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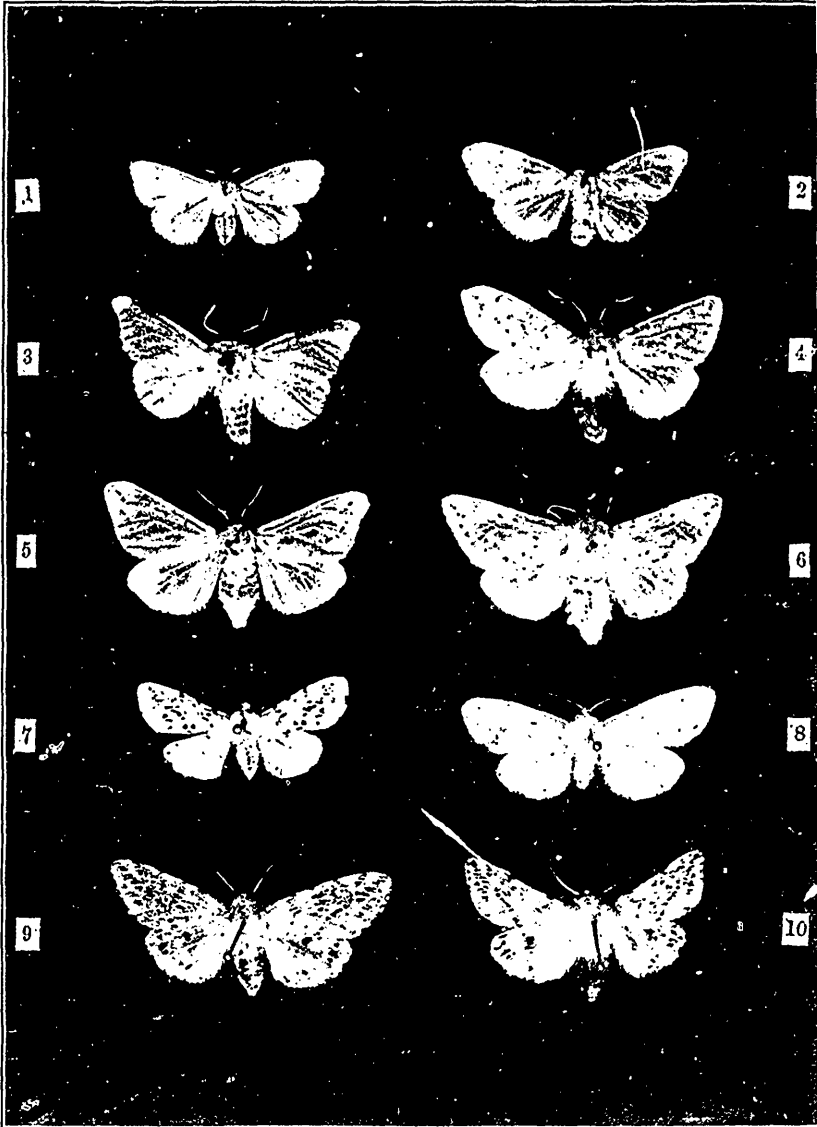
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# The Canadian Entomologist.

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## THE "ENTOMOLOGICAL MUDDLE" — A REJOINDER.

BY THE REV. THOMAS W. FYLES, SOUTH QUEBEC.

I thought I had "said my say" on the *Cunea-Congrua* question, but Mr. Lyman's attack upon me demands a reply.

Mr. Lyman has made a military allusion in rather questionable taste. I would remind him that the reason the Boers have *stuck to their guns* is that, until now (May, 1900), their opponents have not been able to capture their guns, but have, on the other hand, furnished the Boers with new artillery and fresh stores of ammunition.

Mr. Lyman has supplied me with new proofs that *cunea*, Drury, and *punctatissima*, S. & A., are not identical—proofs that I think will be convincing to every candid reader. I shall set them forth in due course.

I will arrange the remarks I have now to offer as I did those which I made in the March number of this year's ENTOMOLOGIST.

I.—Concerning the identity of *congrua*, Walker, with *antigone*, Strecker.

Mr. Lyman thinks it probable that I am right in maintaining that *antigone*, Strecker, is only a synonym of *congrua*, Walker; but he thinks also that two clauses in my summary of evidence brought before us—viz.:

(c) Dr. Hulst and others have bred it.

