, of course, is also a pine.

About the middle of May in the same season (1907) I visited the basswood stumps from which the year before I had got the *Saperda vestita*. Some of the bark that I pried up was infested with *Leptura ruficollis*, and I took also from under the bark two pupæ of a longicorn closely allied to *Urographis*. Ripping some bark from the sides of several stumps, I laid it on the tops. This proved an admirable bait, and among my captures were three or four specimens of a tiger-beetle (*Cicindela sexguttata*), seven specimens of a rove-beetle (*Staphylinus violaceus*), 12 or 14 of the northern *Brenthid* (*Eupsalis minuta*), a single specimen of a locally rare darkling beetle (*Phellopsis obcordata*), five *Penthes* and six or eight *Alaus oculatus*; I may say that I have found the species *oculatus* very common on the basswood, and in one or two cases the beetle, under concealment of the strip of bark, had, during part of the night, half buried itself in the wood of the stump. The beetle can eat very fast; a friend of mine took nine or ten from a rotten basswood log and sent them to me in a stout cardboard box; when I got the parcel one of the largest specimens had eaten a hole through the corner of the box and was through two folds of the brown-paper wrapper. I have never found the allied species of *myops* on basswood, but always in white pine, usually under the bark of dead dry stumps, where it is fairly abundant.

Later on in the same season, while wandering about the upper reaches of Gage's Creek, about six miles from the school, I passed through a clearing in which hemlock had been felled; among several other *Buprestids* settling on the bark of prostrate logs as well as standing trees, were two that were new to me, both very active, and only to be caught (unless you had a net) by careful stalking; one a small *Chrysobothris*, and the other, *Melanophila Drummondi*; this last I had never seen before and have never seen since, but on this newly-felled hemlock, as well as on living trees, it was abundant, and I captured about a dozen specimens; a few days later, at the end of June, I took to the clearing a brother-collector anxious to see *Melanophila Drummondi* in its native haunt, and

there I turned him loose. While I was looking about, with my eye focussed for beetles, I distinctly saw a pair of longicorns running on the trunk of a tall elm growing at the foot of the clearing near the stream. From their movements and appearance both I felt sure they were longicorns, and at first took them for a pair of *Cyrtophorus verrucosus*, a beetle I am well acquainted with; an instant's reflection told me that at ten yards' distance a beetle the size of *Cyrtophorus* would hardly be visible, and I rushed towards what I was certain must be a prize; unfortunately, the beetles were running in an upward spiral, and when I stumbled to the tree over a rotten log they were almost out of reach; I jumped and managed to brush one to the ground, but could not see it by the most careful search; however, I waited patiently for a minute or so, and then, to my great delight, saw the creature emerge from the ground and reascend the trunk. As I captured it I recognized in it the *Physocnemum brevilineum*, a long-coveted species. Scanning the tree carefully, I presently descried two more of the beetles running about on the bark, some 20 feet up; I stayed for nearly an hour at the foot of the tree, with hope in my heart and a crick in the neck, as intent as a dog listening to the chatter of a squirrel, and my reward was three or four specimens of the beetle. As a rule, they appeared from a height beyond range on the trunk of the tree, walking rapidly downwards, following the corrugations and grooves of the bark; occasionally, however, they lit on the tree after flight through the air, but they rarely when disturbed took to the wing for escape, preferring to run or to release their hold and drop. A six-mile walk is nothing when a new longicorn is waiting just round the last corner, and I made the tree the turning-post of my daily course for nearly a week, by which time I had taken 15 or 16 specimens. The tree was apparently sound, with a magnificent crown of foliage surmounting the massive pillar of its trunk, but the beetle was breeding there, I am pretty sure, and in July of this year, while I was in England, my fellow-collector got several more specimens on the same tree.

Early in July I made an expedition to Garden Hill, some 10 miles north of Port Hope; here they were cutting out the pine from a 20-acre lot, and a sawmill was at work. I went out in hopes of getting some specimens of *Monohammus*, a beetle that, with a single exception, I knew only from cabinet collections. The lumbermen said they had seen numbers of these insects on the logs and in the brushwood, but from inexperience or ill-luck I failed to secure many; my bag included one pair of

the large gray *Monohammus*, three isolated specimens of *Monohammus scutellatus*, and one specimen of a third species of *Monohammus*, the elytra being in colour a mottle of three or four shades of rust-yellow, and the insect in size almost identical with *scutellatus*. By preparing several stumps and logs with chips and stripping the bark from dead trees, I got several other longicorn beetles, such as *Crioccephalus agrestis*, *Orthosoma brunneum*, *Tragosoma Harrisii*, and a carcass of *Prionus laticollis*. Had this been all, I should have felt some disappointment, but it wasn't. The place was a veritable paradise of *Buprestids*, and not only did I get 12 or 14 species in all, but among them several quite new to me, beginner as I was. There were at least two (probably three) species of *Chrysobothris*, two of *Chalcophora*, three or four of *Dicerca*, two or three of *Buprestis*, and a black *Melanophila* with a nasty bad habit of settling on the back of one's neck and giving it a sharp nip.

