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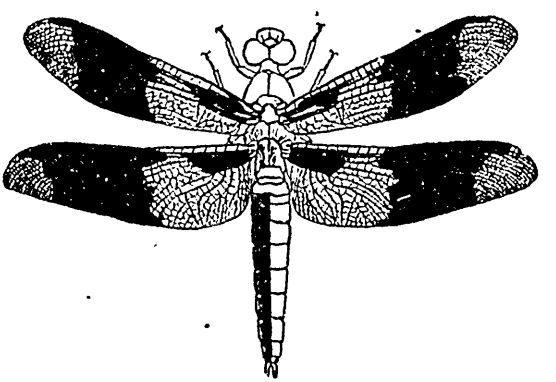
The Canadian Entomologist

VOLUME XXIX.

No. 2.



LIBELLULA TRIMACULATA.

EDITED BY

REV. C. J. S. BETHUNE,

PORT HOPE, ONTARIO.

FEBRUARY, 1897.

LONDON:
LONDON PRINTING AND LITHOGRAPHING COMPANY.
1897.

EXCHANGE.

Subscribers are invited to make liberal use of this column. Notices over three lines are liable to be shortened if necessary. All insertions free to subscribers.

WILL COLLECT any Aquatic insects to exchange for Odonata and Plecoptera, nymphs or imagoes; nymphs preferred. Will determine nymphs or imagoes in these orders for duplicates. JAMES G. NEEDHAM, Cornell University, Ithaca, N. Y.

COLLECTORS OF AQUATIC COLEOPTERA should save all the Aquatic Hemiptera taken with the beetles, dredging or at light. I will give exchange for all such Hemiptera in any order, or purchase CARL F. BAKER, Auburn, Alabama.

COLEOPTERA.—Exchange desired; only perfect specimens given and received. Will also collect in other orders in exchange for Coleoptera of N. A. R. J. CREW, 105 Oak St., Toronto, Ont.

COLEOPTERA.—Exchange desired with collectors in other regions. Invertebrates and reptiles in alcohol, and bird skins also received. HARVEY N. DAVIS, 21 George street, Providence, R. I., U. S. A.

N. A. LEPIDOPTERA not in my collection wanted; offer Manitoba Lepidoptera and Coleoptera. Send lists to A. W. HANHAM, Bank of B. N. A., Winnipeg, Man., Can.

LEPIDOPTERA.—I have for exchange duplicates collected last summer, also cocoons of Cecropia and Polyphemus. J. TOUGH, 156 South Water St., Chicago, Ill.

WANTED.—The 2nd and 3rd Report of the Ent. Soc. of Ontario. Address, HOWARD EVARTS WEED, Agricultural College, Miss.

LEPIDOPTERA FROM MINNESOTA.—To exchange for the same from other localities. Send lists to H. W. EUSTIS, 31 Elbert St., Augusta, Ga.

WANTED.—Live pupæ (cocoons) of Attacus Columbia, Gloveri, Ceanothi, etc., for such of Saturnia Pyri, Pavonia, Spini, etc. HERMANN AICH, Elberfold, Germany.

COLEOPTERA.—Will exchange for species not represented in my cabinet. Coccinellidæ and Cicindellidæ especially desired. Good returns. FREDERIC ORMONDE, 59 Eustis Street, Boston, Mass.

CANADIAN ICHNEUMONIDÆ.—Will be glad to purchase undetermined material in this family, particularly from the vicinity of Quebec. Will determine or exchange specimens if parties prefer. G. C. DAVIS, Agricultural College P. O, Michigan.

COLEOPTERA.—Wanted, Haliplidæ, Gyrinidæ, and Rhynchitidæ, named or unnamed; also Attelabus genalis. Good returns of named N. American Coleoptera. RALPH HOPPING, Redstone Park, Kaweah, California.

Correspondents desired in any part of the world who will collect Hesperidæ (either named or unnamed) in exchange for N. H. Lepidoptera. W. F. FISKE, Mast Yard, N. H., U. S. A.

TENTHREDINIDÆ AND UROCERIDÆ wanted from all parts of the United States and Canada, especially the south and south-west, either by purchase or exchange. Will name specimens for privilege of retaining duplicates. ALEX. D. MACGILLIVRAY, Cornell University, Ithaca, N. Y.

WANTED.—Diptera of the families Sarcophagidæ and Muscidæ (sensu stricto) from all localities. Will purchase or exchange for insects of any order. GARRY DEN. HOUGH, M. D, 542 County St., New Bedford, Mass.

HYMENOPTERA.—Fossores and Bees wanted from West and South (named or unnamed). Offer in return good American and European Col., Lep. or Hym. S. N. DUNNING, 43 Niles St., Hartford, Ct., U. S. A.

HEMIPTERA AND HYMENOPTERA.—Liberal exchange for named or unnamed specimens. Also offer Coleoptera, or pay cash. Will determine Jassidæ. CARL F. BAKER, Auburn, Alabama.

VANCOUVER ISLAND.—Lepidoptera for sale or exchange—*C. gigas, M. Taylori, A. rhodope; New noctuidæ.* W. H. DANBY, P. O. Box 314, Victoria, British Columbia.

EUROPEAN COLEOPTERA.—I have a large quantity of European Coleoptera which I wish to exchange for American. Lists furnished. PAUL J. ROELOFS, 90 Rue van Straelen, Antwerp, Belgium.

COLEOPTERA.—I wish to exchange for N. A. species not already in my cabinet. Canadian especially desired. Good returns. H. F. WICKHAM, Iowa City, Iowa, U.S.

HYMENOPTERA.—Will name parasitic species for privilege of retaining duplicates, or will exchange; *Braconidæ* especially desired in order to complete a monograph of our N.A. species. Address, WM. H. ASHMEAD, 1821 Q Street, N.W., Washington, D.C.

REV THOMAS W. FYLES, F. L. S.

The Canadian Entomologist.

VOL. XXIX. LONDON, FEBRUARY, 1897. No. 2.

THE REV. THOMAS W. FYLES, F. L. S.

We have much pleasure in presenting to our readers the excellent portrait of our colleague, the Rev. Thomas W. Fyles, who has been for many years an active member of the Entomological Society of Ontario. Though living at South Quebec, he has regularly attended the annual meetings at London, travelling many hundreds of miles in order to do so, and has invariably delighted those present with his excellent papers. He was a member of the Council from 1882 to 1888, when the change in the Act of Incorporation required the directors to be resident within certain districts of the Province of Ontario. Three times he has represented the Society as their delegate to the Royal Society of Canada at Ottawa, and he has been a member of the editing committee of the CANADIAN ENTOMOLOGIST since 1889. While filling the arduous position of chaplain to the immigrants landing in Canada, under the auspices of the Society for Promoting Christian Knowledge, he devotes any spare moments that he can get to the study of entomology. He has succeeded, with an energy and enthusiasm worthy of admiration, in forming an extensive collection of insects, and acquiring a knowledge of the science beyond what is ordinarily met with. That he may long continue to carry on his excellent work, both in his official position and in his scientific pursuits, is the hearty wish of all his friends.

