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The Canadian Entomologist.

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No. 2.

THE COLEOPTERA OF CANADA.

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

VII. THE CUCUJIDÆ OF ONTARIO AND QUEBEC.

The Cucujidæ constitute a small family of beetles of depressed, often elongate form, the antennæ lengthened in many species, giving them a somewhat characteristic appearance, which, while recalling the Cerambycidæ, renders them, nevertheless, easily recognized. They may be technically distinguished from the allied Clavicorn families by the long elytra, the five-jointed tarsi (the hind ones sometimes only four-jointed in the males), the rounded or oval anterior coxæ, the middle ones with externally open cavities and the posterior separate. The ventral segments are sub-equal in length. The larvæ, so far as known, are flattened grubs, with distinct antennæ and several ocelli; the terminal segments often with hooks or tubercles.

The table of genera, as given below, is entirely different from that used in the books, and is based on characters that can be easily seen by any one with the aid of a hand lens, but of course fails to express the real affinities, being made solely for the purpose of facilitating the work of identification of unknown species. Of the four figures given, three are taken from Captain Casey's "Revision of the N. Am. Cucujidæ," while that of *Cucujus clavipes* is original. The above-mentioned paper has proved very useful in the specific separation, and should be consulted by those who have to deal with extra-limital forms.

Seventeen species are recorded in the Canadian lists; they belong to eight genera, which separate thus:—

A. Antennæ with distinct club; third joint never longer, usually shorter than the second.

Club of three rather suddenly enlarged joints...*Silvanus*.

Club of gradual formation.....*Nausibius*.

- AA. Antennæ usually without club; third joint (with one exception) longer than the second.
- b. Head widest behind the eyes; colour, bright red . . . *Cucujus*.
- bb. Head widest across the eyes.
- c. Antennæ shorter than head and thorax *Pediacus*.
- cc. Antennæ longer than head and thorax.
- f. Thorax distinctly serrate at sides *Brontes*.
- ff. Thorax not serrate at sides, sometimes with a single tooth at anterior angles.
- g. First antennal joint about as long as the head *Dendrophagus*.
- gg. First joint much shorter than head.
- Thorax as long or longer than broad, size usually large *Catogenus*.
- Thorax transverse, size small . . . *Læmophilus*.

SILVANUS, Latr.

Small, usually elongate and somewhat depressed beetles of brownish or ferruginous colour, the elytra with large round punctures arranged in rows. Antennæ with the last three joints forming a rather abrupt and loose club. They are usually found in grain, which is often damaged considerably thereby, or under bark, more particularly that of oaks and poplars. The Canadian species may easily be known by the following characters: Fig. 1 represents *S. surinamensis*.

Prothorax sub-oval, sides each with six large teeth (.10 in.)

..... *surinamensis*, L.

Prothorax elongate, strongly narrowed behind, sides not toothed.

Body very opaque. Thorax longer and with a sharp tooth at anterior angles (.11 in.) . . . *bidentatus*, Fabr.

Body somewhat shining. Thorax wider, teeth at angles less developed (.10-.11 in.) *planatus*, Lec.

Prothorax broader than long, anterior angles with a small tooth (.075 in.) *advena*, Waltl.



FIG. 1.

NAUSIBIUS, Redt.

One species (*N. dentatus*, Marsh.) is found here. It is larger than *Silvanus*, and the antennal club is of gradual formation. In

colour it is very dark brown, the body is densely and deeply punctured, and the sides of the prothorax are irregular, with six teeth. Length, .14 to .20 in.

CATOGENUS, Westw.

Represented by *C. rufus*, Fabr., a flat, chestnut-coloured insect, often taken under bark, and varying in size from a little over .15 to above .50 in. The prothorax is narrowed behind, distinctly punctured, but with a smooth median line. The elytra are deeply striate.

PEDIACUS, Shuck.

These are rather small, ferruginous or brownish insects of depressed form, broader than most Silvanini, which they resemble somewhat in the antennæ being terminated by a three-jointed club. They are thus differentiated:—

Surface opaque, lateral thoracic margin feebly undulated (.12-.16 in.)

..... *fuscus*, Er.

Surface somewhat shining, lateral thoracic margin feebly serrulate

(.12-.175 in.) *depressus*, Hbst.

CUCUJUS, Fabr.

A very striking insect on account of its colour is *C. clavipes*, Fabr. (Fig. 2.) The entire upper surface is scarlet, except the eyes and antennæ. The head is broad behind the eyes, the posterior angles being produced outward and backward, and rounded at tips. The thorax and elytra are very flat, the former having the disk impressed. Tibiæ and tarsi, dark. Length, .40 to .50 in. The form known as *puniceus*, Mann., is found in British Columbia, and may be known by the first antennal joint being usually testaceous instead of black, the more elongate body and narrower neck.



FIG. 2.

LÆMOPHILÆUS, Lap.

Small, usually flattened, but sometimes moderately convex insects occurring commonly under bark. They are, as a rule, more flattened and often much broader proportionally than the Silvanini, the antennæ frequently elongate, especially in the males. The females, besides having shorter antennæ, have often a narrower head and thorax. The following table will enable the recorded species to be recognized:

- A. Elytra with a light spot before the middle of each.
 - Elytral spot nearly circular, well defined, surface densely punctate (.10-.155 in.).....*biguttatus*, Say.
 - Elytral spot ill-defined, irregular, surface lightly punctured (.10-.12 in.).....*fasciatus*, Melsh.
- AA. Elytra uniformly ferruginous or testaceous or slightly darker at tip, not spotted.
 - Body flattened above.
 - Second antennal joint shorter than third (.07-.09 in.).....
 -*modestus*, Say.
 - Second antennal joint equal to third (.05-.08 in.)..*testaceus*, Fabr.
 - Body convex.
 - Anterior thoracic angles toothed (.08-.10 in.)..*convexus*, Lec.
 - Anterior angles rounded (.056-.08 in.).....*adustus*, Lec.

DENDROPHAGUS, Schönh.

D. glaber, Lec. (Fig. 3), is a shining, nearly black species (the elytra sometimes brown), varying from about .25 to .28 in. in length, of depressed elongate form, the head and thorax with deep coarse punctures, the wider elytra being punctate-striate. The antennæ are long, the first joint about equal in length to the head.

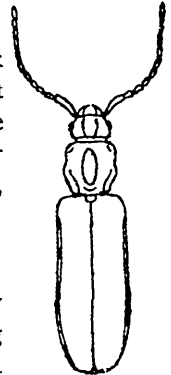


FIG. 3.

BRONTES, Fabr.

Body very flat, closely and coarsely punctured, antennæ nearly or quite as long as the entire body, the first joint about equal to the next three. The sides of the thorax are minutely serrate and sinuate. But one species (*B. dubius*, Fabr., Fig. 4) is actually recorded from Canada, but as another is probably common there, I give Capt. Casey's table for their distinction:—



FIG. 4.

- Elytra of male angulate posteriorly, head and thorax paler (.19-.23 in.).....*dubius*, Fabr.
- Elytra evenly rounded behind in both sexes, body above unicolorous (.19-.21 in.).....*debilis*, Lec.