(d) *S. antigone* has been found to be identical with it—"too positive to be scientific." Why? Dr. Hulst described the larvæ under the name of *congrua*, and the larvæ I raised were unquestionably of the same kind as his, and these produced moths which tally in every particular with the description given by Grote and Robinson (see description on page 123 of the May number), several of them having the S-like mark

which Mr. Lyman has never seen; and this description was made by Grote from two of Walker's types which he saw and handled, and which bore Walker's own identification marks; and Messrs. Dyar and Beutenmuller have declared the moths, raised as above mentioned, to be identical with *S. antigone*, Strecker; and Walker's name of the species has the priority. What more would Mr. Lyman have? Does he think we should be any better off if he himself had seen Walker's types and described them?

#### II.—Concerning Riley's theory.

I may truly say that I was an entomologist before Mr. Lyman was born, and it seems to me "only the other day" that Prof. Riley propounded his theory that "many names," of which he instanced four, viz., *cunea*, Drury; *textor*, Harris; *punctata*, Fitch, and *punctatissima*, S. & A., were merely synonyms—the first of the four having the priority. Up to that time no one had thought of calling the moth from our Northern Fall Web-worm anything but *textor*. Walsh and Riley so designated it in Vols. I. and II. of the "*American Entomologist*"; so did Packard in his "Guide" — my copy is one of the 7th edition, published in 1883; and Saunders, in his "Insects Injurious to Fruits," published in the same year.

Riley had done good work as an entomologist, and men were disposed to accept his teaching without question. Dr. Smith adopted it, and "Smith's List" has been the guide of our younger entomologists. Hence the use of *cunea* to designate the moths from Fall Web-worms.

But I maintain that when I spoke of *Bombyx cunea*, Drury, no one had a right to assume that I meant something else—that I meant (to adopt Dr. Dyar's formula) *cunea*, Riley (nec Drury).

If no one till now has questioned the identity of *cunea*, Drury, and *punctatissima*, S. & A., it has been because no one has had the reason for questioning it that now exists, viz., the discovery of an insect that more closely answers to Drury's figure and description than *punctatissima* does.

Whether *Hyphantria punctatissima*, S. & A., and *H. textor*, Harris, are identical or not can be easily proved by our Southern entomologists. They have only to breed carefully from eggs of each sort to determine the matter. It will be "too ridiculous" if it should prove that in this respect also we have been misled by Riley—that after all there is but one brood of *textor* in the season, and but one brood of *punctatissima*, and

that these insects are specifically distinct one from the other. In the meantime it *is* surprising that Mr. Lyman, above everybody else, should countenance a question whether these insects are so distinct, for such a question implies a suspicion that *that eminent entomologist, Dr. Riley, confused two or more species of moths.*

It requires considerable courage and self-confidence for a man to assume the rôle of general critic and censor, and a critic should be careful not to misrepresent those whom he attacks. Where is the relevancy, or the correctness, of Mr. Lyman's statement that I overlooked the fact of the priority of the name *punctatissima* over that of *textor*, seeing that, on page 369 in the December number of the CANADIAN ENTOMOLOGIST, I arranged the Hyphantrians thus :

HYPHANTRIA, Harris.

Punctatissima, S. & A.

*textor*, Harris ?

Again, on page 128 he says, speaking of myself, "He is wrong in implying that Dr. Ottolengui doubted the identity of *cunea*, Drury, and *punctatissima*, A. & S." I implied nothing of the sort.

He continues, "What Dr. Ottolengui expressed a doubt about was whether *textor*, Harris, and *punctatissima*, A. & S., were the same." Is not that what I said? My words were, "By these forms I understand him to mean *punctatissima* and *textor*." Mr. Lyman failed to perceive that I was showing the weakness of Riley's theory in *two* particulars, testing the chain at two points.

It is usually understood that Riley was his own artist (and a very good artist too!). Whether he drew the figures 86 and 87, of which so much has been said, does not appear; but in the figures there are no lines of dimensions, in the letterpress there is no word as to enlargement or inaccuracy. We must therefore conclude that the figures are what Riley intended them to be. Yet Mr. Lyman speaks of the dimensions of Fig. 86 as "absurd," and alludes to inaccuracies in the wing-series. *In fact, I have to thank him for fully sustaining my second contention*, for if, as he says, Riley's series of wing-figures were merely intended to show the *range* of variations of a variable species, how can they be regarded as "a proof amounting to a demonstration" that *cunea*, Drury; *congrua*, Walker; *textor*, Harris; *punctatissima*, S. & A., etc., etc., are one and the same species?