A PARASITE OF HEMIPTEROUS EGGS.

BY T. D. A. COCKERELL, MESILLA, N. M.

The following description is offered of an insect to which I shall have occasion to allude in a forthcoming Bulletin, wherein such descriptive matter would be inappropriate.

Hadronotus mesillæ, n. sp.—♂. Length slightly over 1 mm.; black; coxæ black, legs otherwise rufous. Antennæ dark rufous, arising just above mouth, delicately pubescent; pedicel oval, shining, punctured, conspicuously shorter than the long first flagellar joint; second flagellar joint shorter than the first, but fully twice as long as broad; third to fifth joints oval, shorter than the second, the third slightly longer than the

following, all longer than broad. Head short, broadly transverse, slightly broader than thorax; lateral ocelli separated from the eyes by a space about equal to their own diameter; a depression in front of middle ocellus. Frons and face minutely reticulated by grooves, reminding one of crocodile hide. Thorax subglobular, somewhat broader than long, with very sparse short pubescence; anterior part of mesothorax very indistinctly subreticulately sculptured, its anterior margin with a distinct row of pits. Hind portion distinctly but very delicately and minutely reticulated with raised lines. Scutellum smooth, with a few hairs; hind margin of scutellum and postscutellum with a row of pits. Abdomen short and broad, carinated at sides, smooth, rather shiny. Wings hyaline, quite hairy, fringe short, nervures rufofulvous; marginal vein short, not half length of stigmal.

Habitat.—Las Cruces, New Mexico; bred from eggs of some Hemipteron, apparently Pentatomid. The eggs are barrel-shaped, pale green with a white base and a white ring at top, the lid with a white central ringlet, and its suture white. Only one specimen was bred, and the tips of its antennæ are broken off, but the species differs at once, by its reticulate sculpture and other characters, from all those described by Mr. Ashmead in his Monog. Proctotrypidæ or in his work on the Hymenoptera of St. Vincent. Another parasite of Pentatomid eggs occurs in the Mesilla Valley, namely, *Trissolcus euschisti*, Ashm. (a Mesilla example det. Ashm.). With us, I believe it is a parasite on the eggs of *Brochymena obscura*, H. S., which abounds in orchards.

NOTES ON VANESSA INTERROGATIONIS.

BY W. F. FISKE, MAST YARD, N. H.

I remember about ten years ago to have taken several large specimens of a Grapta, probably *G. interrogationis*, but they were lost without being identified. I saw no more of the species until August, 1895, when I took a fine example of the form *Fabricii*. It proved to be the forerunner of a "wave" of the species, and from that date until frost a number were seen, perhaps in all twenty or more, but all but two of them were of the form *Fabricii*. This spring I watched the hibernating butterflies closely hoping to obtain a fertile female and rear a brood of larvæ, but although there were many *G. comma* and *j-album*, and a few *progue* and *faunus* on the wing throughout April, I did not observe one *interrogationis* amongst them. By the middle of May the other species of Grapta had

disappeared, or were represented by a few specimens worn almost beyond recognition. I had about given up meeting with *interrogationis* that spring, when on the 16th of May I captured a large but badly worn *umbrosa* fluttering over lilac blossoms. I was surprised that it should be of this form instead of the more common *Fabricii*, but what was my astonishment to see four or five more of the same form the same day. During the rest of May and first part of June the species was common, but not one *Fabricii* was seen. A large female was captured while ovipositing on elm, and netted over a branch of that tree. She deposited a large number of eggs indiscriminately on leaves, branch, and net, in most cases singly, but in a few instances in "chains" of three or four. In order not to disturb the eggs, I let the net remain as it was until the larvæ should hatch, and then, thinking that the larvæ would do better in the open air, left it until they had passed the second moult, when on removing it I found only eight remaining. These pupated without further accident, and on the 13th of July and the few days following five imagoes emerged —three *Fabricii* and two *umbrosa*. This was after the larger part of the brood of *j-album* had emerged and several weeks after the first brood of *comma*, and as the former species is probably but single brooded here, I was not expecting a second brood of *interrogationis*. It was with some surprise, therefore, that a large colony of young larvæ were discovered in the latter part of August feeding on the heads of hops. Later several other colonies were found on hop and elm, and a number of larvæ were transferred to my breeding-boxes and carried successfully to pupation, but as many of the pupæ rotted, only about thirty imagoes, all *Fabricii*, were obtained. The last specimen, delayed by a long continued "spell" of severe weather, did not emerge until November 6th, after being in the pupa state nearly six weeks and freezing at least once. It was smaller and darker than the average, but not otherwise remarkable.

Now, the question which I wish answered is, Where did the large number of *umbrosa* come from that appeared here so suddenly in May? They certainly did not breed here, because every specimen seen was badly worn, and they could not have flown in any such numbers either the same spring or the fall before, and besides, the fall before it was *Fabricii* that was in the majority. The only explanation which I can offer is that they migrated thither from some other locality, probably in the South. *Pyrameis atalanta* appeared about the same time in very large numbers, but as the species has always been more or less common,

I did not think it so remarkable. The first brood of larvæ of this species are usually so scattering that it is difficult to find them. This summer they were so numerous as to completely strip large clumps of nettle, so that numbers of larvæ must have perished for want of food. Some large and healthy bunches of nettle were so weakened by the larvæ of this species and of *Vanessa Milberti* repeatedly stripping them of every green leaf that they have probably died.

LARVAL STAGES OF AMPHION NESSUS (Cr.).

BY WILLIAM BEUTENMULLER, NEW YORK.

Eggs.—Pale green, almost globular; very similar to that of *Everyx myron*, but smaller. Young larvæ collected at Greenwood Lake, New Jersey, June 25th. Length, 1 mm.

Stage I.—Pale apple-green, with numerous minute white dots and a narrow white subdorsal stripe along each side, beginning at the anterior part of the first segment and running to the base of the caudal horn, which is black, and brown at the base. Length, 9 mm. Moulted June 28th.

Stage II.—Very much like the preceding stage, but the white dots and the subdorsal stripe are much heavier and more distinct. Caudal horn jet black, reddish-brown basally. Head with a narrow white stripe on each side. Length, 13 mm. Moulted July 1st.

Stage III.—Much like the last stage, but the stripes on the head are continuous with the ones on the subdorsum; the third and fourth segments are now considerably swollen and thicker than the remaining segments. Caudal horn black, reddish-brown at the base. Spiracles black. Length, 17 mm. Moulted July 4th.

Stage IV.—Same as the last stage. Length, 22 mm. Moulted July 7th.

Stage V.—The general colour is now dirty orange-brown, speckled with small smoky-black dots. On the junction of the segment along the dorsum is a smoky-black spot, and along the sides is a series of oblique smoky-black bands, the last one running to the base of the caudal horn, which is black. From the head to the end of the third segment are three black stripes, one on the dorsum and one on each side on the subdorsum. Head dirty purplish-brown, with a whitish stripe on each side. Under side darker than above. Length, 45 mm. Full-grown July 18. When fully fed the larva spins a rude cocoon between a few leaves on the ground.