There could be nothing more enjoyable than roaming about in that clearing, and though it is nearly a year and a half ago, it seems like yesterday. It was glorious July weather; in the distance you could hear the mourning dove, and round about in the brushwood and trees were several pairs of Towhees and not a few slate-coloured Juncos. While ranging up and down I noticed on a bare dead trunk of pine a bright looking beetle with apparently a damaged wing, for it stood out from the creature's body at an angle. At nearer view this resolved itself into a brand-new *Clerid*, the largest I had ever seen, and in its jaws was the elytron of an *Elater*, off which the monster had just been dining; no midnight assassin, but a cannibal in broad daylight, and the rascal was flaunting his trade in one of the gayest liveries you ever saw; the head and thorax were orange, the shoulders (or base of elytra) black, round the waist a broad sash of brilliant scarlet, below that another band of black, then a band of gray-white, and the tips of the elytra black. In two all-day visits to this place I caught five of these beetles, three of them red-handed; one on a stump with an ant in its jaws, a third on a fence-post dissecting a grub of some kind; the other two belonged to the blameless order of those that have not yet been found out; one was resting on a rail, along which a stream of ants happened to be crawling, and the fifth was just issuing from an ant-bore in a dead pine, down which motives of curiosity, doubtless as innocent as idle, had prompted it; the same impulse, I think, rather than

any misgivings about my intentions, caused it to disappear down an adjoining tunnel, whence my forceps finally extracted it.

In the season just over (1908) I noticed some felled maple and birch on a hill-side seven miles from Port Hope. At the beginning of June I laid chips about two or three of the stump-heads; on the fallen trunks I found an immense number of a *Chrysobothris* breeding, while under two of my chips on the maple I took two pair of *Urographis fasciata*, and resting on a stump near by I captured a *Leptura biforis*.

About the middle of June my attention was drawn to some white pine felled in the winter among some woodlands known locally as Pine Grove. There were about eight trees in all, lying on the ground within a space of about a mile; on the trunks and branches were crawling a number of small dark *Clerids*, with a mark of crimson and two marks of white on each elytron; there were also two sorts of weevil abundant under chips of wood on the ground, and many *Buprestids* visiting the logs; but, in special, on the trunks, limbs and larger branches there were *Monohammi* breeding; in about six visits I took well over 100 specimens, and my fellow collector continued to find longicorns up to the 20th of July or later; our combined captures would amount to 250 beetles. The great majority of these were *Monohammus scutellatus*, of which I took 100, mostly in pairs; I took besides eight or ten specimens of the large gray *Monohammus* (whether *titillator* or *confusor*, I am not sure), and four of both sexes of the rust-yellow species; we also got several specimens of a stout gray beetle resembling *Urographis*, but without the extended ovipositor, and a few of a gray species of delicate structure and extremely fine antennæ (perhaps *Liopus*); about the middle of July my friend took some 12 specimens of *Leptostylus parvus*. All this on some 10 trunks of newly-felled pine.

Our experience raises a question as to the length of time required by the larvæ to mature. There was a tree among these others that had been blown down early in 1907, and was thus in its second season; it was full of holes, most of them quite fresh, from which mature insects had escaped; we could hear larvæ at work during June inside the log; but we did not see any beetles breeding or laying eggs on the bark, as they were doing on all the fresh-fallen trees. Unfortunately, most of these trees have since been removed. I am inclined to think that the drier the wood is, the longer the larva takes to reach its full growth, and that if the larva hatches in fresh wood it can mature in a single season; I should think this was true of the *scutellatus* anyway, even if *confusor* and *titillatus* require

longer. The well-known stories, most of them authentic, about the mature insect escaping from tables and chair-legs several years after the manufacture of these articles, would thus illustrate an exceptional state of things in which the larva was confronted prematurely with dry wood to feed on.

Besides these captures on stumps and logs, I have made several by using a similar trap, with fungus substituted for bark. But at present I shall content myself in my closing paragraphs with a few general remarks on the subject of blossoms, as a collecting ground for beetles.

