

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. *Ædionychis*.
- 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 antebasal impression *Chatocnema*.
- 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. *Systema*.
- 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*.

CEDIONYCHIS, Latr.

The species of this genus are of large or moderate size (for Halticini) and are readily recognizable on account of the inflated or 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 ex-planate 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.
- 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,



FIG. 5.

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 *Edionychis*, which they often resemble in markings, but they may easily be separated therefrom by the claw-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..... *xanthomelana*, 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

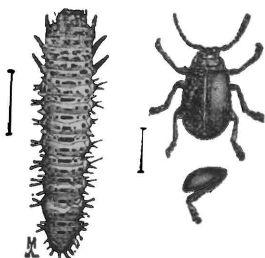


FIG. 6.

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. inarata*, 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, Chev.

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-.10 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 striae, especially near the suture, very feeble.



FIG. 7.

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.

SYSTEMA, 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. *teniata*, 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*, Fabr.

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

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.



FIG. 9.

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 modceri*, Linn.,

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

CHÆTOCNEMA, 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. (= *area*, 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.