The principal papers treating of the North American species of this small family are:—

1854. Leconte, J. L., Synopsis of the Cucuiides of the U. S. Proc. Acad. Nat. Sci., Phil., VII., p. 73-79.

1884. Casey, Thos. L., Revision of the Cucujidæ of America, north of Mexico. Trans. Am. Ent. Soc., XI., 1884, p. 69 to 112, pl. IV.-VIII.

SUMMARY OF THE U. S. PHASMIDÆ.

BY S. H. SCUDDER, CAMBRIDGE, MASS.

The following table, adapted from Brunner von Wattenwyl and Stal, will enable any one quickly to determine the genera in his collection of U. S. Phasmidæ. Our species are few in number and all apterous. Only one of them, *Diapheromera femorata* (Say), extends into Canada.

A¹. Tibiæ not furnished at apex beneath with a sunken areola to receive the base of the tarsi when bent upon them. (All of our genera of this division belong to the Bacunculidæ, in which the antennæ are much longer than the anterior femora and furnished with at least thirty joints, and the median segment is much shorter than the metanotum.)

b¹. Hind femora armed beneath on the median line near apex with one or more distinct spines.....*Diapheromera*.

b². Hind femora unarmed beneath next apex.

c¹. Head, especially in the ♀, furnished in front between the eyes with a pair of tubercles or longitudinal rugæ, sometimes highly developed; hind femora of ♀ hardly extending beyond the middle of the fourth abdominal segment, relatively stout; first joint of hind tarsi of ♀ shorter than the other joints together.....*Sermyle*.

c². Head unarmed in both sexes; hind femora of ♀ reaching the end of the fourth abdominal segment, relatively slender; first joint of hind tarsi of ♀ about equal to the other joints together.....*Bacunculus*.

A². Tibiæ furnished at apex beneath with a sunken areola to receive the base of the tarsi when bent upon them.

b¹. Antennæ many jointed, longer than the fore femora; median segment shorter than the metanotum; without spines on head, thorax or legs; anterior segments of abdomen transverse, at least in the ♀.

c¹. Mesothorax twice as long as the prothorax; basal joint of antennæ but little longer and little stouter than the second *Anisomorpha*.

c². Mesothorax no longer than prothorax; basal joint of antennæ fully twice as long and, especially on apical half, twice as stout as the second joint..... *Timema*.

b². Antennæ with less than twenty joints, shorter than the fore femora; anterior segments of abdomen much longer than broad *Bacillus*.

BACUNCULIDÆ.

Diapheromera, Gray.—The described species are *D. denticrus*, Stal, a large species found in the south-west (Louisiana and Texas); *D. femorata* (Say), of which *D. Sayi*, Gray, is a synonym, the commonest species and of the widest range, and *D. velii* Walsh, described from Nebraska. Apparently other species occur, but they have not been studied.

Sermyle Stal.—A species occurs in Texas, perhaps undescribed.

Bacunculus Burm.—Two species are found, one in Central Texas, the other in Southern Florida. Both are believed to be undescribed.

ANISOMORPHIDÆ.

Anisomorpha, Gray.—Three nominal species are known: *A. buprestoides* (Stoll'), *A. ferruginea* (Pal. de Beauv.) and *A. bivittata* (Say), all from the south-eastern and southern United States. Very likely there is only a single species (which must then take the name *buprestoides*), but *A. ferruginea* may be distinct from the others.

Timema (τίμημα) gen. nov.—This genus is closely allied to *Agathemera* Stal, but is readily distinguished by the somewhat remarkable antennæ, the first joint of which is very large, much enlarged apically, though narrowed a little at the extreme apex, several times longer than broad, and two or three times larger than the eyes. The head is of equal width with the prothorax, which is not narrowed anteriorly. A single species from Santa Cruz, California, has been brought to my notice by Prof. L. Bruner. I propose to describe it as *T. californicum*.

BACILLIDÆ.

Bacillus Latr.—Two species have been briefly noted: *B. coloradus* Scudd., found in Colorado, and *B. carinatus*, Scudd., occurring in Arizona and northern Mexico.

ALYPIA MARIPOSA, LARVA.

BY HARRISON G. DYAR, NEW YORK.

Mr. J. B. Lemberg has kindly sent me some alcoholic larvæ of *A. mariposa*, and I may record a few points in comparison with the eastern *A. octomaculata*. Mr. Lemberg has given the life history quite fully in the December number of the CANADIAN ENTOMOLOGIST, but our species have not been compared. The larva is especially interesting, as being the second one discovered in this genus. We have long been familiar with that of *A. octomaculata*, and everybody has described it; but the other species, though somewhat numerous, have remained unknown.

Mr. Lemberg has sent me specimens which appear to be in stages II., III., IV. and VI. The larvæ are noctuiform as is *octomaculata* with joint 12 enlarged. The tubercles are of the normal noctuid arrangement,* large, low-conical, rather less developed than in *octomaculata*, with single, large, smooth setæ. The width of head by calculation would be for the six stages—0.32, 0.50, 0.77, 1.2, 1.8, 2.8 mm. (ratio, 0.65). The measurements of the examples before me are 0.5, 0.75, 1.2 and 2.8 mm.

As compared with *octomaculata*, the markings are more generalized. Until the last stage, the larva is very plainly marked; besides the black tubercles, there is only present a diffuse white dorsal and stigmatal band, gradually becoming more distinct. In the last stage there are added four transverse black bands on each segment, instead of the eight of *octomaculata*, and these bands are confined to the space between the dorsal and stigmatal lines, and the two central ones on each segment are fused together. The abdominal leg plates are pale, instead of black, as in *octomaculata*. The ground colour is duller than in the eastern species. Instead of the bluish-white ground with the transverse orange bands on joints 5, 6, 7, and 12 of *octomaculata*, the whole ground is dull orange, relieved only by

* I., anterior subdorsal; II., posterior, more nearly lateral; III., lateral above spiracle; IV., stigmatal posterior; V., anterior, and VI., posterior inferior subventral; VII., three setæ in a triangle on leg plate; VIII., near medio-ventral line.

See article by Wilhelm Müller in Zool. Jahrbucher for 1886, on larvæ of South American Nymphalidæ. Tubercles VI. to VIII. do not appear characteristically on these specialized butterflies, and are not described by Müller.

the diffuse white longitudinal bands, which become obsolete anteriorly. The stigmatal band extends down below the spiracles and contrasts the black subventral tubercles. Its central part represents the intersegmental, sub-stigmatal white patches of *octomaculata*, though the marking is here quite undefined. Posteriorly the white bands tend to usurp the whole ground area, showing the origin of the white ground in *octomaculata*.

Nearly two years ago, Mr. Lembert sent me an egg of *A. mariposa* (or possibly *A. Ridingsii*). The following is its appearance under the microscope:—Flattened, round, strongly depressed centrally at the micropyle. Rather less than forty deep grooves run vertically, a few not reaching the summit; the edges of these grooves are somewhat sinuate, as if formed of rows of large pits which had become confluent in a vertical direction. In a rather large area around the micropyle, the grooves cease and are replaced by closely crowded punctures, but not small, with sharply elevated rims. Diameter, .7 mm. Height about .2 mm. Base flattened.

ACTIAS LUNA.