If you refer to any handbook of North American flora, you will find about 130 natural orders of flowering plants. The vast majority of these, however, do not offer their sweets (or pollen, rather) to those browsing cattle among insects, the beetles, whose short jaws and general habits incline them to visit only small shallow blossoms growing in close clusters (racemes) or in flat bunches or heads. Nearly all the blossoms that form a favourite haunt for beetles are included in the series between order 25 and order 50, beginning with the sumach and the vine and ending with the composites. The only important beetle-food outside that series, in my experience, is the milkweed and its ally, the dogbane, which come about No. 70 in the natural orders.

If you look a little more closely at the series from 25 to 50, you will find these fall into two distinct groups of eight, separated from each other by a wall of ten consecutive orders unattractive to beetles.

The first group extends from the poison ivy and the grapevine through the New Jersey tea and the spiked maple to the great rose family. Of these, the milkwort and the vetch, from the form of their blossom, are valueless; the poison ivy and the grapevine are fairly good, but the range of their guests is limited. The New Jersey tea is a plant with hardly a rival, both for range of species and for total number of insects. The spiked maple is also a rich storehouse of beetles. In the rose family I have found the hawthorn best, next to it the rose and the bramble, and then the spirea and the chokecherry.

The second group of eight begins with the umbellifers, and passing through the dogwood and the elder, closes with the great composite family. Of these, the bedstraw, valerian and teasel are comparatively worthless; but the dogwood is an excellent host, and so are the two species of elder, while several of the composites are worth careful scrutiny.

I shall carry this principle of selection a little further, by giving a rough outline of a season's beetle-collecting from blossoms. The first blossom to open is the early or red-berried elder (*Sambucus pubens*); it varies considerably from season to season, as well as in any one season, owing to differences of location; but about the 10th of May it will be found flowering, and its season may last for ten days; it is immediately followed by the hawthorn, which lasts till perhaps the 10th of June; by this time the spiked maple and the dogwoods are in flower, and before this last is over comes a riot of blossom; for the late elder and the New Jersey tea, both open in the last days of June.

These blossom haunts, then, extend from early in May till the middle of July. The only other conditions of time that need be mentioned are that the pollen on a given blossom must be in a certain state of ripeness or it does not appear to attract beetles at all, and as a rule the sun must be shining on the blossoms; if it is hot and calm besides, then you have ideal conditions.

There is, however, an important condition of space to add to these of time. I have, as a beginner, spent hours in fruitless search over whole hedges and thickets of elder and bushes of hawthorn, when ten minutes at a single shrub, with only a few meagre blossoms on it, would yield a rich harvest. Why? Because the flowers must be growing near a thicket or a wood; if they are in the open, even a hundred yards or so from timber lands, they are almost useless. This is particularly the case when it is longicorns you are on the lookout for. It is, of course, well known to Coleopterists of experience that a clearing or the border of a wood is the best locality; it is remarked again and again by Bates, in his travels on the Amazon, and it is pointed out by Rye and Fowler, in their hints to collectors in Great Britain.

In closing, I should like to say that by no means the least pleasure to a lover of nature is to observe the marvellous constancy with which season after season these tiny creatures, the offspring of a last year's brood, return to their ancestral haunt, be it blossom or leaf, true to the clock of the year almost to a day; in obedience to a law there is no gainsaying, and which yet in the creature's serene unconsciousness seems robbed of any touch of harsh compulsion.—F. J. A. MORRIS, Trinity College School, Port Hope, Ont.

A KEY TO THE NORTH AMERICAN SPECIES OF AESHNA
FOUND NORTH OF MEXICO.

BY E. M. WALKER, TORONTO.

(Continued from page 391.)

The following notes are intended merely to give a general idea of the distribution, as far as known, of the species of *Aeshna* treated in the key. Detailed lists of localities, references, etc., will appear in the revision:

1. *Aeshna Californica*.—A Pacific Coast species, ranging from Lower California northward into southern British Columbia.

2. *Ae. multicolor*.—This species ranges from Panama through Mexico, and the United States west of Texas and Colorado to southern British Columbia.

3. *Ae. mutata*.—Thus far known only from Indiana and Massachusetts. I have also seen a female from Stewart's Lake, Kent, Ohio.

4. *Ae. palmata*.—This species ranges from Kamtchatka through Alaska and British Columbia to Colorado, Utah and Lower California.

The Lower Californian specimens differ in some degree from the others seen, but are probably not even racially distinct. This species and the following have been generally recorded as *A. constricta*.

5. *Ae. umbrosa* ("*Ae. Z.*," Williamson).—One of the most abundant and widely-distributed species, occurring in a broad belt from the Atlantic to the Pacific in the Upper Austral, Transition and Canadian Zones.