Food-plants: Grape and Virginia creeper.

THE COLEOPTERA OF CANADA.

BY H. F. WICKHAM, IOWA CITY, IOWA.

XX. The Chrysomelidæ of Ontario and Quebec.—(*Continued*).

Tribe IX.—Galerucini (Sub-tribe Halticini).

The "jumping beetles," or "flea beetles," constitute the above sub-tribe, and are separated from the genuine Galerucini by the fact that the hind thighs are greatly enlarged and thickened for leaping. Most of the species are quite small, though a few are of moderate size for this family, and a considerable number of them are prettily coloured. They are of great importance from an economic standpoint, a number of them being quite injurious. The identification of some of the members of this group is attended with considerable difficulty, yet most of the genera have a peculiar facies, which, once grasped, renders the proper location of additional specimens tolerably certain.

The sub-tribe has recently been worked up in detail, as far as the North American species are concerned, by Dr. Horn, from whose paper on the "Halticini of Boreal America" most of the tables and specific diagnoses have been condensed. His paper has rendered possible an intelligent survey of the group — something heretofore lacking in the American literature on the subject. The diagrams representing elytral markings are reproduced from the figures given in his article.

A. Last joint of hind tarsi globosely inflated; elytra with confused punctuation, surface glabrous. Size, large or moderate. *Œdionychis.*

AA. Last joint of hind tarsi not globose, usually slender, sometimes thickened when viewed laterally.

b. Anterior coxal cavities open behind. Mesosternum visible.

c. Prothorax without antebasal transverse impression, hind tibiæ faintly or not grooved.

d. Moderate or large sized species, first joint of hind tarsi short, as compared with tibiæ, and rather broad. *Disonycha.*

dd. Small species, first joint of hind tarsi long and slender.

Hind tibiæ grooved on outer edge, first joint of hind tarsi as long as one-half the tibia ..... *Longitarsus.*

Hind tibiæ not grooved, slightly excavated near tip; first joint of hind tarsi about one-third as long as tibia ..... *Phyllotreta.*

cc. Prothorax with antebasal impression, which is transverse, usually feeble and not distinctly limited at each extremity ..... *Haltica.*

bb. Anterior coxal cavities closed behind.

e. Antennæ 11-jointed, approximate at base.

f. Posterior tibiæ sinuate near the apex, the sinuation limited above by a distinct tooth; first two ventral segments connate, but with distinct suture; thorax without ante basal impression..... ..... *Chætocnema.*

ff. Posterior tibiæ without either sinuation or tooth.

g. Thorax with distinct antebasal transverse impression, usually well limited at its ends. Elytra punctato-striate.

h. Elytra glabrous.

Form more or less ovate; antennæ moderate..... ..... *Crepidodera.*

Form elongate, parallel; antennæ as long or longer than body..... *Orthaltica.*

hh. Elytra with rows of setæ on interstices, giving a pubescent appearance. Form short, ovate; antennæ not elongate..... *Epitrix.*

gg. Thorax without *transverse* antebasal impression.

i. Spur of hind tibia small and slender.

Thorax with short, deep *longitudinally* impressed line each side; elytra punctato-striate, paler at tip..... ..... *Mantura.*

Thorax without impression, elytral punctuation confused..... .... *Systena.*

ii. Spur of hind tibiæ broad, emarginate at tip.... *Dibolia.*

ee. Antennæ 10-jointed, hind tibiæ prolonged beyond the insertion of the tarsus, which is placed rather on the outer side, above the apex..... *Psylliodes.*

ŒDIONYCHIS, Latr.

The species of this genus are of large or moderate size (for Halticini) and are readily recognizable on account of the inflated o. globose claw-joint of the hind tarsi. Some of them are of bright colours and handsomely marked. The Canadian forms are thus separated by Dr. Horn:

A. Antennæ stouter, scarcely one-half the length of the body; species larger and more convex, front of head oblique, elytra never explanate at sides.

b. Elytra entirely blue, green, violaceous, blackish or testaceous.

c. Body never entirely black beneath.

Elytra bright blue or green, thorax smooth ; body beneath entirely pale. .18–.28 in.....*gibbitarsa*, Say.

Elytra violaceous or greenish-black, thorax more or less distinctly punctate, body beneath in great part dark, thorax yellowish with a large piceous space or M-like mark blackish. .16–.28 in.....*vians*, Ill

cc. Body entirely black beneath, upper surface dull black, impunctate. .18–.22 in.....*lugens*, Lec.

bb. Elytra with pale margin, disk violaceous or bluish.

Thorax and elytra coarsely and closely punctate. .20–.26 in.....*thoracica*, Fabr.

Thorax and elytra indistinctly punctured; elytra brilliant violaceous. .20–.24 in.....*flavocyanea*, Cr.

AA. Antennæ slender, equal to or greater than one-half the length of the body ; front of head vertical ; elytra with explanate margin.

d. Elytra broadly oval, sides much arcuate, coarsely punctate ; may be yellowish with indistinct vittæ, or black with only the margin pale. .14–.20 in..*limbalis*, Mels.

dd. Elytra with sides feebly arcuate or nearly parallel ; yellowish, with indistinct brown spots and bands or with the disk entirely piceous.

e. Thorax very coarsely punctured; elytra with a more or less evident costa extending from humeri to apex, yellowish with blackish spots which sometimes coalesce to form an X, behind which is an irregular transverse band. .14–.16 in. (fig. 5)....*sexmaculata*, Ill.

Fig. 5.

ee. Thorax finely punctured or smooth.

Head coarsely punctate, punctures closely placed ; yellowish ; elytra with base, suture, and often two spots on each, brown. .14–.16 in.....*suturalis*, Fabr.

Head sparsely punctate or nearly smooth ; thorax often entirely yellow, or may be piceous with the margin pale ; elytra piceous with yellow margin,

rarely with two large yellowish spots on each. .14–.15 in..... *quercata*, Fabr.

While *flavocyanea* is included in the above table, on account of its being recorded in the Society's list, it has probably been identified in error, since it is a Southern species.

DISONYCHA, Chevr.

Also contains large or moderate sized species, some of them even exceeding *Œdionychis*, which they often re emble in markings, but they may easily be separated therefrom by the cl w-joint of the hind tarsi not being swollen. They separate thus:

A. Elytra not striped.

Thorax yellow with three black spots arranged in the form of a triangle; under surface of body and the legs black .20–.25 in..... *triangularis*, Say.

Thorax yellow, not spotted; abdomen yellow, femora usually yellow at basal half. .21–.23 in..... *xanthomelæna*, Dalm.

AA. Elytra striped.

b. Form very elongate; elytra vaguely grooved; thorax somewhat uneven.