On 24th May Mr. Lachlan Gibb took a female, which he left alive to get eggs, a number of which were laid between the 25th and 29th. On the 14th June the eggs were hatching, and the larvæ were offered butternut leaves, which they eat readily, and matured very rapidly. About the 27th of the month, Mr. Gibb kindly gave me four of these larvæ, which were then apparently more than half grown. They moulted once only, so far as my observations went, after I received them, and on 12th July three spun their cocoons, the fourth doing this on the 16th. Early in August Mr. Gibb asked me to take charge of his cocoons, and keep them with mine, as giving a better opportunity of getting another lot of eggs next season, and on 20th August I was surprised to find that one of Mr. Gibb's cocoons had disclosed the imago, a ♀. Thinking that this was only the forerunner of others, I kept it alive, taking all the cocoons down with me to Murray Bay, but no other emergence took place.

Mr. Street, jr., of this city, has since informed me that he saw a specimen on our mountain at about the same time as this one emerged.

H. H. LYMAN, Montreal.

CANADIAN COCCIDÆ.

I. THE SPECIES OF CHIONASPIS WHICH INFEST TREES OF THE TRIBE
BETULÆÆ.

BY T. D. A. COCKERELL, LAS CRUCES, NEW MEXICO.

In 1869 Signoret described a species from Switzerland as *Chionaspis alni*. It was found on the bark of the alder (*Alnus communis*). This species has never been seen in America, but in 1883 Comstock announced a form from alder and *Viburnum* as *Chionaspis Lintneri*. Since the latter date our knowledge of the matter seems to have remained without additions. Mr. James Fletcher has just sent me a *Chionaspis* plentifully infesting the bark of *Betula papyrifera*, from Charlottetown, Prince Edward Island, about 46° N. Lat. I examined this with interest, owing to the locality and the host plant, and on comparing it with Comstock's account of *C. Lintneri*, I have no doubt that it is the same.

The following description was made from the Charlottetown specimens:—

♀ scale white, with the exuviae rather small, orange-brown. Scale very broadly pyriform in outline, some nearly circular without the projection on which are the exuviae. Length of scale about 2 mm.

♀ (soaked, not boiled, in liquor potassæ) pale lemon-yellow. Mouth parts large. Ventral grouped glands well-developed, caudolaterals 31, cephalolaterals 38, median group with 18 orifices. A group of nine to fifteen oval dorsal pores situated nearly opposite the lateral groups of ventral glands. Bands of dorsal oval gland-orifices very distinct. The usual sac-like bodies between the lobes. Anal orifice between the cephalolateral groups of glands.

Median lobes large, rounded at their ends, but not truncate; their two sides, if continued to a point, would meet at a little less than a right angle. Lobes touching at base, thence widely diverging at about a right angle; not distinctly notched.

Second lobes shorter, rounded, with a small appendage or lobule placed cephalad.

Third lobes rounded, low, forming less than a hemisphere, with a small lobule placed caudad.

Margin beyond the lobes irregularly crenate, slightly serrate.

Spine-like plates as in allied species, two between first and second

lobes, three between second and third, next a large pair, then another larger pair, and then a group of five to nine. These characters are quite variable.

Comparing the above with Comstock's account of *Lintneri*, one or two points call for notice. Comstock says he found the ♀ reddish-brown, with the last segment yellow, but supposes in life it would be reddish. This I doubt, but my specimens are not alive, so I cannot say certainly what colour they originally were. In his table of *Chionaspis* (2nd Cornell Rep., p. 98) he separates *Lintneri* from *salicis* by two characters:—

(1.) *Distal ends of mesal lobes pointed or obscurely trilobed.*

They are not exactly pointed, and the trilobation is very obscure, but the distinction intended seems a valid one.

In *salicis* these lobes are more truncate altogether.

(2.) *A single plate laterad of each second lobe, and usually two plates laterad of each third lobe.*

This appears to break down altogether; the first specimen I examined was as above described, with two and three plates; but the character was not constant, the next one looked at being as typical *Lintneri*.

On comparing the Charlottetown scales with scales of *C. salicis* received from Mr. Newstead, I found that they were practically alike. Comstock says he cannot tell the scales of *Lintneri* (♀) from *salicis*,—neither can I.

If Comstock had not described *Lintneri*, I think I should have placed the Charlottetown insect, for the present, as *C. salicis*, var.; but although it is extremely near to *salicis*, it must be admitted that it is not really the same, and the name *C. Lintneri* stands valid.

Fortunately I had some scales of *C. alni*, Sign., sent to me by Mr. K. Sulc, collected at Kralové Dvur, Bohemia. On comparing them with the Charlottetown *Lintneri*, they were manifestly distinct, being narrower, not so white, with paler exuviae. They were from *Alnus glutinosa*.

It may not be out of place here to call attention to *Aspidiotus betulae*, Baren sp., 1849, which is listed in Prof. Smith's New Jersey Catalogue. It is a pretty and distinct species, but I have seen only European specimens.

II. PRELIMINARY NOTE ON THE SPECIES OF *LECANIUM* FOUND ON OAK IN NORTH AMERICA, WITH ESPECIAL REFERENCE TO ONE ON *QUERCUS RUBRA*.

Some time ago Mr. James Fletcher sent me specimens of a *Lecanium* found at Jubilee Point, Rice Lake, Canada, on *Quercus rubra*. This was handed to Mr. J. Bennett for examination, and was found by him to present the following characters:—

Scale, 4 mm. long, $2\frac{1}{2}$ wide, 2 high. Antennæ 7-jointed, formula 3 (2 1) 7 5 4 6. 7 was almost as long as 2. Tarsus, 2; length of tibia; claw short and not very sharp.

There are four species of *Lecanium* known from oaks in North America, the characters of which, according to Signoret, are as follows (excluding non-essential details):—

L. antennatum, Sign. — Scale, 5 mm. long, $3\frac{1}{2}$ wide, 3 high.

Antennæ 7-jointed, 3 very long, 7 longer than 4, 5 or 6, which are short. Tarsus a little longer than tibia, claw stout. Distinguished from *quercitronis* by its more elongate form.

L. quercitronis, Fitch.—Scale, 3 to 5 mm. long, 3 to 4 wide, hemispherical, somewhat elongate in lateral profile. Antennæ 7-jointed, 3 and 4 longest, nearly equal, 5 and 6 shortest, 7 as long as 4. Tibia longer than tarsus; claw very small. On black oak.

L. quercifex, Fitch.—Scale, 7 mm. long, 4 wide, 4 high. Antennæ 7-jointed, 3 and 4 equal, 5 and 6 equal and shortest, 7 as long as 5 + 6. Tarsus as long as tibia. On white oak.

L. quercus (Linné?), Sign.—Scale, 7 mm. long, $3\frac{1}{2}$ wide, $3\frac{1}{2}$ high. Antennæ not seen by Signoret. Tarsus not quite so long as tibia. More rugose than *quercifex*, but less so than *antennatum*. This can hardly be the true Linnæan insect.

In Europe are found on oaks:

L. cmerici, Planch.—On the "evergreen oaks" in South Europe.

L. fuscum, Gmel.—On *Quercus robur*; scale, 6 mm. diam.; antennæ 6-jointed, 3 much longer than 4. See Douglas, Ent. Mo. Mag., Oct., 1887, p. 98.

L. ciliatum, Dougl.—In England. See Ent. Mo. Mag., 1891, p. 67.

? *L. quercus*, Linn.—On *Quercus robur*. See Douglas, Ent. Mo. Mag., Oct., 1887, p. 99. These four names appear to represent only three recognizable species.