Western specimens approach *Ae. palmata* in the more robust abdomen, larger size of PD and a few other details of coloration, but are otherwise typical.

6. *Ae. constricta*.—Transition and Upper Austral Zones from the Atlantic Coast to the Dakotas and southern Manitoba.

7. *Ae. interrupta* ("*Ae. W.*," Williamson).—Boreal Zone, occasionally appearing in the Transition Zone, from Newfoundland, through Quebec, Northern New England and New York to North-western Ontario and Northern Michigan.

It is very closely allied to the next three forms.

8. *Ae. interna*.—A mountain species, ranging from southern British Columbia to California and New Mexico.

9. *Ae. lineata*.—A species characteristic of the Canadian prairies. It ranges from Manitoba and North Dakota to the Rocky Mountains, and thence northward to Great Slave Lake. It is the common species in Manitoba and Saskatchewan.

10. *Ae. Nevadensis*.—A series of eight males from Reno, Nevada, are the only specimens seen.

The characters by which *Ae. interna*, *lineata* and *Nevadensis* are separated are so slight that it is by no means improbable that intermediate forms may be found. The first two named forms, however, are certainly characteristic of different geographical provinces, and although a considerable series of both has been examined, no intergrades have been seen. There seems to be no constant character for the separation of the females.

11. *Ae. eremita* ("Ae. X.," Williamson).—A very distinct species belonging to the wooded parts of the Boreal Zone from Labrador, Newfoundland and the White Mountains to the Hudson's Bay Slope, Great Slave Lake and Alaska, thence southward in the Rocky Mountains to Wyoming.

It occasionally wanders into the Transition Zone.

12. *Ae. clepsydra*.—Upper Austral and Transition Zones, from New England to Ontario and Indiana.

13. *Ae. Canadensis* ("Ae. Y.," Williamson).—Next to *Ae. umbrosa* this is the commonest *Aeshna* in collections, and is generally known as *Ae. clepsydra*. It is an abundant species in the Canadian division of the Boreal Zone, and is also common in the Transition Zone, from New England and the Maritime Provinces to Manitoba. Typical examples from Washington Territory have also been examined, and its range is therefore probably continuous from Atlantic to Pacific.

14. *Ae. verticalis*.—Very closely allied to *Ae. Canadensis*, but undoubtedly distinct. It inhabits the Transition and Upper Austral Zones east of the Mississippi.

15. *Ae. tuberculifera*.—A somewhat rare species, very distinct from any of the others. It has been taken in some numbers in the New England States, especially in southern Maine, and a few specimens from Ontario and Wisconsin have also been examined.

16. *Ae. juncea*.—A circumpolar species found in America in the subarctic forest belt, from Newfoundland to Alaska and south to the White Mountains, northern Ontario and in the Rocky Mountains to southern Colorado.

17. *Ae. subarctica*.—Boreal Zone, from Anticosti and Nova Scotia to Isle Royale, Mich., and the north shore of Lake Superior.

18. *Ae. sitchensis*.—Boreal Zone, from Newfoundland, through Quebec, northern Ontario, northern Michigan and Minnesota to Alaska.

19. *Ae. septentrionalis*.—Hudsonian division of the Boreal Zone, from Labrador, Newfoundland and the White Mountains to Great Slave Lake.

TWO NEW GENERA OF ORIENTAL HEMIPTERA.

BY G. W. KIRKALDY, HONOLULU, HAWAIIAN ISLANDS.

TESSAROMERUS, gen. nov.

This genus belongs to the Urolabididæ, and differs from all the described genera by having only four segments to the antennæ, the fourth being longer than the third, which is subequal to the second and longer than the first. The labium extends about as far as the base of the middle ambulacra. Lateral margins of pronotum sinuate and a little reflexed. Some of the veins of the membrane are incompletely furcate. Otherwise it is very much like Urochela.

(1) *quadriarticulatus*, sp. nov.—Brownish-yellow, punctured with blackish, a small lævigata pale yellowish spot on each side of the middle of the pronotum. Antennæ blackish.

Length, $9\frac{1}{2}$ mill.

Hab.: China, Yunnan (Montandon, in my collection).

RHEUMATOTRECHUS, gen. nov.

This genus has somewhat the appearance of *Ptilomera* of the Gerridæ, but the legs are much shorter, especially the fore tarsi.