No one supposed, and it was absurd to suppose, that anyone was in danger of supposing that Riley figured only moths coming from a black ground-feeding larva.

III.—Concerning Drury's *cunea* and the Quebec *Spilosoma*.

The discussion of the *Cunea* question was not uncalled for, and has not been unprofitable. It is well that so much information on the subject has been brought together. In this respect Mr. Lyman has done good service. We can now see clearly the slight basis on which the theory of the identity of *cunea* and *punctatissima* has been built, viz., two uncertain references, made long ago, by two old-world entomologists, and the fact that *punctatissima* is a variable species. The references are: "Whether this be the *cunea* of Mr. Drury or not" (Sir James Smith), and "There seems little reason for doubting that this is identical with the *Phaëna punctatissima* of Abbott and Smith" (Westwood). We have no reason to think that either of the writers had seen Drury's types. Upon so trivial a foundation the theory has been built!

Mr. Lyman thinks Smith and Abbot's figure of *punctatissima* admirable, and that it shows perfect bilateral symmetry. Let us see! In the left secondary of the figure there is a black spot near the tip, and behind it, running towards the body, are two others; on the right secondary the three spots run in a line along the outer margin; and this is what Mr. Lyman calls "perfect bilateral symmetry"! He objects to my expression "fancy sketch." Is it then a *reality* that, in the favoured South, imagoes and larvæ of *punctatissima* may be seen on mulberry bushes at one time?

I had overlooked Drury's description of *cunea*. I am glad to read it—it strengthens my case. Mr. Lyman gives it in full on page 122. I will quote the English of the description to save the reader the trouble of reference, and that there may be no mistake as to terms. I give the Old Country meanings of ash-coloured and tip:

"Ash-colored, a., between brown and gray, like the bark of ash".....*Reid's Dictionary*.

"Tip, the part where the costa meets the hind margin".....*Stainton's Manual*, Vol I., x.

The description is as follows:

"*Upper side*.—Antennæ pectinated and black. There is no appearance of any tongue. Head white. Back and abdomen ash colour.

Anterior wings white, with a great number of spots, differently shaped, of a sooty black colour. On the external margin are five spots, those nearest the tips being shaped like triangles. Posterior wings white, with a sooty spot on each near the external edge, and a very faint small mark near the exterior angle. *Under side*.—Legs black. Breast and abdomen ash colour. The wings marked as on the upper side."

We may well ask, Would anyone identify *H. punctatissima* by this description? Riley (as Mr. Lyman has said) has given us the "range" of variation of this variable species. He has given us ten representations (there are ten—Mr. Lyman did not count correctly). Possibly a hundred more might have been introduced, but Riley gives the range. *The extremes are there*. Take *i* and *j* at one extreme of the series, those that have the triangles upon which so much stress has been laid. Do they answer to the description? No; *the triangles are at the wrong end!*

Reference has been made to the name *cunea*. The name *cunea* carries its own meaning. *Cunea* = *cuneia* (Gr.), of, or pertaining to, a dog, and this, with the generic term *Spilosoma* (spotted body), makes up a very fitting appellation for the species.

How *cunea* can properly be derived from *cuneus* (L.), a wedge, has not been shown us. As Mr. Lyman says, I have *chosen* to call the *Bombyx cunea* of Drury a *Spilosoma*. I have done so because Westwood and Walker *chose* to call it so; and because we have not the slightest particle of evidence that the insect was an Hyphantrian.

In the January number of the CANADIAN ENTOMOLOGIST for this year, page 16, appear these words from Dr. Dyar: "There can be no manner of doubt of Drury's figure. It represents the spotted form of Hyphantria. The description of the abdomen at the last resort is conclusive." I passed this enigmatical statement by as "one of those things that no fellah can understand." But Mr. Lyman has acted as interpreter. He says: "In the January number of the present year Dr. Dyar very briefly points out Dr. Fyles's error, calling attention to the fact that of *cunea* the abdomen is described as 'concolori nigro-maculato,' the English description saying back and abdomen ash-colour."

Let us see how things stand:

1. a. Walker's *cunea* had the abdomen yellowish, white on the hind borders of the segments and towards the tip.....(B. M. Cat. III., p. 669, n. 7).