Putting aside the European forms, which do not appear to occur in America, we have two elongate species and two short ones. Our scale on *Q. rubra* evidently belongs with the latter. The main distinction between *antennatum* and *quercitronis* is in the antennæ, and here we see at once that our form falls in with the former, having the third joint very much longer than 4. There would seem, however, to be a slight difference in the legs.

On the whole, the evidence so far obtained cannot be said to support the view that the Canadian insect is new, and distinct from *antennatum*, though it may stand as a variety. For the present it can be recorded as *Lecanium antennatum*, Signoret, variety.

PROTECTIVE MIMICRY IN SPIDERS.

BY F. M. WEBSTER, WOOSTER, O.

In the concluding volume of his admirable work on "American Spiders and their Spinning Work," page 47, Dr. McCook gives the experiences of Mr. H. O. Forbes, and myself, with two species of spiders, whose forms and habits of spinning webs on leaves, together with the peculiar coloration of their bodies, gives them a deceptive resemblance to the droppings of birds. Dr. McCook tries to account for the phenomena of this protective resemblance, by attributing it to the results of natural selection.

Now, it seems to me that natural selection, alone, would not have carried the deception so far as seems to have been done in these cases, and I think, away from their curiously arranged web, these spiders are not so deceptive in appearance, and that the spider has itself learned that by remaining in a rigid position on a sheet of web, arranged in a certain way on the leaf, it will be enabled to escape its enemies, and, what may be of almost as much importance, secure a better supply of food.

To suppose this is hardly over-estimating the intelligence of these spiders. In my own case, I have thought that the deception might have been due, in part at least, to myself, and have often thought that on meeting with it a second time I should recognize it without much trouble.

The Doctor has apparently overlooked the fact that Mr. Forbes

met with his spider a second time, and was even more badly fooled by it than before. In Proc. Zool. Soc., 1883, p. 586, he gives his experience as follows:—

“On June 25th, 1881, in the forest near the village of Lempar, on the banks of the Moesi River, in Sumatra, while my “boys” were procuring for me some botanical specimens from a high tree, I was rather dreamily looking on the shrubs before me, when I became conscious of my eyes resting on a bird-excreta-marked leaf. How strange, I thought, it is that I have never got another specimen of that curious spider I found in Java which simulated a patch just like this. I plucked the leaf by the petiole while so cogitating, and looked at it half listlessly for some moments, mentally remarking how closely that other spider had copied nature; when to my delighted surprise, I discovered I had actually secured a second specimen, but the imitation was so exquisite that I really did not perceive how matters stood for some moments. The spider never moved while I was plucking or twirling the leaf, and it was only when I placed the tip of my finger on it, that I observed that it was a spider, when it, without any displacement of itself, flashed its falces into my flesh.

“The first specimen I got was in West Java. While hunting one day for lepidoptera I observed a specimen of one of the Hesperidæ sitting, as is often a custom of theirs, on the excreta of a bird on a leaf; I crept near it, intending to examine what they find in what one is inclined to consider incongruous food for a butterfly. I approached nearer and nearer, and at last caught it between my fingers, when I found that it had, as I thought, become glued by its feet to the mass; but on pulling gently, the spider, to my amazement, disclosed itself by letting go its hold. Only then did I discover that I was not looking on a veritable bird's excreta.”

Since reading of Mr. Forbes's later experience I have given myself no mental promises as to how readily I should be able to recognize *Madam Misumena ratia* (?) when I next meet her unexpectedly. Unless greatly mistaken, I have beaten this same spider from branches of trees while collecting beetles, and experienced no difficulty in recognizing its nature as it dropped into an inverted umbrella, and am quite sure that, without the white web on the leaf, which resembles the white splashing of the semi-fluid excreta, it would be far less deceptive.

PREPTOS, TAMPHANA AND AROTROS — A REVIEW.

In the Proceedings of the Zoological Society of London for 1892, Mr. W. Schaus describes as new 180 species of "Bombycid" moths from Mexico and various parts of South America, with three "new genera." Of these, one is located in the Lasiocampidæ and two in the Bombycidæ. All these generic descriptions are utterly inadequate, and the question should be raised seriously whether names founded on such descriptions should be recognized. We are accustomed to believe that the classification of Herrich-Schaffer is still used by lepidopterists, at least in its fundamental features; but in these descriptions the word "vein" does not appear. The description of the Lasiocampid is the longest of the three, yet the author gives but eight characters by which to identify his genus. Five of these are common to nearly all the genera of the family; two others appear in several genera already well known, and the genus must be distinguished from the one hundred and forty odd genera of Lasiocampidæ already catalogued, by the female having an expanse of wing of 95 mm., and a short abdomen, "not extending beyond the secondaries!"

Surely it is time to call a halt. Some standard of generic description must be adopted, or else what is the use of multiplying so-called "descriptions" that do not describe. Better to save puzzling over meaningless sentences, and simply say:—"New genus; type in my collection."

It would seem that the least that could be expected of an author was to tell how the venation differed from the nearest ally of the "new genus," the same being already described. A full description of the venation, or a figure, would be preferable. Even a complete knowledge of the wing structure is not sufficient to place a genus; but it is among the essentials.

I think all who have had anything to do with generic characters (which, unfortunately, does not seem to be a majority of lepidopterists!) will agree with me that the practices to which I am referring are reprehensible, and deserving of a most vigorous protest.

HARRISON G. DYAR.

ON THE COLEOPTERA OF NEW MEXICO AND ARIZONA,
INCLUDING BIOLOGIC AND OTHER NOTES.

BY C. H. TYLER TOWNSEND, LAS CRUCES, N. MEX.

A paper giving biologic notes on some New Mexico Coleoptera was published in "Insect Life," Vol. V., p. 37-40; and a paper treating of the blister-beetles or meloids of New Mexico and Arizona, in "Psyche," 1894, p. 100-102. The species mentioned in the former are mostly incorporated in the present paper, those in the latter not at all. These three papers, therefore, will serve as a catalogue, or list with notes, of all the Coleoptera observed by the writer in New Mexico and Arizona, except a few, the names of which it has been impossible to get from those to whom they were sent for determination.

I will not attempt to point out here any peculiarities in the Coleopterous fauna of this region, but let the list speak for itself. The absence, scarcity, and abundance of certain families and groups are interesting, and characteristic as a rule, though I cannot say that the list represents the true proportions, as my collecting was far too meagre.

All the species were determined by Dr. Riley, with the exception of those marked *, which were determined by Mr. Liebeck.

Tetracha Carolina, L.—Las Cruces, N. M. August 21st to Sept. 10th; seven. Grant County, N. M. (W. J. Howard); one.

Cicindela obsoleta, Say.—Grant Co., N. M. (W. J. H.); one. It is 19 mm. long, brownish black, with four creamy markings on each elytron, the inner or fourth one small, resulting from the breaking of the median large one into two.

Cicindela prasina, Lec.—Grant Co., N. M. (W. J. H.); one. It is 17 mm. long, bright vivid green, with six spots on each elytron, the three principal markings each broken into two.

Cicindela longilabris, Say.—San Francisco Mountain, Arizona, July 15th; one. Much like a large specimen of *vulgaris*, but with elytral markings very delicate, indistinct.*

Cicindela pulchra, Say.—Navajo Springs, Arizona, July 24th; ten specimens. Grant County, N. M. (W. J. H.); two large specimens.