Head as in *Ptilomera*, but the eyes are less oblique, and much less emarginate, the vertex being elongate, and subparallel as far as the articulation of the antennæ. The first segment of the antennæ is little longer than the second. The labium is much as in *Ptilomera*. In the apterous form the pronotum is well rounded at the sides, extending laterally much farther than the eyes. The nota and tergites are much as in *Ptilomera*, but the whole insect is much shorter and broader in proportion, the abdominal sclerites much less elongate, the mesonotum also more rounded laterally. The fore femora are a little incrassate, and are scarcely longer than the tibiæ; fore tarsi very short. Middle and hind legs much shorter than in *Ptilomera*.

(1) *Himalayanus*, sp. nov.—Pale castaneous or fulvous; head with an elongate oval mark on vertex (the interior castaneous) and some lateral marks, dark fuscous. Apex of first segment and apical fourth of second dark fuscous. Eyes dark. Last segment of labium black. Pronotum dark castaneous; a central line and a lateral sinuous one on each side, yellow, the central one narrowly and rather obscurely margined with black, this spreading out a little apically. The mesonotum has a small, subtriangular, fuscous mark on each side subanteriorly. Legs yellowish-fulvous;

apex of tibiæ and the tarsi blackish. Tergites dark castaneous, verging on piceous on abdomen proper and inward half of pleurites; one or two smaller brown spots medially. Beneath yellowish-fulvous, a lateral, sinuous, dark castaneous line on the mesosternum on each side, edged with silver; also some obscure marks. The first segment of the antennæ one-fifth longer than the second. Fore femora scarcely longer than the tibiæ, which are nearly four times as long as the tarsi; last tarsal segment more than twice as long as the penultimate. Middle femora slender, as long as body from base of clypeus to base of pygophor; scarcely longer than tibiæ and tarsi together; tibiæ about twice and a half as long as the tarsi, first tarsal segment twice as long as the second. Hind femora one-third longer than the middle pair; scarcely longer than the tibiæ and tarsi; tibiæ slightly more than twice as long as the tarsi; first tarsal segment not twice as long as the second. The hind part of the metanotum is triangular, the sides shortly truncate, and the base a little emarginate.

♂.—The pygophor is very remarkable, and I hope to figure it in my forthcoming "Notes on the Gerridæ"; the hooks, etc., are yellowish-fulvous, the apices blackish.

Length, 8 mill.

Hab.: India, Kurseong (which I believe is near Darjiling, and is also called "Karsiang"), in coll. Belgium Mus.

This genus has considerable general resemblance to *Chimarrhometra orientalis* (Distant). It is true that Mr. Distant places the latter in the "Halobataria," and indeed originally described the species as *Halobates*! but the emargination of the eyes he might have overlooked. The antennal proportions are, however, quite different, as also those of the labium. It may also be remarked that Mr. Distant has described the labium (*rostrum*) as being composed of five segments!!—a condition unparalleled in Hemiptera; in fact, practically impossible. On referring to the original figure, it is seen that Mr. Distant has mistaken the extruded end of the setæ for a fifth segment!! Mr. Distant cites Bianchi as the authority for the statement that *Chimarrhometra* is a fresh-water Himalayan genus, whereas Bianchi had not seen a specimen of the genus he described, the particulars being taken entirely from those of Mr. Distant. The genus is evidently semiaquatic, and as there is presumably no sea-water in Jhelam Valley, it must necessarily be a fresh-water genus!

It is evident that Mr. Distant's descriptions and figures are quite untrustworthy, and we must await further captures of this interesting form.

A NEW GENUS AND SPECIES OF BLENNOCAMPINÆ
FROM TEXAS.

BY ALEX. D. MACGILLIVRAY, ITHACA, N. Y.

The following species was received from Dr. L. O. Howard, of the U. S. Department of Agriculture, for identification. It was found after careful study to represent an undescribed genus. This genus would fall in the tables next to *Phymatocera*, Dahlb., from which it is readily separated by having the antennæ strongly serrate on one side, the posterior metatarsus as long as all the following segments together, and the posterior tarsi shorter than the posterior tibiæ.

CERATULUS, n. gen.—Antennæ with nine segments, all the segments except the first, second, and ninth strongly produced on one side at apex, the first segment large and globular, the second segment small, broader than long, the third segment short, about twice as long as broad at apex, the fourth segment twice as long as the third, the fifth shorter than the fourth and longer than the third; malar space narrow, hardly more than a line; legs with the front and middle tarsi longer than the tibiæ, the posterior tarsi shorter than the tibiæ; the posterior metatarsus as long as all the following segments together; the claws cleft; the front wings with the radial and the radio-medial cross-veins present, the medio-cubital cross-vein parallel with the free part of $M_3 + 4$, the anal cell petiolate, the radial cross-vein and the free part of R_4 inclined at the same angle, and the free part of $M_4 + Cu_1$ slightly nearer the medio-cubital cross-vein than the free part of $M_3 + 4$; the hind wings with the free part of M_2 present, the first anal cell slightly petiolate at apex. Type *Ceratulus spectabilis*, MacG.

