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The Bee Fauna of Calgary, Alberta

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THE BEE FAUNA OF CALGARY, ALBERTA.

BY T. D. A. COCKERELL, UNIVERSITY OF COLORADO.

I am indebted to Mr. F. H. Wolley Dod for a small but interesting collection of bees, which he obtained this year at Calgary. While there is nothing new to science, the collection is worth recording on account of the light it throws on the bee fauna of that region. The fauna is a composite one, with elements which seem to have been derived from different directions. It may be roughly divided into groups as follows:

1. Alaskan type.

Bombus flavifrons dimidiatus, Ashm.—Three females, June 15–21. The connection of this insect with *flavifrons* was discovered by Mr. Franklin, who will give full particulars in his forthcoming monograph.

2. Pacific Coast type.

Bombus Californicus, Cresson.—Four females, June 14–20, one at flowers of purple columbine in garden. These show variable indications of pale hair on the scutellum, and are thus transitional to the Rocky Mountain *B. dubius*.

3. Types characteristic of the North-eastern States.

Bombus consimilis, Cresson.—One female, July 14.

Bombus terricola, Kirby.—Two females, June 2 and July 14. Originally described from 65° n. lat.

Halictus Provancheri, D. T., and *Halictus albipennis*, Rob.—Females of each, June 14.

4. Types characteristic of the Rocky Mountains, though some are more widely distributed.

Psithyrus insularis, Smith.—Goes west to Vancouver Island.

Bombus bifarius, Cresson.—Five females, May 25, at bearberry. Very finely coloured specimens.

B. Edwardsii Cooleyi, Morrill.—One female, May 27, at bearberry. The relationship to *Edwardsii* was made out by Mr. Franklin, though I believe he does not employ the varietal name.

B. flavifrons, Cresson.—Six females, June 13 to 21. One at purple columbine in garden.

B. Nevadensis, Cresson.—Two females, June 22.

B. rufocinctus phaceliæ, Ckll.—One female, June 15.

B. rufocinctus astragali, Ckll.—One female, June 14.

January, 1910

Hy menoptera - *Apidae* - *Apidae* - *Apidae* - *Bombinae* - *Bombus*

See page 26 for
another paper

SOME NEW AND RARE DIPTERA FROM WISCONSIN.

BY S. GRÆNICHER, PUBLIC MUSEUM, MILWAUKEE.

Two of the species considered in this paper were found in the eastern part of Wisconsin. The others were taken last summer in the north-western part of the State by the collecting expedition of the Milwaukee Public Museum down the St. Croix River.

Zodion lativentre, n. sp.—Length about 7 mm. Thorax black, with dark gray pollen. Abdomen broad, mostly dark red. Front reddish-yellow below, darker above, slightly pollinose along the sides. Occiput black. The black pile of the latter is longer and more dense than that on the front. Antennæ red, with a dark arista. Face and cheeks entirely yellowish. Cheek nearly as broad as the vertical diameter of the eye. Proboscis black, not quite twice as long as the head. Thorax with two broad, black, abbreviated, and widely separated stripes. Between these there are two narrow shining black stripes, extending from the suture to the front part of the thorax. Scutellum rounded, dark pollinose. The pleuræ are covered with pollen of a lighter shade than that on the mesonotum. First segment and anterior half of second segment of abdomen black, opaque. The rest of the abdomen is dark red, except the sides of the fourth and fifth segments, which are blackish. A narrow median pollinose stripe extends from the black area of the second segment to the fifth segment. All of the segments with more or less gray pollen on their sides. Hairs on thorax and abdomen all black. Legs red, with the exception of the upper surfaces of the front femora, which are black. Colour of the tarsi darker towards their tips. Wings with a brownish tinge, and an open first posterior cell. This species runs in Adams' table of the species of *Zodion* to No. 9 (Kans. Univ. Sc. Bull., II, 32), but it is quite distinct from any of the three species occupying that part of the table. Its colour and broad oval abdomen, taken in connection with its size, render it easily recognizable.

A single specimen, a male, was taken July 13, 1909, near the mouth of the Yellow River, Burnett Co., by the Milwaukee Publ. Mus. coll. exped. It is deposited in the collection of the Museum.