Cicindela punctulata, Fab.—Navajo Springs, Arizona, July 24th; one. Grant County, N. M. (W. J. H.); one.

Cicindela micans, Fab.—Las Cruces, N. Mex.; one. Zuni, N. M., July 29th; one. Grant Co., N. M. (W. J. H.); one. Green species.

Cicindela macra, Lec.—Las Cruces, N. M.; four.

Cicindela sperata, Lec.—Winslow, Arizona, July 19th; one. Aztec, Arizona, July 21st; two. Navajo Springs, Arizona, July 24th; five.

Cicindela, sp. indet.—Grand Canon, Arizona. Hance trail; 2,500 to 5,000 ft. below rim. July 8th to 11th; twenty-seven collected. *

Calosoma scrutator, Fab.—Las Cruces, N. M., May 17th, 1892; one. Palomos, N. M., June 15th, 1892; one seen to drop from a cottonwood tree, on which it had doubtless been hunting and devouring *Hemileuca* larvæ that were present on the tree. Another on a tree, and still another taken on ground at a spring. Grant County, N. Mex. (W. J. H.); one.

Calosoma peregrinator, Guér.—Grant County, N. M. (W. J. H.); one. Blackish.

Pasimachus obsoletus Lec.—Grant County, N. M. (W. J. H.); one.

Pterostichus scitulus, Lec.—Zuni, N. M., July 29th, 1892. A green species; one.

Harpalus caliginosus, Fab.—Grant Co., N. M. (W. J. H.); two.

Cymbiodyta fraterculus (? Lec.—? Ilybius).—Soledad Canon, Organ Mountains, N. M. In a north side branch, about two miles up. May 23rd, 1891; one. In same spring with following. A smaller black water-beetle.

Rhantus atricolor, Aubé.—Soledad Canon, Organ Mountains, N. M. Same north side branch, about two miles up. May 23rd, 1891. Numerous specimens (11) taken from a spring full of dead leaves.

Hydrophilus triangularis, Say.—Las Cruces, N. M.; one.

Hydrocharis glaucus, Lec.—Grand Canon, Arizona. Hance trail. July 8th, 1892; one. An oblong-hemispherical black water-beetle, taken in stream. *

Necrophorus guttula, Mots.—Johnson's Basin, Socorro Co., N. M.; one. June 23rd. Black and orange.

Megilla vittigera, Mann.—G. Bar Ranch, Zuni River, Arizona. July 27th, 1892; three. *

Hippodamia sinuata, Muls.—Colorado, N. M., June 14th, 1892; one.

Coccinella oculata, Fab., and var. *abdominalis*, Say.—Las Cruces, N. M. May 22nd, 1892. Many pupæ found on black locust at Central Hotel in Placita. On June 13th, 1892, both the species and the variety were found on mesquite (*P. juliflora*) on road between Detroit and Rincon, N. M., and a great many larvæ were also seen on the mesquite.

Mysia Hornii, Cr.—Turkey Tanks, Arizona, July 1st; one.

Chilocorus, sp. ?—Las Cruces, N. M., July 16th, 1891. Found empty larval skins of a coccinellid on trunks of apple trees. They were in patches of as many as twenty in places, usually just beneath where a large limb branched out from the trunk.

Hyperaspidius trimaculatus, L.—Las Cruces, N. M.

Epilachna corrupta, Muls.—Las Cruces, N. M. Very injurious to beans. (See Insect Life, IV., 26.)

Erotylus Boisduvalii, Chev.—Grant County, N. M. (W. J. H.); one. This is a peculiar beetle, wholly black except the elytra, which are pale yellowish-white, with scattered, very small, shot-like black dots and a little black on outer edge in middle of each elytron.

Dermestes marmoratus, Say.—Chaves, N. M. Aug. 6th, 1892; one.

Attagenus Hornii, Jayne.—Las Cruces, N. M.; one beaten from mesquite (*P. juliflora*), May 12th, 1891. On mesa.

Trogoderma tarsale, Melsh.—Las Cruces, N. M. Found May 9th, in spring mattress of a bed, in some numbers. It was a hair mattress, and the beetles doubtless bred in it.

Anthrenus varius, F.—Las Cruces, N. M. One beaten from flowers of mesquite (*P. juliflora*), May 10th, 1891. On mesa.

Hololepta populnea, Lec.—Las Cruces, N. M., Nov. 14th, 1892. Found under bark of cottonwood log, in wet black inner layers of decaying bark, numbers of adults of this flattened histerid. They were infested with mites. Pupæ of this species were found under cottonwood bark, November 16th and 17th, 1892, in Alameda and *Bosque vedado*. They were enclosed each in a little cell in the inner layers of bark, the cell opening against the sap-wood. The cell is formed of pieces of the inner bark, and is placed between the inmost layers of bark and the sap-wood, being attached to the

former. The pupa is wide, flattened, tapering rather shortly behind, and is slightly hairy anteriorly, with a pair of short anal styles posteriorly. It was bred to the imago state.

Hister Ulkei, Horn.—Zuni, N. M., July 29th, 1892. A black and red histerid.

Paromalus estriatus, Lec.—Las Cruces, N. M., Nov. 14th, 1892. Found under bark of cottonwood, in the wet black inner layers.

Saprinus discoidalis, Lec.—Winslow, Arizona, June 29th, 1892. A greenish-black histerid.

Carpophilus hemipterus, Linn.—Las Cruces, N. M., April, 1892. Found in ensilage by Samuel Steel, in company with some staphylinids. The ensilage was stored the previous summer, and kept tight all winter, so that the beetles had no access except from the adjoining earth. It was covered several feet deep with earth.

Carpophilus pallipennis, Say.—Las Cruces, N. M., May 18th, 1892. Numerous specimens found in yellow flowers of an *Opuntia*, sp., on Tortuga Mt. A dark, reddish-brown species, with elytra yellowish, except at inner basis.

Hesperobennus, n. sp.—Soledad Canon, Organ Mts., N. M. Eating newly-forming flowers of *Dasyllirion Wheeleri*. (See *Insect Life*, V., 38, where it was referred to *Rhizophagus*.)

Sandalus porosus, Lec.—Zuni, N. M., July 31st, 1892; one.

Aelocera rorulenta, Lec.—Hart Little Spring, Arizona, July 4th, 1892; one. A most beautiful brown, bronze-yellow-dusted species.*

Chalcolepidius Webbia, Lec.—Grant County, N. M. (W. J. H.); two.

Alaus lusciosus, Hope.—Las Cruces, N. M., May 26th, 1892; one. Greatly resembles *oculatus*.

Melanotus, sp.—Grant County, N. M. (W. J. H.); one.

Gyascutus planicosta, Lec.—Grand Canon, Arizona. Hance trail. 3,000-4,000 feet below rim. July 10th, 1892; one. Also common at Las Cruces, N. M., on larrea and mesquite. (See *Insect Life*, V., 38.)*

Gyascutus carolinensis, Horn.—Grand Canon, Arizona. Hance trail. 3,000-4,000 feet below rim. July 11th, 1892. A bronzed species, but smaller than *planicosta*.*

Psiloptera Webbia, Lec.—Las Cruces, N. M., August 19th, 1892. Found six of this large purplish-blue metallic buprestid, with brassy yellow spots, on *Salix longifolia* in the Alameda. It seemed to be eating the leaves. On August 21st many more were found on the same *Salix* in other localities along the *Accequia madre*. One was found also Nov. 14th, 1892, on same *Salix* in Alameda. The beetle is common, but I have never found it on anything else except this *Salix*. Grant County, N. M. (W. J. H.); one.*

Buprestis Nuttalli, Kirby.—Grant County, N. M. (W. J. H.); one. This beautiful species is blackish, with a slight greenish lustre, elytra each with three yellow marks in a longitudinal line near centre, the two posterior ones on the right elytron coalescing by a narrow neck.