- b. Walker's cuncea "was doubtless punctatissima" . . . . . (Lyman, p. 121, May number).
2. a. Drury's cuncea has the back and abdomen ash-colour. . . . . (Drury's description).
- b. "There is no doubt of the identity of cuncea and punctatissima" . . . . . (Riley and Smith).
3. a. Drury's figure shows a white abdomen. (Lyman, p. 128, May number).
- b. "There can be no manner of doubt of Drury's figure. It represents the spotted form of *Hyphantria*". (Dyar, p. 16, January number)

No difficulty whatever is made of the logical conclusions that the abdomen of *punctatissima* is *yellowish, white at the edges and towards the tip*; that it is *ash-colour*; and furthermore, that it is *white*. But when I described the Quebec insect as having an abdomen *yellow* ("yellowish"), *white at the edges and towards the tip*, why then "the description of the abdomen at the last resort was conclusive" (Dyar). Conclusive of what? That Dr. Fyles was in "error" (Lyman). The description should be back and abdomen ash-colour.

However, the difficulty as to the abdomen in the case of *cuncea* can be easily cleared up by a comparison with *congrua*.

Last year I sent a specimen of *congrua* to Washington. When it left me the insect had an abdomen pure white. When it came back to me, the abdomen was ash-coloured. The long fluffy feathers had been shaken off, and only a slight down remained. Other moths of the batch to which this belonged are losing their white clothing. One has the white in patches only, both on the back and the abdomen.

So also as regards my specimens of *S. cuncea*, Drury. The male has been to London, Ont., and back (1,200 miles), and has now an ash-coloured abdomen. The female that I mentioned in my first paper still answers to Walker's description. A second female taken by Edgar Walters at Bourg Louis has been less disturbed, and has more white and less yellow on the abdomen. All these specimens were somewhat worn when they were taken, and I think it very probable that originally they had white abdomens, as the specimens of *congrua* had. The abdominal scales and feathers are alike in both insects.

Lest the readers of the CANADIAN ENTOMOLOGIST should be misled by Mr. Lyman's words, "I can see no resemblance beyond the most superficial between his specimen and Drury's figure," I beg to state that Mr. Lyman has never had my specimen in his possession.



The resemblance of the Quebec *Spilosoma* to Drury's *is* superficial—  
 "most superficial."

The size is the same.

The contour is the same.

The coloration is the same.

The arrangement of the spots is the same.

The triangle is in the right place.

The variation in the abdomen is accounted for, and there is no straining to fit an extreme variety, or a spotless female, into the case.

What the resemblance *internally* may be, I cannot say. I must leave Mr. Lyman to find out. And with this parting shot, I retire from the field—*my guns uncaptured*; my forces unbroken.

#### DESCRIPTION OF PLATE 4.

The plate is made from an admirable photograph taken by Prof. H. Walters, M. A., Morrin College. The figures of the moths are of the natural size.

Figs. 1 and 2 represent *Hyphantria textor*, Harris. The insects were raised at Levis by myself.

Figs. 3, 4, 5 and 6 show specimens of *Spilosoma congrua*, Walker. One male is all but immaculate—it has a tiny dot at the angle of the second fork of the median nerve. The abdomen of the insect represented was originally pure white; it is now yellow, white at the edges of the segments and towards the tip. The other male represented is more spotted, and has now an ash-coloured abdomen with longitudinal rows of spots. One female answers to Grote and Robinson's description. The other is more spotted.

Figs. 7 and 8 represent a pair of *Hyphantria punctatissima*, S. and A. The moths were sent to me by Mr. H. H. Newcomb, of Boston, and were raised by Miss Emily L. Morton, of New Windsor, N. Y. Miss Morton says of these insects: "I have raised a great many of them, and there is very little variation; the female is invariably immaculate."

In Figs. 9 and 10 a pair of the *Spilosomas* we have had under consideration are seen. The male was taken at Bergerville, Quebec, by Miss Bickell; the female was taken at Bourg Louis, Quebec, by Edgar Walters. In the Plate the black pectinations of the antennæ of the male do not show against the dark background. T. W. F.

[This controversy is now closed, so far as the pages of this magazine are concerned.—Ed. C. E.]

## SOME NEW JASSIDÆ FROM THE SOUTHWEST.

BY E. D. BALL, FORT COLLINS, COLO.

*Phlepsius luscivius*, n. sp.—Resembling *altus*, slightly larger and lighter coloured; margin of the vertex black either side of a light tip. Length 6 mm.; width 2 mm.