Ceratulus spectabilis, n. sp.—♂ and ♀. Body rufous or reddish, with the antennæ, the tips of the mandibles, the sutures around the ocelli, the legs beyond the apical fifth of the femora, and the saw-guides, black; the wings strongly infuscated, the veins and the stigma black; the labrum broadly rounded, the clypeus truncate; the antennal furrows extending to a large circular excavation above the bases of the antennæ, interrupted on the middle of the front, and continued from opposite the lateral ocelli as narrow, line-like furrows to the occiput; the antennal fovea broad, bounded below by a distinct ridge, the lateral walls of the fovea continued to the ocelli, where they form prominent ridges between the median and lateral ocelli, the lateral ocelli being placed on the sides of the ridges and therefore facing out; the postocular area not bounded in

front by a furrow, and with a more or less distinct median groove; head and thorax covered with a fine, almost colourless pile; the saw-guides straight on the upper margin, and gradually, obliquely, convexly rounded to a blunt point at apex above. Length, 9 mm.

Described from a number of individuals received from Dr. L. O. Howard and Mr. W. D. Hunter, bred from larvæ collected on *Cissus incisa* by Mr. E. S. Tucker at Dallas, Texas. Hunter, No. 1619. Type and paratypes in the collection of the U. S. Department of Agriculture, and paratypes in the Entomological collections of Cornell University.

ENTOMOLOGICAL SOCIETY OF ONTARIO.

The first regular meeting for the season of the Entomological Society of Ontario was held at Guelph on Wednesday evening, November 18th, 1908; the following resolution was unanimously adopted:

"The members of the Entomological Society of Ontario have heard with profound regret of the death of their esteemed and beloved President, Dr. James Fletcher. They one and all feel that they have lost a personal friend whose place in their affection and regard can never be filled, and that the Science of Entomology in Canada has been deprived of its leader and most able exponent. Those who have had the privilege of knowing Dr. Fletcher must share our grief, and will, with us, treasure in their hearts a grateful recollection of his unbounded kindness and geniality, his generous assistance freely given to all who applied to him, and the enthusiasm in the study of nature which he everywhere inspired.

"On behalf of the Society, in which he took so active an interest during a great many years, we beg to offer to Mrs. Fletcher and her daughters this expression of sympathy with them in their sore bereavement, and to assure them that their grief is shared by a large circle of friends in all parts of the country."

The following papers were read:

The Classification of the Muscoidean Flies, by Mr. W. R. Thompson.

Rearing Pomace Flies (*Drosophilidæ*), by Mr. E. Stafford.

The former paper, which was illustrated with diagrams and figures on the blackboard, furnished a general classification of the superfamily, and then dealt more particularly with the parasitic Tachinidæ. The latter paper gave the results of some careful observations made on the life-history of these minute Dipterous Flies which are to be found in cider

mills and other places where there is fermenting vegetable matter. Both writers, who are Fourth-year students in the Ontario Agricultural College, were complimented on the excellence of their papers and the careful scientific work which they had performed.

Owing to the lamented death of Dr. Fletcher, the following officers were elected:

President—Tennyson D. Jarvis, B. S. A., Lecturer in Entomology and Zoology, Ontario Agricultural College, Guelph.

Vice-President—E. M. Walker, M. D., Lecturer in the Biological Department of the University of Toronto.

MONTREAL BRANCH.

At the monthly meeting of the Montreal Branch, held at 850 St. Hubert Street, on Saturday evening, November 14th, the following resolution was passed:

Moved by Henry H. Lyman, seconded by A. F. Winn, and resolved:

That the members of the Montreal Branch of the Entomological Society of Ontario, having learned with unfeigned sorrow of the untimely death of Dr. James Fletcher, President of the Parent Society, and Entomologist and Botanist of the Dominion Experimental Farms, desire to place on record their high appreciation of his eminence in his field of labour, and of his lovable personalty. They feel that in his death the Society and Entomological Science in Canada have sustained a great loss, and desire to assure his widow and family of their sincere sympathy in their great bereavement.

That copies of this resolution be forwarded to Mrs. Fletcher, to the Parent Society and to the daily press.