Anthrax Nemakagonensis, n. sp.—Length, 8-10 mm. Black; first antennal joint, lower part of face, and legs reddish. Front yellow tomentose and black pilose. First joint of antennæ twice as long as

January, 1910

Diptera—Conopidae
 " Bombyliidae
 " Syrphidae

second, third elongate-conical at its base. Epistoma greatly produced, sparsely covered with yellow tomentum. Proboscis not surpassing the oral margin. Occiput beset with yellow tomentum. Thorax with yellow tomentum, and copious long pile of lighter colour on the anterior margin, along the sides and on the pleuræ. There is a distinct patch of white pile, beginning above the root of the wing, passing around in front, and ending on the pleura below the root of the wing. In some specimens the patch is present on the pleura only. Bristles at the posterior angles of the thorax yellow, those along the posterior margin of the scutellum black. The tomentum of the scutellum is yellow. Abdomen with a mixture of black and yellow tomentum, the latter colour prevailing, the black mostly on the middle of the second, third and fourth segments. Light yellow pile on the sides of the abdomen, except at the posterior angles of the second, third, fourth and fifth segments, where it is black. Venter black, with yellow tomentum. Front tibiæ bristly. Legs yellow tomentose. Reddish colour of the legs changing to black on coxæ and tarsi. Claws of front tarsi distinct. Basal portion of wings brown, the apical portion entirely hyaline. The outline of the brown colour extends in a more or less broken line from the apex of the auxiliary vein to a point on the hind margin of the wing, situated a little inside of the apex of the axillary cell. Apex of the anal cell hyaline in all of the specimens, that of the axillary cell distinctly hyaline in some of the specimens only. A round hyaline spot at the antero-exterior angle of the second basal cell.

In the distribution of the brown colour on the wing, as in several other characters, this species comes close to *A. perplexa*, Coq., a Californian species. It differs from that, however, in having a shorter proboscis, yellow tomentum on the occiput, black bristles on the scutellum, and in some other points of minor importance. In the description of *A. perplexa* no mention is made of a hyaline spot in the second basal cell, a character which is present in each of the specimens of *A. Nemakagonensis*. This species is not rare in the St. Croix region. Sixteen specimens, all of them in the collection of the Milwaukee Publ. Mus., were taken last summer by the collecting expedition of that institution as follows: Four, July 25, near the mouth of the Nemakagon River, Burnett Co.; ten, July 28-30, near the mouth of the Yellow River, Burnett Co.; one, Aug. 4, near the Kettle River Rapids, Burnett Co., and one, Aug. 6, at Randall, Burnett Co.

Phthiria Aldrichi, Johnson.—(Psyche X, pp. 184-185.) On July 23, 1907, I collected at Cedar Lake, Washington Co., Wis., two female

specimens that are smaller than those from the type locality (Caldwell, Idaho), being about $2\frac{1}{2}$ mm. long, but undoubtedly belong to this species. In their markings they differ slightly from the type, as seen from the following: First joint of antennæ yellow; basal two-thirds of second joint black, the tip yellow; third joint black, with a very narrow yellow base. In one of the specimens the front, except ocellar tubercle and the face, entirely yellow; in the other there are three minute parallel dark lines running from the ocellar tubercle to within a short distance of the antennæ. Prof. Aldrich, who furnished the type specimens, states (Psyche, loc. cit., p. 185) that he collected them on a white sand bar along the Boise River at Caldwell, Idaho, June 24, 1901. It is very pale in life, and flies just like the drifting of the sand, close down and a short distance at a time. It is a fine instance of protective coloration. The male has beautiful purple eyes in life. My specimens were taken during the hottest hours of the day at the flowers of *Rudbeckia hirta*, in a sand pit on the southern slope of one of the numerous moraines that form the characteristic features of the topography of that region.

Pyrophæna, Schiner.—In its geographical distribution this genus is restricted to the boreal areas of Europe (probably Eurasia) and North America, and is represented by two species only, both of which seem to be of rare occurrence in both hemispheres.