Head as wide as the pronotum, vertex depressed at the base, anteriorly convex and rounding to the front, the apex slightly angled, hardly half longer than at eye, two and one-half times wider than long, more than half as long as the pronotum, front broad, convex in both diameters, roundly narrowing below; clypeus with the margins straight; elytra rather stout and straight, flaring behind, the claval nervures parallel, not united.

Colour: soiled yellowish white closely inscribed with brownish fuscous. Vertex with an irregular black cloud either side of the white apex, back of this a white crescent, behind which the surface is irrorate with pale fulvous brown, a semi-pupillate spot either side at the base; face heavily irrorate with fuscous, the black clouds of the vertex uniting below the apex, a few light ones on the front and a light band across the clypeus and loræ; pronotum closely irrorate with fuscous; scutellum washed with dirty fulvous, a pair of black points on the margin on either side; elytra milk white, finely inscribed with fuscous, which is not in irregular lines except on costal and apical margins.

Genitalia: ultimate ventral segment of the female very long, the posterior margin truncate, the median third with a pair of very slight, evenly-rounded lobes, between which there is a distinct notch; male valve very broad, obtusely triangular, plates three times the length of the valve, broad at base, roundly narrowing half their length, then produced as bluntly pointed divergent lobes.

Described from eight females and four males taken at Holly, Pueblo, and Fort Collins, Colo., and Kimball, Neb. Part of the Fort Collins specimens came from back in the mountain gulches.

*Phlepsius turpiculus*, n. sp.—Resembling *cinereus*, but more heavily irrorate. Pale straw yellow, irrorate with fulvous brown. Length, ♂ 7 mm., ♀ 6 mm.; width, ♀ 2 mm., ♂ 1.5 mm.

Head as wide as the pronotum, vertex but little longer on middle than against eye, half as long as the pronotum, surface convex, passage to the front roundly angulate; front broad above, feebly convex, almost angled at the antennæ; clypeus narrow just before the base; elytra long,

narrowing apically; veins on clavus sometimes tied before the middle, but not converging.

Colour: a dirty creamy yellow, washed and irrorate with brownish fulvous, vertex and face washed and very finely irrorate with dirty fulvous, omitting a light line marking the boundary between them, and a crescent behind the apex of the vertex; clytra rather coarsely and uniformly irrorate, lower side and legs washed with fulvous, scarcely marked.

Genitalia: ultimate ventral segment of the female twice the length of the penultimate, slightly notched in the middle of the posterior margin, either side of which it is slightly sinuated to the rectangular lateral angles; male valve triangular, the margins indented midway to the apex, plates gradually narrowing to half their basal width, then extending as acutely tipped, attingent, finger-like processes four times the length of the valve.

Described from numerous specimens collected at Holly and Fort Collins, Colo., and at Stratton, Neb. This species and *lascivius* have female genitalia much alike in pattern, while the male plates are quite different; those of *turpiculus* resembling *irroratus*, while *lascivius* resembles *nebulosus*.

*Phlepsius graphicus*, n. sp.—Resembling *superbus*, slightly longer and heavier built, the lobate commissural line distinct. Length 7 mm.; width 3 mm.

Head narrower than the pronotum, vertex sloping, the margin distinct but not compressed; width at base twice the middle length, very slightly longer on middle than at eye, more than half the length of the pronotum; front broad above, rounding to the spatulate clypeus below; clytra long, flaring apically, the claval nervures tied by a cross nervure before the middle.

Colour: ground colour soiled straw yellow, vertex and pronotum irrorate with testaceous, a round spot on either side the vertex at the base, and pupillate spots on the pronotum behind these, a pair of round spots on the scutellum, the apical part light; clytra pale, the nervures and irrorations brownish fuscous, the scutellar margin and a lobate commissural line light, irrorations gathered into fuscous spots along the costa; face heavily irrorate with brownish fuscous; legs light, marked and lined with fuscous.

Genitalia: ultimate ventral segment of the female three times as long

as the penultimate, lateral margins sloping, lateral angles slightly produced and rounding, posterior margin with two rounding teeth on each side of the deep median incision, the outer pair extending obliquely inwards, twice as long as the inner pair; male valve less than half as long as the ultimate segment, semicircular, plates twice the width of the valve, almost semicircular, slightly elongate, the margin fringed with fine white hairs, four strong spines inside the margin on either side.

Described from fourteen specimens from Wray and Fort Collins, Colo., and Kimball, Neb.