NEPYTIA PELLUCIDARIA, Pack.—Since my notes on this species were written (CAN. ENT., Vol. XXXIX, p. 171) I have been permitted to examine the types of Geometridæ described by Dr. Herman Strecker at Reading, Penn. My conjecture, that his *Cleora fumosaria* is the same as this species, proves correct, and it must hereafter be listed as a synonym of *pellucidaria*, Pack.—RICHARD F. PEARSALL, Brooklyn, N. Y.

"MEIGEN'S FIRST PAPER ON DIPTERA."

BY D. W. COQUILLET, WASHINGTON, D. C.

In attempting to settle the status of names affecting the nomenclature of any class of animals or plants, unless this is done in an impartial manner the reader will be unable to form an unbiased opinion from the statements set forth. The present remarks are called forth by a perusal of the article under the above caption, which appeared in the CANADIAN ENTOMOLOGIST for October, pages 370 to 373.

No student who has seen Meigen's paper of 1800, or Mr. Hendel's reproduction of it, can truthfully say that the author has not complied with the rules adopted by the International Zoological Congress. There is, first, the name of the proposed new genus in proper Latin form, then a description of the genus, followed by a statement of the number of species known to the author as belonging to the genus. The author, therefore, had a correct idea of binomial nomenclature, and, so far as he went, he applied it in this paper. That a genus can be founded without being accompanied by the name of any species, is allowable under Article 2 of the International Code, which holds that "The scientific designation of animals is uninominal for subgenera and all higher groups." It has not infrequently happened that an author has founded a genus in one number of some journal without any mention of species, but has treated the species in a subsequent number, and students have almost universally taken the first date as the real date of the genus, a view held to be correct by the Code. The case of Meigen's generic names is similar to this, the difference being that before treating of the species (in 1804) he published a second paper on genera (1803), changing several of the names given in his previous (1800) paper. In a few cases such changes were allowable on the score of preoccupation, but in the other instances the changes were unjustified, and therefore the old names must be restored under Article 25 of the Code—the well-known law of priority.

As to the contention that these old genera of Meigen are invalid on the score of having no type species, Rule 7 under Article 30 of the Code covers this point: "In case a generic name without designated type is proposed as a substitute for another generic name, with or without type, the type of either, when established, becomes *ipso facto* the type of the other." On this principle, the type species of any one of Meigen's genera of 1803 is the type of his corresponding genus of 1800. Among the generic names of 1803, no less than twenty were also unaccompanied by the name of a species, yet these very generic names, with few exceptions, are now in current use.

That Meigen's names are *nomina nuda*, as has been claimed, is clearly erroneous; each is accompanied by a description, which effectually removes them from this class of names.

Nor have these names been entirely neglected since they were first published in 1800. Latreille, in his "Histoire Naturelle des Crustacés et des Insectes," Vol. III, published only two years after Meigen's paper first appeared, used several of them as subgenera, and in giving a resume of Latreille's classification, Meigen himself connected most of them with his 1803 names (see his "Klassifikation und Beschreibung der europäischen zweiflügligen Insekten," 1804, pages xv-xxiii).

Article 32 of the Code holds that "A generic or a specific name once published cannot be rejected, even by its author, because of inappropriateness." There is, therefore, no escaping the using of such of these names as are not synonyms or homonyms.

There are, and always have been, obstructionists in almost every field of science. Osten Sacken refused to use the old generic names of Rondani in the Cecidomyiidae, and Grote steadfastly rejected those proposed by Hübner in his "Tentamen"; yet both of these classes of names have since come into general use. Our individual preferences amount to but little; what the rank and file of the students of this and of future generations are going to do in the matter of nomenclature is all-important, and any effort to prevent others from following well-recognized rules and scientific usages cannot, by any method of reasoning, be regarded as being in the best interest of science.

SOME NOTES ON *METAPELMA SPECTABILIS*, WESTW.

BY CYRUS R. CROSBY, CORNELL UNIVERSITY, ITHACA, N. Y.

On August 12, 1907, I captured a male of this species on the window of the Insectary at Cornell University. While it agreed fairly well with Westwood's concise description given in Proc. Zool. Soc., Lond., III, p. 69, 1835, and in his Thesaurus Entomologicus Oxoniensis, p. 149, I could not make sure of its identity without having the female, as the description is evidently based upon that sex alone.

Through the kindness of Dr. E. P. Felt, of the New York State Museum, Dr. L. O. Howard, and the authorities of the United States National Museum, I now have before me eight males and seven females. Three of these specimens were determined by Dr. W. H. Ashmead.