Body beneath black, except sides of thorax, which are margined with yellow. Black spot on disk of thorax very large..... var. *limbicollis*, Lec.

Body beneath partly black, abdomen paler at sides and apex, thorax with under surface entirely yellow, discal spot on upper surface smaller. .26–.30 in..... *pennsylvanica*, Ill.

bb. Form not very elongate; elytra and thorax even, the former with discal and submarginal vittæ.

c. Abdomen densely punctured, conspicuously pubescent.

d. Head coarsely punctured from side to side. .22–.36 in..... *quinquevittata*, Say.

dd. Head smooth at middle.

Elytral vittæ rather broad, head and body beneath more or less clouded with darker, labrum piceous. .22–.26 in..... *crenicollis*, Say.

Elytral vittæ narrow, head and body beneath always pale yellow, labrum pale. .20–.26 in... *caroliniana*, Fabr.

cc. Abdomen very sparsely punctured, pubescence scarcely visible. Thorax smooth, head rough, epipleura black. .20–.22 in. ..... *glabrata*, Fabr.

It is quite likely that *glabrata* may have been recorded in error; the species called *5-vittata* is the one everywhere identified as *alternata*, and so recorded in the Canadian lists; while *crenicollis* and *caroliniana* are inserted in the table, with the characters assigned them by Dr. Horn, since it is, to my mind, likely that one of these is the species which was mistaken for *glabrata* by the Canadian recorder.

HALTICA, Geoffr.

The species belonging here are of moderate size, none of them with markings of any sort on the upper surface of the body, which is blue, green or bronzed, and usually shining. The thorax is marked near the base with a transverse more or less distinctly impressed line, which has been used as a means of differentiating species. The following table is a tolerably close copy of that of Dr. Horn, and will serve to distinguish the recorded Canadian forms with some degree of accuracy.

A. Elytra with a prominent lateral plica along the lateral submargin, giving the appearance of a double margin. .20–.24 in. ..... *bimarginata*, Say.

AA. Elytra not plicate.

Thorax with deep antebasal groove extending *completely* across.

Larger (.16–.20 in.) usually blue, form robust, thorax distinctly wide at base. ..... *chalybea*, Ill.

Smaller (.12–.16 in.) metallic, brassy, blue, green or bronze. Elytra distinctly sparsely punctate at base, more faintly toward apex. ..... *ignita*, Ill.

Thorax with transverse antebasal groove, which is not entire.

Transverse impression, ending in a fovea on each side. .18 in. ..... *evicta*, Lec.

Transverse impression gradually evanescent at either end.

Impression deep, humeri of elytra well marked, thorax relatively coarsely punctate. Elytral punctuation coarser than usual. Colour more or less coppery, sometimes nearly blue. .14–.18 in. ..... *carinata*, Germ.

Impression feeble, almost obliterated; humeri rounded, thorax sparsely punctulate, elytra scarcely visibly punctate, colour bright green to dark blue. .14–.18 in. ..... *foliacea*, Lec.

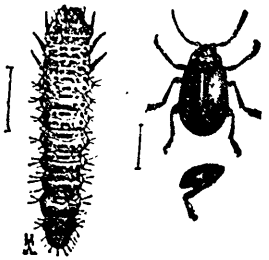


Fig. 6.

It should be remarked that *evicta* is a Pacific Coast species (found in Oregon), of which I have seen no Canadian examples while *foliacea* is Southern, occurring in Texas Colorado, New Mexico, and Arizona. *H. inaurata*, Lec., is synonymous with *ignita*.

(Fig. 6 represents the larva and beetle of *H. chalybea*, and a leg of the latter, showing the greatly thickened thigh.)

CREPIDODERA, Chevr.

The best known species of this genus is *Crepidodera helxines*, a bright metallic blue or green flea beetle, very commonly found on willows. All of the members belonging here are quite small, and do not resemble each other at all closely, so that reference should be had to the generic characters (as laid down in the table of genera) before trying to place any presumed *Crepidoderas* by the following specific analysis which is that of Dr. Horn:

Form oblong-oval; elytra uniform in colour with the head and thorax surface metallic, blue or green; thoracic punctuation abundant intermixed. .09–.13 in..... .....*helxines*, Linn

Form oval, narrowed in front; colour piceous, with slight aeneous lustre, apical third of elytra indeterminately testaceous. .08–.1 in..... *modeeri*, Linn

Form broadly oval and convex; colour rufotestaceous, without metallic lustre; abdomen piceous, prothorax not distinctly punctured .06–.07 in..... ..... *atriventris*, Mels

EPITRIX, Foudras.

Contains one Canadian species, *E. cucumeris*, Harr., the "cucumber flea beetle" (fig. 7), which is often found very abundant on potato vines. It is a small (.06 to .08 in.), ovate, slightly oblong beetle, nearly black in colour, the legs reddish or brownish, femora often darker. It may easily be told from any of the *Crepidoderas* or other genera which might otherwise resemble it in our fauna, by the fact that the upper surface is pubescent. The thoracic punctures are well separated from each other; the elytral striæ especially near the suture, very feeble.

Fig.

ORTHALTICA, Crotch.

O. copalina, Fabr., is an elongate-parallel insect, of shining surface, brownish or blackish in colour. .08–.10 in. long. The antennæ are more elongate than usual in the Halticini, equaling about two-thirds of the length of the body in the male, somewhat shorter in the female. The antennæ and legs are rufotestaceous, the thorax is broader than long, sides arcuate, margin finely serrate, punctures coarse and deep, but not densely placed. Elytra with nine striæ of closely-placed coarse punctures, intervals narrower than the striæ. I have found this species in abundance on the flowers of sumach.

SYSTENA, Clark.

The species of this genus are rather elongate, somewhat depressed or only moderately convex in form. The antennæ are about one half the length of the body. Some of them are injurious to cruciferous plants. Two of the Canadian species are dark, the other two pale or vittate. They may be separated thus:

Black, head reddish. .14–.20 in..... *frontalis*, Fabr.

Black, head not red; joints 3, 4, 5 of antennæ testaceous. .18 in..... *hudsonias*, Forst.

Elytra pale or striped.

Surface shining, punctuation fine; may be entirely pale, or the elytra may be vittate. Under side of body and sides of thorax often piceous. .12–.18 in..... *tæniata*, var. *blanda*, Mels.

Surface subopaque, punctuation coarse, close and deep. .14–.16 in..... *marginalis*, Ill.

LONGITARSUS, Latr.

Three species have been reported from the region under discussion. They all belong to the division of the genus in which the fourth antennal joint is not longer than the second, and are distinguished by the use of the following characters in the table of Dr. Horn:

Surface entirely shining, form robust, elytral humeri well marked, punctuation rather coarse. Colour blackish. .07 in... *erro*, Horn.

Surface more or less alutaceous, thorax always so, form more elongate, humeri not prominent.

Elytra not shining, punctuation very indistinct; colour yellowish-testaceous. .07–.08 in..... *testaceus*, Mels.