P. rosarum, Fabr.—Osten Sacken referred to this species in his Catalogue of N. Am. Diptera (1878) as having been found in the White Mts. of New Hampshire and in Massachusetts, but since that time it has not been reported from any part of this continent, and Prof. Williston states in his Synopsis of the N. Am. Syrphidæ that he does not know the species. A male specimen collected by the writer, June 5, 1898, in a tamarack swamp at Elkhart Lake, Sheboygan Co., Wis., evidently belongs here. It has a length of 9 mm. The two yellow spots on the third abdominal segment are narrowly separated, rounded posteriorly, and occupy the anterior two-thirds of the segment. In addition to these there are two faint and much smaller spots on the fourth segment that are widely separated, and take up hardly the anterior third of the segment. The occurrence of such spots on the fourth segment is not mentioned in the original description, but otherwise the specimen agrees very closely with the description.

P. granditarsus, Forster (*P. ocyi*, Fabr.).—A male specimen in the collection of the Milwaukee Publ. Mus. was taken by the Museum coll. exped. July 25, 1909, near the mouth of the Nemakagon River, Burnett Co. This male shows the black spots on the posterior angles of the second and third abdominal segments, which are referred to in Prof. Williston's description (Synopsis of the N. Am. Syrphidæ, p. 56), as occurring in the female, but not in the male sex. This species is to all appearance not quite as rare as the preceding, it has been reported so far from several points in Canada, New Hampshire (White Mts.), and Massachusetts in the Eastern, and Washington in the Western United States.

3077 SOME RECORDS OF HETEROPTERA.

BY J. R. DE LA TORRE BUENO, NEW YORK.

I am indebted to the kindness of Mr. R. P. Dow for the insects enumerated hereafter, which were taken the past summer. There is nothing extraordinary about them, but they show the distribution of certain species. From De Bruce, Sullivan Co., New York, the following are recorded :

Thyreocoris unicolor, P. B.

Euschistus fissilis, Uhler.

Thyreocoris lateralis.

Podisus cynicus, Say.

Euschistus variolarius, P. B.

From Claremont, N. H., came the following :

Homæmus æneifrons, Say.

Nysius angustatus, Uhl.

Eurygaster alternatus, Say.

Phlegyas abbreviatus, Uhl.

Perillus circumcinctus, Stal.

Ligyrocoris contractus, Say.

Podisus modestus, Dallas.

Lygæus kalmii, Stal.

Podisus serieiventris, Uhl.

Calocoris rapidus, Say.

Cosmopepla carnifex, Fab.

Capsus ater, Linn.

Mormidea lugens, Fab.

Aneurys inconstans, Uhl.

Euschistus fissilis, Uhl.

Sinea diadema, Fab. (Nymphs.)

Euschistus tristigmus, Say.

Triphleps insidiosus, Say.

Alydus eurinus, Say.

It will be noted that the newer synonymy has not been employed, this being done in order to facilitate reference to Prof. Uhler's "Check List," and Lethierry and Severin's "Catalogue Général."

BOOK NOTICES.

CONTRIBUTIONS TOWARDS A MONOGRAPH OF THE SCOLYTID BEETLES.

1. The Genus *Dendroctonus*, by A. D. Hopkins, Ph. D.

This excellent monograph of the genus *Dendroctonus* was issued by the United States Department of Agriculture as Bulletin 17, part 1, of the Bureau of Entomology. It contains 164 text pages, eight full-page plates, and 95 text figures. The genus *Dendroctonus* had previously been dealt with by Dr. Leconte, in 1868 and 1876, and by Dr. Dietz in 1890. Now, after a long study of a large amount of material, including the available types, Dr. Hopkins has completely revised the classification, described several new species, and the younger stages of many, and has allotted the references in literature to their proper titles. In short, he has given us a complete and scholarly monograph of the genus, lacking only the bionomic features, which are promised for a future paper.

The first portion of the work deals with the history of the genus, the original description by Erichson, and a revised description by the author. The last extends over sixty pages, and includes forty-four excellent figures. The figures, with the exception of two, deal with the external and internal anatomy of the adult and larva of *D. valens*, and with the external characters of the pupa. This series of drawings is by far the finest yet published on the anatomy of the Scolytid beetles, and will be of great assistance in future descriptive work in the Scolytidæ.