Buprestis maculiventris, Say.—Grant County, N. M. (W. J. H.); one. A blackish species.

Melanophila miranda, Lec.—Grant County, N. M. (W. J. H.); two. A beautiful black and yellow species.

Chrysobothris carinipennis, Lec.—Flagstaff, Arizona, July 3rd and 16th, 1892; two.

Chrysobothris debilis, Lec.—Las Cruces, N. M., May 13. A pair *in coitu*.*

Chrysobothris, n. sp.—Woodruff, Arizona, June 26th, 1892. A single specimen of a beautiful and most vivid metallic green species.

Thrinopyge alacris, Lec.—Las Cruces, N. M. Bred from dead flower-stalks of *Dasytirion Wheeleri*. (See Insect Life, V., 38, where the species is queried.) June 1st, 1892. One more issued from the flower-stalks gathered May 18th, 1892. Another issued June 6th, 1892.

Thrinopyge ambiens, Lec.—Las Cruces, N. M. Bred from *Dasytirion Wheeleri* flower-stalks of previous year. August 11th, 1892, after returning from a two-months' field trip, four of the beetles were found dead in the breeding cages. The species is about the size of *T. alacris*, but is deep metallic green with a yellowish border.*

Acmaeodera mima, Gory.—Soledad Canon, Organ Mts., N. M., May 23rd, 1891; one on thistle. Looks much like *A. pulchella*.

Acmacodera pulchella, Hbst.—Soledad Canon, Organ Mts., N. M., May 23rd, 1891; one on thistle flower.

Acmacodera culta, Web.—Las Cruces, N. M., August 11th, 1892. A dead specimen found issued from dry flower stalks of *Dasyilirion Wheeleri*. August 18th another had issued.*

Lygistorus rubripennis, Lec.—Flagstaff, Arizona, July 2nd and 3rd, 1892; two.

Pyropyga fenestralis, Melsh.—Grand Canon, Arizona. Hance trail July 10th, 1892; one. A small blackish lampyrid, with thorax red on sides.*

Chauliognathus basalis, Lec.—Grant County, N. M. (W. J. H.); two.

Chauliognathus scutellaris, Lec.—Las Cruces, N. M., August 19th; one.

Collops bipunctatus, Say.—Grand Canon, Arizona. Plateau on rim at Hance's. July 7th, 1892. Blue-green, thorax fulvous with two black spots; head black at base, including eyes, fulvous anteriorly and antennæ fulvous with great enlargement of third joint.*

Pristoscelis rufipes, Mots.—Las Cruces, N. M. Several beaten from flowers and foliage of mesquite (*P. juliflora*), May 10th, 1891. On mesa. Another beaten from same plant three miles south of Mesilla, May 16th, 1891. This is a very small pubescent elongate beetle. It is smaller, blacker and not so pubescent as *P. suturalis*.

Pristoscelis suturalis, Lec.—Las Cruces, N. M. Several beaten from mesquite (*P. juliflora*), May 16th, 1891, three miles south of Mesilla. A small pubescent beetle.

Cymatodera Belfragei, Horn.—Chaves, N. M., August 6th, 1892; one. Elongate, blackish species.

Trichodes ornatus, Say.—Hart Little Spring, Arizona, July 4th, 1892; two. Grant County, N. M. (W. J. H.); five.*

Clerus spinolæ, Lec.—Las Cruces, N. M. (?).

Hydnocera tricondylæ, Lec.—Cocanini Plateau, Arizona, July 6th, 1892; one.

Lucanus mazama, Lec.—Grant County, N. M. (W. J. H.); one ♀.

Platycerus oregonensis, Westw.—Hart Little Spring, Arizona, July 14th, 1892; three.*

Phanæus quadridens, Say.—Grant County, N. M. (W. J. H.); one ♂. This species is same size as *difformis*, but dark green without

bronzy lustre, and elytra smooth. The strong backwardly curved horn on head of ♂ reaches back nearly to base of elytra.

Phanæus difformis, Lec.—Grant County, N. M. (W. J. H.); 2 ♂'s and 1 ♀.

Atenius læviventris, Horn.—Las Cruces, N. M. Flying in summer.

Aphodius granarius, Linn.—Santa Fé, N. M., April 20th, 1892. Mr. J. F. Wielandy sent this species, reporting it to be doing extensive damage to his hot beds by issuing in immense numbers from the compost in the beds, thus throwing out the newly-sprouted seedlings, roots and all. Destroyed three-fourths of his young plants. He reports that "thousands upon thousands" issued. The layer of compost consisted of old rotten manure mixed with earth, and was put on top of the beds. Beneath this was a three-foot layer of fresh dung to furnish heat. The injury was done by the mere mechanical force of the issuing of the insects.

Ochodeus striatus, Lec.—Winslow, Arizona, July 19th, 1892; one. A small pale rufous scarab.

Macrodactylus uniformis, Horn.—Near Rincon, N. M., June 13th, 1892; one. On mesquite or weeds.

Diplotaxis brevicollis, Lec.—Apache Spring, Socorro County, N. M., June 21st, 1892; one. Black species.*

Diplotaxis truncatula, Lec.?—Rincon, N. M., June 14th, 1892; one. Blackish species.*

Diplotaxis Haydenii, Lec.?—Rincon, N. M., June 13th, 1892; one. Rufous brown species.*

Listrochelus disparilis, Horn.—Continental Divide, Tenaja, N. M., August 1st, 1892; six specimens, attracted to light of camp fire at night.*

Listrochelus scoparius, Lec.—Continental Divide, Tenaja, N. M., August 1st, 1892; six specimens, attracted to light of camp fire at night Flagstaff, Arizona, July 3rd, 1892; one.*

Polyphylla 10-lineata, Say.—Flagstaff, Arizona. A 1 Ranch, Arizona Cattle Co., July 15th, 1892; one. Attracted to light in evening. A gray-brown scarab, conspicuously striped with whitish.

Plusiotis gloriosa, Lec.—Grant County, N. M. (W. J. H.); three.

Cyclocephala immaculata, Oliv.—Las Cruces, N. M. Attracted in numbers to light in houses in evenings in summer. A pale coloured chafer.*

Ligyris gibbosus, DeG.—Las Cruces, N. M. Attracted to light.*

Ligyris ruginasus, Lec.—Grant County, N. M. (W. J. H.); one. Light yellowish-rufous in colour.

Xyloryctes satyrus, Fab.—Grant Co., N. M. (W. J. H.); one ♀.

Strategus julianus, Burm.—Grant Co., N. M. (W. J. H.); a pair, ♂ ♀.

Dynastes tityus, Linn.—Grant County, N. M. (W. J. H.); one ♂. This species may be known by the lower or cephalic horn having two prongs at the end, and by the short stout spine at lower base of thoracic horn. Length to tip of horns, over 60 mm.; width, 26 mm.