Elytra shining, punctuation coarse; colour dark rufotestaceous to nearly piceous. .08 in..... *melanurus*, Mels.

Glyptina, Lec.

Species of this genus will almost certainly be found in Canada. They have the elytral punctuation disposed in rather regular striæ, while in *Longitarsus* the punctures are confused. Otherwise there is considerable similarity between the two genera, as far as aspect is concerned.

Phyllotreta, Foudras.

Contains a few species only, the Canadian ones all being of a piceous colour, more or less aeneous or greenish, shining, the elytra marked with yellow stripes or spots. (*P. vittata*, fig. 8.) Often injurious by their great abundance: they are to be seen on the leaves of horse-radish, wild mustard, and various allied plants, wild or cultivated. It should be noted that the record for *lepidula* ought to be carefully verified, since the species is Californian. *P. sinuata* has been included in the table, though not actually known to occur in Canada.

A. Fifth joint of antennæ much enlarged (♂) or longer than the sixth (♀). Elytra usually vittate, rarely spotted.

Fig. 8.

b. Elytral vitta simple, narrow, nearly straight, but incurved at the apex. .08–.10 in..... *lepidula*, Lec.

bb. Elytral vitta sinuous, more or less dilated or appendiculate at ends.

Vitta incurved at base, approaching the scutellum; intermediate portion sometimes wanting, leaving the apical parts in the form of spots (fig. 9a.). .08 in... *vittata*, Fab.

Vitta parallel with suture at its basal half. .10 in. (fig. 9b)..... *sinuata*, Steph.

Fig. 9.

AA. Fifth joint of antennæ not modified; fifth joint not longer than sixth in either sex. Piceous, not metallic. Each elytron with two oval yellow spots, one humeral, the other near the apex. .08–.10 in..... *bipustulata*, Fabr.

Mantura, Steph.

Represented by *M. floridana*, Cr., an oval, somewhat elongate, moderately convex beetle, of a brownish colour, faintly bronzed above; thorax without transverse antebasal impression, longitudinal basal impressions deep and triangular. Elytra indefinitely paler at apical third. Legs reddish, hind femora darker, each of the tibiæ with a terminal spur. In colour this species somewhat resembles *Crepidodera modecri*, Lim.

but that insect has a moderate transverse antebasal impression on the prothorax. Length, .08 in.

CHLETOCNEMA, Steph.

This is a large genus, well represented in the United States. The Canadian list contains only three species, one of which (*alutacea*, Cr., known from Georgia and Florida) may be erroneously cited, leaving only *denticulata* and *parcepunctata* as undoubted natives. Several are known from the Lake Superior region, and some of them must undoubtedly occur in Ontario. Following Dr. Horn's arrangement, these recorded forms may thus be known; all of them belonging to the group in which the sides of the thorax are not obliquely truncate at the front angles.

Head distinctly punctate; upper surface of body bright bronze or brassy; elytral striæ of coarse deep punctures, the scutellar series usually irregular, the remainder not confused. Form oval, not elongate, clypeo-frontal region subopaque. .08-.10 in.... *denticulata*, Ill.

Head impunctate.

Thorax with entire basal marginal line, which is not defined by punctures; legs entirely piceous, surface subopaque. .06-.08 in..... *alutacea*, Cr.

Thorax finely and sparsely punctate, with basal marginal row of distinct punctures, surface shining. Femora piceous, tibiæ and tarsi brownish or rufotestaceous. .06 in.... *parcepunctata*, Cr.

DIBOLIA, Latr.

The form of the spur of the hind tibiæ (broad with a distinct emargination at tip) will in itself define the genus. *D. borealis*, Chevr. (= *ærea*, Melsh.), is recorded from Canada and is about .12 in. long, oval, convex, robust, the surface bronzed, elytral striæ of coarse punctures; anterior and middle legs and hind tibiæ reddish.

PSYLLIODES, Latr.

Antennæ ten-jointed, inserted against the inner border of the eye, hind tarsi inserted before the end of the tibiæ and slightly to the outer side, first joint more than half the length of the tibia. The Canadian species is *P. punctulata*, Mels., a bronzed beetle .08-.10 in. long, of elongate-oval, rather convex form, thorax at base not narrower than the elytra, which are punctato-striate, the punctures coarse and deep, closely placed. The male has the last ventral distinctly impressed.

ON LEDRA PERDITA, A. & S.

BY CARL F. BAKER, AUBURN, ALABAMA.

On page 577 of their great work on the Hemiptera, Amyot and Serville describe two species of *Ledra*. One, *L. aurita*, the well-known species of Europe, was characterized from specimens collected near Paris. I have specimens of it now before me. Its size, the broad membranous prolongation of the head, the ear-shaped horns on the thorax, together with other details of structure, separate it widely from any other homopterous insect. The other species described, *L. perdita*, though equally unique in form, was characterized under circumstances which, for such eminent scientists as Amyot and Serville, seem extraordinary. After a three-line description, they remark: "L'exemplaire unique d'après lequel cette espèce a été figurée, ayant été détruit, nous la décrivons d'après la figure." Unfortunately, the figure, number five on plate II., is very poor. The species is credited to "Amérique septentrionale."

Since that time the species has never again been recognized, although often noticed in hemipterological literature. Mr. Van Duzee, in his "Catalogue of the Jassoidea," lists it as an unquestionable *Ledra*, and gives its habitat as Pennsylvania, on the authority of Amyot and Serville.

It is perfectly evident from the figure that the species is not a *Ledra*. It lacks utterly the characteristic head structure of *Ledra aurita*. It is equally evident that the figure is that of a Membracid belonging in the Centroline, near *Microcentrus caryæ*, Fh. Indeed, Dr. Goding tells me Fitch himself noticed this resemblance.

During several years past I have been receiving quantities of material in Homoptera from many localities in Pennsylvania and throughout the East. This material is the result of careful work by good collectors, and contains immense series of the native Membracids and Jassids. In the examination of this material I have been constantly on the watch for *Ledra perdita*. Lately it has occurred to me in several specimens from Pennsylvania, New Jersey, and Indiana, collected by Messrs. Dietz, Liebeck, and Weith. There is nothing else among all the American material I have examined that is at all like this species, with the single exception of *Microcentrus caryæ*, and that lacks the long ear-shaped horns on the thorax. So peculiar in form is it that there is not a possibility of confusing it with anything else in our fauna.

And not until another species from the same region shall have been discovered, having closer affinities with it than has *Microcentrus caryæ*, will there be any reasonable grounds for doubting that this, which I so refer, was the form which Messrs. Amyot and Serville described under the name *perdita*.

I forwarded specimens of the species to Dr. Goding, and was much surprised to learn that it was identical with his *Centruchus Lichteckii*, also from Pennsylvania, described on page 471 of the List of N. A. Membracidæ. In a letter he cites the genus as "*Centruchoides*," which I suppose to be a manuscript name founded on this species. I, however, believe this species (which in future must be known as *perdita*, A. & S.) to be congeneric with the *caryæ* of Fitch. I have specimens of *caryæ* with rudiments of thoracic horns. Outside of this character the species are very closely related.