Westwood's specimen was from Georgia, and as the description is inaccessible to many, it is here reproduced:

December, 1908

"*Metapelma spectabilis*.—Met. capite thoraceque viridibus, cupreointentibus; antennis nigris; abdomine nigro, chalybæo purpureoque nitente; pedibus quatuor anticis ferrugineis viridi subnitentibus; tarsis intermediis fuscis ad basin albidis; pedibus duobus posticis fuscis femoribus basi rufis; tibiis basi albis; oviductu nigro; alis pone medium nubecula vix infumatis.

"Long. corp. lin. $2\frac{1}{4}$; oviductus, lin. 1; exp. alar. lin. $3\frac{3}{4}$."

Among the specimens before me the females vary in length from $3\frac{1}{4}$ – $4\frac{3}{4}$ mm., and the males from $2\frac{1}{2}$ – $4\frac{1}{2}$ mm. The length of the ovipositor is considerably less than that indicated by Westwood, being from .7–1.3 mm. The antennæ are inserted farther from each other than from the eye margin. The scape is greenish, with a metallic lustre. In both sexes the posterior femora vary from dusky to yellowish brown, there being no reddish at the base in these specimens. The white spot at the base of the posterior tibiæ is confined to the upper basal third, and is bounded by a straight diagonal line in most of the specimens; in two males from Florida and one male from Tuscon, Ariz., it surrounds the base; in a male from Santa Cruz Mts., Cal., and a female from Panamint Mts., Cal., the spot is shorter and broader, and bounded by a curved instead of a straight line. The specimens from Florida and the South-west have the posterior

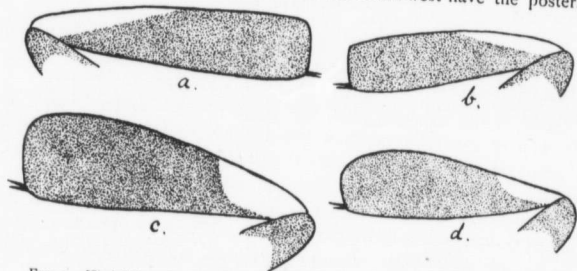


FIG. 20.—Hind tibiæ of *Metapelma spectabilis*, Westw., showing variations in form and markings. (a) Female, Iliion, N. Y.; (b) male, Ithaca, N. Y.; (c) female, Panamint Mts., Cal.; (d) male, Santa Cruz Mts., Cal.

tibiæ more strongly dilated than the Eastern forms (Fig. 20); the Virginian forms have the white spot long and narrow as in the Northern specimens, while the tibiæ are intermediate in width.

The specimens examined by me are as follows:

1 ♂, 1 ♀, Albany, N. Y., May 7 and 11, 1903, reared from an ash stick infested by *Obrium rubrum*; 2 ♀'s, Iliion, N. Y., 10th June, 1902,

"reared from hickory limb bearing large black knots, and from which were reared *Dicerca lurida*, *Chrysobothris femoratus*, *Magdalis olyra*, *Lepturges querci* and *Chramesus icoria*, the *Magdalis* being perhaps the more abundant." E. P. Felt *in lit.*; 1 ♀, Washington, D. C. (W. H. Ashmead); 1 ♀, Norfolk, Va.; 2 ♂'s Len Haven Road, Va., bred by Hopkins from a Rattan Vine; 2 ♂'s, Cocoanut Grove, Fla., May, 1887 (E. A. Swartz); 1 ♂, Santa Cruz Mts., Cal.; 1 ♀, Los Angeles, Cal.; 1 ♂, Tuscon, Ariz., reared Feb, 1897, from Mesquite twigs by H. G. Hubbard; 1 ♀, Panamint Mts., Cal., April, 1891, and 1 ♂, 12th Aug., 1907, Ithaca, N. Y.

The other species of the genus *Metapelma* are distributed as follows *M. gloriosa*, West., Luzon, Philippines; *M. rufimana*, Westw., Sarawak, Borneo; *M. taprobana*, Westw., Ceylon; *M. obscurata*, Westw., Eastern India; *M. mirabilis*, Brues, Cape Colony.

A NEW NAME IN MEGACHILE.

Megachile geophila, n. n.—*Megachile terrestris*, Ckll., Ann. Mag. Nat. Hist., March, 1908, p. 260 (not of Schrottky, 1903). Florissant, Colorado.

T. D. A. COCKERELL.

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Mailed December 8th, 1908.

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 CORRIGENDA.
 Page 124, line 15, for *Macophora* read *Nacophora*.
 Page 192, line 6, for *Lycaea* read *Lycæna*.
 Page 227, line 4 from bottom, for *negascia* read *nefascia*.
 Page 303, line 1, for *Eleas* read *Fleas*.
 Page 360, line 19, for "fused metasternum and first abdominal sternite" read "metasternum."