Dynastes Grantii, Horn.—Grant County, N. M. (W. J. H.); one ♂. But slightly smaller than *D. tityus*, the lower or cephalic horn shorter and simple at end, and no spine at base of thoracic horn.

Allorhina mutabilis, Gory.—Grant County, N. M. (W. J. H.); Las Cruces, N. M. In some specimens the green is restricted to the inner basal portion of each elytron.

Gymnetis, sp.—Grant County, N. M. (W. J. H.); one. A soft black cetoniid, with hardly a greenish shade except below.

Euphoria Kernii, Hald.—Las Cruces, N. M., June 28th, 1891. There are two forms of this species. Six were taken of the beautiful yellowish or flavous, and three of the blackish with creamy markings on elytra; all flying about over ground in sandy and bear spot near sheds at College.

Euphoria inda, Linn.—Grant County, N. M. (W. J. H.); one.

Cremastochilus crinitus, Lec.—Grant County, N. M. (W. J. H.); one. Wholly brownish-black.

Derobrachus geminatus, Lec.—Las Cruces, N. M. A female specimen taken is 83 mm. long by 26 mm. broad. This is a giant prionid. A male specimen was taken August 22nd, which was 54 mm. long by 16½ mm. broad. It is elongate, narrowed and shining brown.

Prionus californicus, Mots.—Las Cruces, N. M. A female specimen is 53 mm. long by 23 mm. broad. Antennæ are not stout in this sex. Another female taken by W. J. Howard in Grant County (1882) is 40 mm. long by 17 mm. broad. A male, with

heavy serrate antennæ, was taken in Holbrook, Arizona, June 26th. Another male was taken by Mr. W. J. Howard, in Grant County. It measures 38 mm. long by 15 mm. broad.

Criocephalus productus, Lec.—Cedar Ranch, Arizona, July 6th; one. Blackish in colour.

Rhomaleum simplicicolle, Hald.—Grant County, N. M. (W. J. H.); two.

Dendrobias quadrimaculatus, Dup.—Las Cruces, N. M. The male has long clasp-like mandibles. But some males also occur which are smaller, and have smaller clasp-like mandibles. Two on *Prosopis juliflora*, June 25th, ♂ ♀, but taken separately. Seven on *Spharalcea angustifolia*, June 30th, one pair being *in coitu*. One on willow (*Salix*), July 16th.

Stenaspis verticalis, Serv.—Las Cruces, N. M., June 28th; one. On *Prosopis juliflora*. This species differs from *S. solitaria* by the thorax being reddish or brownish-yellow. A specimen taken on same plant June 29th, Las Cruces, N. M., has also the front half of elytra more or less reddish, like the thorax.

Stenaspis solitaria, Say.—Las Cruces, N. M., June 28th, 1891. One of this very large, elongate, pure black longicorn on mesquite (*P. juliflora*). June 29th, 1891. Another on same plant.*

Tragidion annulatum, Lec.—Grant County, N. M. (W. J. H.); one. The antennæ are shorter and stouter than in *T. fulvipenne*, and yellow on median portion.

Tragidion fulvipenne, Say.—Winslow, Arizona, June 29th; one. On plant No. 261, N. M. Agricultural College Herbarium. A black species, with elytra orange-yellow except at bases.

Aethecerus latecinctus, Horn.—Mesilla, N. M., May 16th. On mesquite. Beaten from flowers of *P. juliflora*, three miles south of Mesilla. It much resembles a *Neodytus*.

Batyle suturalis, Say.—Las Cruces, N. M.; three.*

Schizax senex, Lec.—Las Cruces, N. M., March 27th; one. On mesquite (*P. juliflora*); on a twig.

Tylosis maculata, Lec.—Sabinal, N. M., August 7th. One specimen having two black spots at base of each elytron, and a larger one near tip. One from Grant County, N. M. (W. J. H., 1882),

has the spot near tip of elytron very large, and also another intermediate one same size. Another from same source lacks the spot near tip; while still another lacks also the middle or intermediate spot, thus having only the two spots at base of each elytron. The species is orange-red, with head, antennæ and legs black, and with five black spots on proscutum.

Crossidius intermedius, Ulke.—Las Cruces, N. M. Common on a yellow-flowering weed (*Solidago* sp. ?).

Stenosphenus debilis, Horn.—Grand Canon, Arizona. Hance trail; 3,000–4,000 feet below rim. July 11th, 1892: one. A small elongate blackish longicorn.*

Neoclytus irroratus, Lec.—Grant County, N. M. (W. J. H.); one. Rather stout, with rounded prothorax, and femora thickened apically; soft brown in colour, faintly whitish on elytra.

Rhagium lineatum, Oliv.—Grant County, N. M. (W. J. H., 1882); one.

Acmaeops pratensis, Laich.—San Francisco Mt., Arizona, July 15th, 1892: one. A small short lepturian, with pale yellowish elytra, having a dark vitta on each from shoulder to a point two-thirds of the way to tip.*

Pachyta liturata, Kirby.—Grant County, N. M. (W. J. H.); one. A rather broad lepturian, blackish in colour except elytra, which are pale yellowish, each with broad longitudinal brown vitta but little narrower than the elytron.

Leptura propinqua, Bland.—Hart Little Spring, Arizona, July 14th, 1892; one. An elongate black lepturian. Elytra straw-coloured, with one black spot in middle on outside, tips black, and a very faint black spot outside anteriorly.*

Leptura convexa, Lec.—San Francisco Mt., Arizona, July 15th, 1892; one large and two smaller ones. Hart Little Spring, Arizona, July 14th; one.*

Leptura aspera, Lec.—Grant County, N. M. (W. J. H.). The number of this specimen was lost, but I am quite sure the locality is Grant County. It is a uniformly opaque black species.

Monohammus titiliator, Fab.—Flagstaff, Arizona, July 2nd; one.

Tetraopes femoratus, Lec.—Seneca Ranch, Apache County, Arizona, June 25th, 1892; six specimens on a large broad-leaved *Asclepias*.* Grant County, N. M. (W. J. H.); one.

Coscinoptera axillaris, Lec.—Las Cruces, N. M.; one. This is a gray species with red on the outer base of elytra.

Cryptocephalus leucomelas, Suffr.—Grand Canon, Arizona. Hance trail. July 11th, 1892; one. A yellow and rufous brown species.*

Cryptocephalus, sp.—Las Cruces, N. M., May 16th, 1891. Three specimens, two *in coitu*, on growing stalks of a *Solidago*, three miles south of Mesilla. This is a species of a beautiful clear yellow colour. It could not be specifically determined either in Washington or Philadelphia, a specimen having been sent both to Dr. Riley and to Mr. Liebeck.

Cryptocephalus, sp.—Hart Little Spring, Arizona, July 4th, 1892; one.*

Chrysochus auratus, Fab.—Las Cruces, N. M., August 19th; two.

Doryphora rubiginosa, Rog.—Grant County, N. M. (W. J. H.): three. A tawny species.

Chrysomela dislocata, Rog.—Las Cruces, N. M., June 29th to 30th. On *Sphaeralcea (Malvastrum) angustifolia*. (See Insect Life, V., p. 39.)*

Chrysomela serpentina, Rog.—Las Cruces, N. M. Last of June. On *Sphaeralcea angustifolia*.*

Chrysomela sylvia, Stal.—Grant County, N. M. (W. J. H.): three.