I have yet to see a true *Ledra* from either North or South America.

SOME NEW SPECIES AND VARIETIES OF LEPIDOPTERA FROM THE WESTERN U. S.

BY WM. BARNES, M. D., DECATUR, ILL.

Argynnis Charlottii, n. sp.

♂.—Upper surface very much like *Cybele;* differs from *Leto* in the lighter shade of the ground colour and the much darker and more extensive basal area. This area is sharply limited at the outer edge and extends to the median row of markings, which on the hind wings are quite obscured by it. The apical region is not so clear as in *Leto*, the row of round spots in the outer belt continuing of large size up to the costa, and the dark blotch lying just within the upper three spots is very prominent, as in *Cybele*.

Under surface clearer, brighter, and markings less heavy than in *Leto*. The marginal brown shading very faint, and the submarginal row of crescents, which on the secondaries are very narrow but well silvered, have but a very fine edging of the same shade. The dark basal area stops sharply at the median row of silvered spots, as in *Cybele*, and is not present on their outer side, as in *Leto*.

♀.—Upper surface closely resembles *Leto*, the ground colour and basal area being the same. The markings are, however, not so heavy and the submarginal row of lunules do not so completely enclose the row of spots of the ground colour. On the under surface the markings

are not so heavy as in *Leto*: the apical region is clearer, the three or four brown spots so conspicuous in *Leto* being here wanting or but faintly indicated. The outer belt on the secondaries presents the same clean-cut character as in the male, owing to the absence of the brown shadings to its inner and outer sides.

Types.—1 ♂ and 2 ♀s in my collection, from Glenwood Springs, Colo.

This species stands intermediate between *Leto* and *Cybele*. The locality has been thoroughly worked for several years and no typical *Leto* taken there. I have *Leto* from Utah, California, Nevada, Oregon, Idaho, Montana, and British Columbia, and they are uniform in their points of difference from the form here described.

Melitæa Gillettii, n. sp.

♂ expands 1½ inches; head and thorax black; abdomen black above, beneath yellowish-white; palpi and legs dark red; antennæ fuscous; club yellow; wings, ground colour black, markings dull red and white, veins black. Primaries above show a wide margin of the ground colour, in which are two rows of spots; the margin red, very faint, scarcely discernible except towards apex; the second row is white, small and not very prominent; the third row is red, the spots are large, quadrate and completely fill the intercellular spaces, thus giving the appearance of a broad red band cut by the black veins; the fourth row is rather irregular, white and joined opposite the cell by a demi-row from costa; two red and two white spots in cell; two white spots and one red in subcellular space; basal area rather obscured with black.

Secondaries above have the four outer rows as on primaries, the marginal red row even fainter, two red and one white spot in cell and a white subcellular spot. The under surface shows but little of the black ground colour, it being reduced to the veins and lines between the rows of spots, which are all rather quadrate in shape, filling the intercellular spaces, thus giving a well-marked, banded appearance. The marginal band is red and is followed by the white, red, and white bands as on upper surface. The cellular and subcellular spots on primaries same as above, only larger and more distinct. On basal area of secondaries there are four white spots, separated by an irregular shaped red area, the result of a fusion of the red spots.

Described from seven ♂s taken in Yellowstone Park, Wyoming, July 18.

This species is very closely allied to *M. Iduna*, Dalm., of Lapland, but in that species the antennæ are black and the red band not half so wide. That a species so distinct from any other thus far described from N. A. should be turned up at this late day is remarkable, and shows the possibilities of many other interesting discoveries when the Park region is thoroughly explored.

Melitæa nubigena, var. *capella*.

In the Henry Edwards collection are specimens of a Melitæa separated under the above name; but in so far as I know, no description was ever published. The variations of *nubigena* are without number, yet they all come into one of three general classes. In Western Colorado and Utah the tendency is towards a gradual increase of the white at the expense of the red and black, producing forms allied to *Wheeleri*, Hy. Edw. Farther north in the Yellowstone region the tendency is to darker forms, the black replacing the red to such an extent that the spots are small and round, set in a black ground. Around Manitou and Denver forms occur which are of a solid brick red, the white being entirely gone and the black reduced to the veins and fine cross lines, the latter even being wanting in portions of the wings. On the primaries the spots at the costal end of the third row are the last to lose the white colour, and in most of the specimens there are traces of it remaining there. In some few males there is none whatever. The fourth row on the secondaries preserves the whitish colour the longest, but not so tenaciously as is the case on the primaries. In some specimens which have entirely lost the white, the black ground colour still remains well marked, while in others there is considerable fusion of the red spots, while considerable of the white is retained. It is to those dark red forms that Hy. Edwards applied the name *capella*, and I take pleasure in retaining the name proposed by him.

Described from eight pairs in my collection and others among my duplicates.

Pokas pelidne, var. *Skinneri*.

Male, expanse 1½ to 1¾ inches; upper surface of a greenish-yellow tone somewhat darker than *Scudderi*, lightly dusted with dark scales over costal two-thirds of primaries; marginal bands not so broad and cut as deeply by the yellow nervules than is the case in *Scudderi*. The inner margin of the border varies, being almost entire in some specimens,

dentate in others, and in a few erose. The discal spot on primaries black, much more distinct than in either *Scudderi* or *pelidne*. In some few specimens the spot is centered with a few yellowish scales, the spot on secondaries about the same as in *Scudderi*. Under side of primaries yellow, paler along the inner margin, thickly dusted with dark scales over costal two-thirds from base to just within the line where the inner margin of the black border of the upper surface shows through; discal mark faint—scarcely discernible in many specimens. Secondaries thickly dusted with dark scales over the basal three-quarters, discal spot prominent, dark brown ring, centre silvered or white, more or less covered with roseate scales; costa and fringes, except at inner angle of primaries, roseate. Antennæ roseate; club roseate below, brown above; collar, head, legs, and a spot at base of secondaries, roseate; palpi roseate above, yellow beneath; thorax and abdomen dark above, covered with yellow hairs, yellow beneath.

Female, expanse 1⅝ to 1⅞ inches; greenish-yellow or white, about evenly divided. Border well marked, varying greatly in extent. In some specimens, on the primaries it is broad, and entirely encloses a row of spots of the ground colour; in others, while equally broad, it is uniformly dark; from these there are all gradations down to one in which the black is restricted to the apical region, and to pear-shaped spots at the ends of the veins. On the secondaries the border is usually well marked, and extends in some almost to anal angle; in some examples, however, it is confined to the outer angle, as three or four blotches. The upper surface is less dusted with dark scales than in the male, the under surface about the same, the discal spots, fringes and other characters as in the male.

Described from 15 males and 7 females — three of which are yellow, three white, and one intermediate — taken in Yellowstone National Park and at Arangie, Idaho, in July.