"In all of this anatomical work the object of the author has been to acquire direct information on the facts as they exist in the subjects examined; such information to furnish a basis for the determination, naming, description and illustration of the anatomical elements as represented in the Scolytid beetles, and at the same time to serve as a guide to the determination of further facts relating to insect anatomy in general."

The text of this portion of the work presents many points of much interest to students of insect anatomy, too many even to mention in this short review.

The reversal of secondary sexual characters within the genus, referred to on page 52, is particularly interesting, as is also the discussion of "Progressive Modifications," with the accompanying plates of eyes, antennæ and tibiæ.

The variation in the epistoma of *D. valens*, as illustrated in fig. 10, will prove interesting to those familiar with the genus. It will be remembered that Dr. Dietz based his classification of this genus largely upon the characters of the epistoma, which he considered of specific value. I have never been able myself to find any such variations as Dr. Hopkins has figured. Thus again is emphasized the value of a long series of specimens in a study of this nature.

The last half of the work deals with the description and classification of the species. Including the new forms described, twenty-four species are now contained in the genus. The method of treatment is systematic and thorough. The species are usually discussed under the following sub-heads: Adult, Variations, Distinctive Characters, Pupa, Larva, Galleries, Distribution, Host Trees, Identified Specimens, Bibliography and Synonymy. A drawing of the adult and a chart showing the distribution are given in each case, and usually excellent figures of the galleries are included.

The bewildering tangle heretofore presented by the literature dealing with several of the species has been cleared up completely, and the "Revisional Notes" under certain of the species are invaluable.

Useful tables are given of the Secondary Sexual Characters, Pupal Characters, Larval Characters, Gallery Characters, Distribution, Relation of Species to Host Trees, and of the Host Trees themselves. A very complete Bibliography of the genus is given at the close.

More detailed descriptions of the new species described might perhaps have been desirable, in view of future descriptive work, and the key to the adult, while excellent, seems to present a few weak points; however, a perfect key to the genus *Dendroctonus* is hardly to be expected in this life.

The work throughout is systematic and complete, one of the best productions of its kind yet given us by American Entomologists.

All students of the Scolytidæ will look forward with the greatest pleasure to the completion of Dr. Hopkins's "Monograph of the Scolytid Beetles."—J. M. SWAINE.

OUR INSECT FRIENDS AND ENEMIES: By John B. Smith. Lippincott Co., Philadelphia. (\$1.50.)

This book of 314 pages is the most interesting and comprehensive, popular and yet scientific account of insects as the friends or enemies of man, that we have yet seen,

In the first chapter the author defines what is meant by an insect, and for convenience divides all insects into eight orders. In following chapters he takes these orders in turn and discusses their beneficial or injurious relationship to plants, to man and to other animals. In addition, chapters are devoted to an account of the natural forces that keep insects under control, especially where the balance of nature is not disturbed by man. Of special interest in this connection is his description of the part played by parasites, by climate and by disease in checking increase.

The author's remarks on birds are likely to cause a good deal of criticism from bird admirers. He attributes to the feathered tribe much less importance than most writers on the subject would give them. In doing so, however, he states explicitly that birds have an important function to perform in connection with insect control, but that so far as our worst pests are concerned, their value has been greatly exaggerated. If birds are of less importance than many think, much less value, he claims, is to be attributed to protective coloration than popular opinion would give it.

The part dealing with insects as carriers of disease is full of valuable information, obtained from the results of the most recent investigations. Household insects come in for a good deal of attention, nearly all the species found being discussed and remedies suggested, so that this is a very valuable chapter.

Throughout the book Dr. Smith has never lost sight of the economic aspect, and the numerous references to individual species of an injurious nature are made more valuable by the suggestions for control which almost invariably follow.

The last chapter is called "The War on Insects," and is a resume of all the most up-to-date methods adopted by man for controlling injurious species.

The value of the book is considerably increased by frequent illustrations. Entomologists will find this work a boon to them, inasmuch as it brings within handy reach a mass of valuable information that is frequently required, and that would otherwise be obtained only through much searching. The general public will find it a most interesting revelation of a new world of marvellous interest, into which they have found it difficult to get more than a mere glance in popular books. The book should be in every farmer's home, and in every school and college library.—L. C.

Mailed January 15th, 1910.