Diabrotica vittata, Fab.—Las Cruces, N. M., July 8th, 1891. In small numbers on squashes on College farm. Eddy, N. M., August 14th, 1891. From F. E. Downs.

Galeruca (Trihabda?) nitidicollis, Lec.—Squaw Spring (south of Navajo Springs), Arizona, July 24th, 1892. A large number found on *Gutierrezia microcephala*, all adults. They were observed eating the leaves. *In coitu* at this date.

Galeruca notata, Fab.—Belen, N. M., August 7th. In numbers on *Helianthus annuus*, eating the leaves.

Oedionychis scalaris, Melsh.—Grand Canon, Arizona. Hance trail, toward rim. July 12th, 1892. Quite numerous on leaves of a bush. A very active flea-beetle, straw-coloured with five black dots on each elytron.*

Haltica obliterata, Lec.—Grant County, N. M. (W. J. H.); one.

Phyllotreta pusilla.—Santa Fé, N. M., May 25th, 1892. Received from Mr. J. R. DeMier, with report that they were very destructive to cabbages. A small dark greenish flea-beetle.

Octotoma marginicollis, Horn.—Grand Canon, Arizona. Hance trail. July 10th and 11th, 1892; four.*

Chelymorpha phytophagica, Cr.—Las Cruces, N. M., June 29th, 1891. On *Helianthus annuus*. A fine large black and red species.

Bruchus pauperculus, Lec.—Las Cruces, N. M.

Bruchus, sp.—Las Cruces, N. M. Bred from pods of tornillo (*Prosopis pubescens*). Pods were gathered in November, and the beetle issued in March following. Many more issued later.

Epitragus canaliculatus, Say.—La Vega de San José, N. M., August 4th: two.

Cryptoglossa lacris, Lec.—Grant County, N. M. (W. J. H.) Also Las Cruces, N. M. (See Insect Life, V., 39-40.)

Microschatia morata, Horn.—Grant County, N. M. (W. J. H.); one. A stout tenebrionid, wholly light brownish in colour.

Asida sordida, Lec.—Grant County, N. M. (W. J. H.); one. A blackish-brown tenebrionid, with rough elytra. Another specimen from same source is smaller and narrower, and constitutes a variety of this species.

Asida obovata, Lec.—La Vega de San José, N. M., August 4th; one. A black tenebrionid, with the body widened behind. Also one from Grant County, N. M. (W. J. H.), which differs in having the elytra rufous.

Eusattus reticulatus, Say.—Winslow, Arizona, June 29th; two. One from Grant County, N. M. (W. J. H.)

Eusattus muricatus, Lec.—Winslow, Arizona, June 29th; one.

Elcodes caudifera, Lec.—Winslow, Arizona, June 29th; two.

Trogloderus costatus, Lec.—Winslow, Arizona, June 29th; one. This is a blackish tenebrionid with grooved elytra.

Hymenorus punctatissimus, Lec.—Las Cruces, N. M., July 5th, 1891. Found a good many larvæ, probably this species, in burrows

of *Diatraea saccharalis* in growing stalks of corn on College farm, the burrows containing dead chrysalids of the *Diatraea*. Adult beetles of this species were found in numbers with them in the burrows. July 16th, 1891. Large numbers of the beetles found in sheaths of sorghum infested with aphides, on College farm.

Oxaxis pallida, Lec.—Winslow, Arizona, July 19th to 20th; two.

Myodites scaber, Lec.—Chaves, N. M., August 6th, 1892; two.*

Ophryastes tuberosus, Lec.—Grant County, N. M. (W. J. H.), one. A chunky grayish weevil, with prothorax warted on outer edges.

Eupagoderes decipiens, Lec.—Grand Canon, Arizona. Hance trail. July 11th, 1892; one.*

Eupagoderes desertus, Horn.—Winslow, Arizona, June 29th, 1892. A pair *in coitu*. The antennæ of both were infested with a small red mite. Large whitish gray rhynchophor. On plant No. 290, N. Mex. Coliege Herbarium.*

Cyphus lautus, Lec.—Grand Canon, Arizona. Hance trail, near rim of canon, July 12th, 1892; one. A small grayish curculionid.*

Otiorrhynchid gen. et. sp. ?.—Continental Divide, Tenaja, N. M., August 2nd, 1892; one.

Sitones californicus, Fah.—Las Cruces, N. M.; one.

Anthonomus canus, Lec.—Pache Spring, Socorro County, N. M. A small grayish weevil. Bred from galls of *Eurasta bigelovii* on *Bigelovia graveolens* collected June 21st, 1892. (See CAN. ENT.; 1893, p. 52.)

Tychius setosus, Lec.—Las Cruces, N. M. A single specimen beaten from mesquite (*P. juliflora*), three miles south of Mesilla, May 16th, 1891. This is a minute rhynchophor.

Scyphophorus acupunctatus, Gyll.—Grant County, N. M. (W. J. H.); one.

Rhodobaenus pustulosus, Gyll.—Grant County, N. M. (W. J. H.); one. Much resembles *13-punctatus*. Brick-reddish in colour.

CORRESPONDENCE.

ACRIDIUM AMERICANUM.

In October last, Mr. G. C. Anderson, upon one of his visits to me, enquired what was the largest grasshopper of the country, as he had taken one which had attracted his attention on account of its size. I showed him what we had in the collection of our native species, when he remarked that it was larger and prettier than anything that was there. He said he would bring it up some time. When he did, I was surprised at the striking difference in its appearance from anything I had ever observed. He said I might retain it, which I was very willing to do, and as I could not determine it, I spread its wings and waited till the time of our annual meeting, when Mr. Fletcher at once pronounced it to be *Acridium Americanum*, and the first reported to be taken in Canada. In his Eighth Missouri Report, Prof. C. V. Riley (page 104) thus speaks of it: "It is our largest and most elegant locust, the prevailing colour being dark brown, with a broad pale yellowish line along the middle of the back when the wings are closed. The rest of the body is marked with deep brown, verging to black, with pale reddish-brown, and with whitish or greenish-yellow; the front wings being prettily mottled, the hind wings very faintly greenish with brown veins, and the hind shanks generally coral-red with black-tipped white spines. The species is quite variable in colour, size and marks, and several of the varieties have been described as distinct species." In another place the Professor remarks: "It has a wide range, hibernates in the winged condition, and differs not only in size and habits from the Rocky Mountain locust, but entomologically is as widely separated from it as a sheep from a cow." I would describe the front wings of the specimen before me as being light brown, semi-transparent and mottled with darker brown; the hind wings as hyaline, extremely delicate in texture and beautifully reticulated with dark brown. It measures three and a-half inches in expanse of wing. This species has been reported as causing considerable damage at times on the south side of Lake Erie, from whence probably it has come to us.

J. ALSTON MOFFAT, London, Ont.

The Editor regrets to state that two of his letters to the printers of this Magazine have recently gone astray in the mails. They contained a paper by Mr. McGillivray on "New Hampshire Tenthredinidae," the second part of Mr. C. F. Baker's "Studies in Siphonaptera," and a review by Prof. Webster of the last volume of Dr. McCook's "Spiders and their Spinning Work." These articles were intended to have been published in the current number.

Mailed February 4th.