Mr. Bean, in CANADIAN ENTOMOLOGIST, Vol. XXII., p. 127, mentions specimens of a Colias intermediate between *Scudderi* and *pelidne*, and it is probable that this is the same, but as I have none of his material and he gives no description of it, I am not certain.

Thymelicus Edwardsii, n. sp.

Upper surface bright golden-yellow, fringe dark brown within, light outwardly. Beneath primaries yellowish, except inner margin, which is shaded with black; hind wings yellow over the anal margin for one-third the width of the wing, rest grayish-yellow.

Type.—One male, taken near Denver, Colorado.

CATALOGUE OF THE PHYTOPHAGOUS AND PARASITIC HYMENOPTERA OF VANCOUVER ISLAND.

BY W. HAGUE HARRINGTON, F. R. S. C., OTTAWA.

(Continued from page 4.)

Amblyteles subrufus, *Cress.*—One ♀ labelled *Ich. sequax*, received by Mr. Fletcher, appears to belong to this species. It is certainly not *sequax*.

Amblyteles suturalis, *Say.*

Amblyteles superbus, Prov. Thirteen ♀s, including Provancher's type, which Mr. Davis has found to equal *suturalis* (CAN. ENT., Vol. XXVII., p. 287). They are yellower than Ottawa specimens, with sutural bands of abdomen weaker and sometimes wanting.

Amblyteles subfuscus, *Cress.*—Two ♀s.

Trogus buccatus, *Cress.*—♀ described from V. I. coll., H. Edw.

Trogus Edwardsii, *Cress.*—♂ described from same coll.

Trogus Fletcheri, *Hargtn.* Type ♀ in my coll.

Platylabus pacificus, *Hargtn.* Type ♀ in my coll.

Hemichneumon vancouverensis, *Hargtn.*

Hypocryptus vancouverensis, Hargtn. Type ♀ in my coll. Mr. Davis informs me that this species belongs to Hemichneumon.

Phæogenes discus, *Cress.*—One ♀.

Phæogenes fungor, *Nort.*—Two ♀s.

Phæogenes sectus, *Prov.*—One ♂. The species was described from coll., Taylor.

Enteterus canadensis, *Hargtn.*—Three types ♀ in my coll.

Herpestomus attenuatus, *Prov.*

Phygadeuon attenuatus, Prov.—Taylor, *loc. cit.* Not seen.

Herpestomus orbus, *Prov.*

Phæogenes orbus, Prov.—The ♀ of this species was described by Provancher from a specimen sent to him by Mr. Fletcher. Not seen.

Phygadeuon crassipes, *Prov.*—One ♀. Differs from description in colour of ovipositor.

Phygadeuon seminiger, *Hargtn.*

Semiodes seminiger, Hargtn.—Type ♂ in my coll. Mr. Davis thinks this belongs to Phygadeuonini.

Phygadeuon nitidulus, *Prov.*—One ♀. The ♀ of this species was described from coll., Fletcher.

Phygadeuon subspinosus, *Prov.*—Taylor; *loc. cit.* Not seen.

Cryptus extrematis, *Cress.*—Ten ♂s sent to Mr. Fletcher are labelled as bred from Trichiosoma.

Cryptus flavipes, *Hargtn.*—Type ♀ in my coll.

Cryptus Fletcheri, *Prov.*—♀ described from coll., Taylor.

Cryptus pentagonalis, *Prov.*—One ♂.

Cryptus punicus, *Cress.*—Proc. Acad. Nat. Sci., Phil., 1878, p. 364.

Cryptus persimilis, *Cress.*—One ♀.

Cryptus proximus, *Cress.*—Three ♀s.

Cryptus resolutus, *Cress.*—One ♂.

Cryptus robustus, *Cress.*—Taylor (*loc. cit.*), "Not uncommon." Not seen, and probably *proximus*.

Cryptus rufoannulatus, *Prov.*—Taylor, *loc. cit.* One ♀ received by Mr. Fletcher.

Cryptus ultimus, *Cress.*—Two ♂s. Labelled as bred from Trichiosoma in April.

Cryptus, n. sp.?—One ♀ near *vancouverensis*.

Cryptus vancouverensis, *Hargtn.*—Three types ♀ in my coll.

Cryptus victoriaensis, *Hargtn.*—Two types ♀ in my coll. One ♀ also received by Mr. Fletcher.

Chæretymma Ashmeadii, *Hargtn.*—Type ♀ in my coll. One ♀ also received by Mr. Fletcher. This has annulate antennæ; the antennæ of type were missing.

Orthopelma occidentale, *Ashm.*—One ♀.

Hemiteles crassus, *Prov.*—Taylor, *loc. cit.* Not seen.

Hemiteles militææ, *Ashm.*—One ♀.

Hemiteles occidentalis, *Hargtn.*—Type ♀ in my coll.

Hemiteles piceiventris, *Hargtn.*—Type ♀ in my coll.

Hemiteles scolyti, *Ashm.*—One ♀.

Ophion bilineatum, *Say.*—Eighteen specimens. These vary in size and colour, but apparently all belong to one species.

Ophion nigrovarium, *Prov.* (?)—Taylor (*loc. cit.*) notes that the single insect so determined for him was destroyed.

Anomalon Edwardsii, *Cress.*—♀ described from V. I. coll., H. Edw.

Anomalon nigrum, *Prov.*—Taylor (*loc. cit.*): "Several bred from pupæ of Noctuæ." Not seen.

Campoplex laticinctus, *Cress.*—One ♀.

Campoplex major, *Cress.*—♀ described from V. I. coll., H. Edw.

Limneria argentifrons, *Cress.?*—One specimen, without abdomen, labelled *flaviricta*, but cannot be that species.

Limneria compacta, *Prov.*—♀ described from coll., Taylor.

Limneria dubitata, *Cress.*—One ♀.

Limneria fugitiva, *Say.*—One ♀.

Limneria major, *Cress.*—One ♀. This is labelled *L. genuina*, Say, but there does not seem to be any species described under that name, although Provancher also quotes it in his work.

Limneria valida, *Cress.*—One ♀.

Angitia americana, *Hargtn.*—Type ♀ in my coll.

Pyracmon vancouverensis, *Hargtn.*—Type ♀ in my coll.

Banchus superbus, *Cress.*

Banchus polychromus, Prov.—Two ♀s. Provancher's type not seen, but it seems undoubtedly, from description, to be a somewhat immature example (in which the black is not fully developed) of this well-marked yellow and black species.

Mesoleptus fasciatus, *Prov.*—♀ described from coll., Taylor.

Phobetes canadensis, *Hargtn.*—Type ♀ in my coll.

Mesoleius lætus, *Cress.*—♂ described from V. I. coll., H. Edw.

Mesoleius truncatus, *Prov.*

Mesochorus truncatus, Prov.—♀ described from coll., Taylor.

Tryphon communis, *Cress.*—Two ♂s.

Syrphoctonus agilis, *Cress. (Bassus).*—Three ♀s.

Syrphoctonus pacificus, *Cress. (Bassus).*—♂ described from V. I. coll., H. Edw.

Coleocentrus occidentalis, *Cress.*—♀ described from same coll.

Rhyssa persuasoria, *Linn.*—One ♂.

Ephialtes pacificus, *Hargtn.*—Three types ♀ and one ♂ in my coll. The male is a very small specimen.

Ephialtes thoracicus, *Cress.*—♀ described from V. I. coll., H. Edw.

Ephialtes tuberculatus, *Fourc.*—Two ♀s.

Ephialtes vancouverensis, *Hargtn.*—Type ♀ in my coll.

Theronia fulvescens, *Cress.*—Fourteen ♀ and four ♂ specimens. A common insect, infesting Clisiocampa, Orgyia, Menapia, etc.

Pimpla atrocoxalis, *Cress.*—One ♀. From Clisiocampa.

Pimpla conquisitor, *Say.* Two ♀s.

Pimpla ellopiæ, *Hargtn.* Types ♂ ♀ in my coll. Bred by Fletcher from pupæ of *Ellopia somniaria*, a moth of which the larvæ are most destructive to the foliage of oaks.

Pimpla inquisitor, *Say.*—Four ♀s. Apparently the *P. indigatrix* of list published by Taylor.

Pimpla pedalis, *Cress.*—One ♀.

Pimpla sanguinipes, *Cress.*—Four ♀s.

Pimpla tenuicornis, *Cress.*—One ♀.

Polysphincta texana, *Cress.*—Two ♀s.

Glypta erratica, *Cress.*—One ♀.

Arenetra pallipes, *Hargtn.*—Five types ♂ in my coll. Common at Victoria in March, April and May. Four ♀s received by Mr. Fletcher.

Cylloceria occidentalis, *Cress.*—Two ♂s.

Lampronota Edwardsii, *Cress.*—One ♀. This was labelled *Coleocentrus rufus*, Prov., and was entered under that name in Taylor's list. The species was described from ♀ in V. I. coll., H. Edw.

Lampronota pleuralis, *Cress.*—One ♀.

Lampronota segnis, *Cress.*—♀ described from V. I. coll., H. Edw.

Lampronota vivida, *Cress.*—♂ described from same coll.

Xorides occidentalis, *Cress.*—♀ described from same coll.

Euxorides vancouverensis, *Prov.*—The type ♀ was from Taylor's collection. Not seen.

Xylonomus insularis, *Cress.*—♀ described from V. I. coll., H. Edw.

Aplomerus tibialis, *Prov.*

Platysoma tibialis, Prov.—One ♀ labelled as found under loose bark. The type ♀ was also collected by Taylor.

Ecthrus abdominalis, *Cress.*—One ♀. Specimen also in coll. Geological Survey.

Ecthrus (?) maurus, *Cress.*—♀ described from V. I. coll., H. Edw.

BRACONIDÆ.

Bracon atripectus, *Ashm.*—Three ♀ and one ♂ specimens. The latter was labelled as type of *Bracon bisignatus*, Prov., but no description appears to have been published.

Bracon sanguineus, *Ashm.*—Two, ♀ ♂.

Doryctes pacificus, *Prov.*

Phylax pacificus, Prov., CAN. ENT., Vol. XVII., p. 117, ♀; *Phylax niger*, Prov., *ibid.*, ♂.—Five ♀ and one ♂ specimen, which are considered by Ashmead to belong to the same species.

Microdus sanctus, *Say.*—One ♀.

Helcon frigidus, *Cress.*—One ♀.

Macrocentrus mellipes, *Prov.*—One ♀.

CHALCIDIDÆ.

Diomorus (?) Zabriskii, *Cress.*—One ♀.

Meraporus sp.—Six specimens.

PROCTOTRYPIDÆ.

Mesitius vancouverensis, *Ashm.*—♀ described from coll., Taylor.

Anteon puncticeps, *Ashm.*—♂ described from V. I. coll., Wickham.

Polymecus vancouverensis, *Ashm.*—♀ described from coll., Taylor.

TRIGONALIDÆ.

Trigonalys canadensis, *Hargtn.*—Type ♂ in my coll.

A NEW SPECIES OF PROTANDRENA, CKLL.

BY S. N. DUNNING, HARTFORD, CONN.

Protandrena Cockerelli, n. sp.—♀. Length, 12 mm.; shining black. Upper half of clypeus, lower portion of supraclypeal area, and part of side pieces, bright yellow, all forming a band across the face one-half broader than high, and of equal breadth throughout; knees yellow spotted. Head rounded, broader than high, and covered with a short growth of gray hair, longer on cheeks and thickest at base of antennæ; lower half of clypeus and two small dots near lower edge of band black, not deeply or closely punctured; antennæ black at base, becoming brown towards

the tip ; first joint of flagellum not quite as long as the second and third combined ; mandibles black ; vertex deeply but not very closely punctate. Thorax covered with gray hair, quite thick below and anteriorly ; mesothorax before deeply and a little more thickly punctured than vertex anteriorly, and the scutellum more largely but less closely punctate ; postscutellum similar to anterior mesothorax, while the metathorax is quite finely and closely punctate ; below the wings the thorax is closely and roughly punctured ; tegulæ and nervures rufous, the stigma with a light spot before ; wings hyaline, much clouded at tip, marginal cell truncate and strongly appendiculate. Abdomen with white basal hair bands ; first segment deeply but not thickly punctured ; second, third, and fourth not as deeply and more closely punctate ; fifth more deeply and quite roughly punctate, and with a heavy rufous hair band posteriorly ; abdomen below with long and not distinctly separated hair bands, more finely punctate than above. Legs hairy, all except first joint of anterior, and the last joint of the middle tarsi rufous ; hind tarsi black ; anterior spur one-half as long as first joint tarsi, middle spur two-thirds as long as first joint of middle tarsi, and lateral spurs shortest of all, rufous ; claws cleft with several teeth inside.

Described from one ♀ taken at Topeka, Kansas, in 1864, by Mr. J. E. Taylor, and numbered 1,043 in my collection. Prof. T. D. A. Cockerell (after whom I have named this species, as a slight token of respect and of my gratitude for his many favours) pronounces this to be a valid new species. I would adopt his table (as published on p. 92 of the Annals and Mag. Nat. Hist., July, 1896) as follows :

A. Large species.
  (1) Stigma ferruginous.
    (a) Hairy, tegulæ rufous, knees yellow..... *Cockerelli*, Dun.
    (b) Not so hairy, tegulæ yellow spotted, 4 anterior knees yellow. ..... *mexicanorum*, Ckll.
  (2) Stigma dark..... *asclepiadis*, Ckll.
B. Small species.
  (1) Tarsi piceous in ♀.
    (a) Postscutellum and metathorax brownish... *maurula*, Ckll.
    (b) Postscutellum and metathorax black ..... *trifoliata*, Ckll.
  (2) Tarsi rufous in ♀, yellowish-white in ♂ .... *heteromorpha*, Ckll.

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