*Phlepsius cumulatus*, n. sp.—Intermediate in size and colour between *graphicus* and *superbus*, lobate commissural line faint. Length 6.5 mm.; width nearly 3 mm.

Head narrower than the pronotum, vertex nearly parallel margined, slightly sloping, passage to the front distinct but not angled, front broader than in *superbus* and not as convex; clytra broad and slightly compressed behind, the irrorations finer and weaker than in *graphicus*.

Colour: yellowish fulvous irrorate with a rich testaceous brown shading to fuscous where the irrorations are thickened up; the anterior margin of vertex with a light line interrupted in the middle by a red point, two fuscous points on the disc of the scutellum, the commissural line faintly lobate; below tawny yellow, the front heavily marked with brownish fuscous, the rest of face and legs maculate.

Genitalia: the ultimate ventral segment of the female two and one-half times longer than the penultimate, cleft in the middle nearly to the base by a triangular notch, either side of which there is another slight notch; from the outer lobe thus formed it rounds off to the base without lateral angles; male valve triangular, plates twice the length of the valve, the sides roundly angulate, the tips slightly angularly divergent, a dark spot at the inner angle at the base, the margin fringed with fine hairs, the submargin with a few white spines.

Described from numerous specimens taken at Fort Collins, Virginia Dale, Pinewood, and Livermore, Colo., all within the mountains, from the first foothills up to 7,000 feet.

Variety *arctostaphylæ*, n. var.—The preceding species was swept as larvæ and adults from Snowberry (*Symphoricarpos* sp.), where it was found in abundance; a little higher up on the mountains a few specimens, along with their larvæ, of a smaller and darker species were taken from

Bearberry (*Arctostaphylos uva-ursi*); superficially they resemble dark specimens of *altus*, but structurally they could not be separated from *cumulatus* with the material in hand.

They are shorter and heavier than *cumulatus*, with short broad elytra which just cover the abdomen. In colour they are a much darker testaceous, shading to fuscous.

*Phlepsius albidus*, n. sp.—Small, pale greenish white, resembling *Eutettix insana* until closely examined, slightly more robust. Length 4.5 mm.; width 1.25 mm.

Head as wide as the pronotum, vertex flat, slightly sloping, slightly but distinctly angled before, a little over half as long as its basal width, two-thirds the length of the pronotum; front convex in both diameters, scarcely narrowing until just before the apex; elytra moderately long, compressed behind, the claval nervures straight.

Colour: vertex face and scutellum pale, creamy yellow; pronotum with a greenish cast; elytra white, with fine, almost microscopic, greenish fuscous irrorations, a dark point at apex of clavus and a pair at the outer angles of the loræ; beneath greenish white.

Genitalia: ultimate ventral segment of the female about twice longer than the penultimate, posterior margin slightly rounding, two small rounding lobes faintly outlined at the centre.

Described from four females taken at Pueblo, Colo. In the white colour and the greenish character of the irrorations this species is very distinct from any before described.

*Eutettix insana*, n. sp.—Form of *modesta* nearly, but smaller, pale, slightly greenish, white, peppered all over, thickest on the elytra, with small round black specks. Length, ♀ 4 mm., ♂ 3.25 mm., width 1 mm.

Vertex nearly flat, a third longer in the middle than at the eye; three-fourths as long as the pronotum, two-thirds as long as its basal width, rounding to the convex front, which is slightly expanded below the antennal pits, clypeus convex-margined above; elytra moderately long, flaring as in *modesta*, venation rather weak, the claval nervures either coalescing or tied across in the middle.

Colour: vertex and face pale greenish orange, vertex with a few small spots; pronotum olive with scattered dark dots; elytra white, sprinkled all over with small round dots which appear to be on the surface, all below white, somewhat dotted on legs, connexivum and pygofers.

Genitalia: ultimate ventral segment of the female three times the length of the penultimate, angularly excavated from the acute lateral angles half way to the base in the middle, from which arises a strap-like tooth, nearly equalling the lateral angles, its apex rounded; male valve not as long as the ultimate segment, very obtusely triangular, plates broad at base, triangularly narrowing to one-third their original width, then extending as acutely tapering up-turned points.

Described from numerous specimens taken at Pueblo, Colo.

*Eutettix stricta*, n. sp.—Form of *insana*, but narrower, pale yellow, with a golden reflection, especially in the males. Length, ♀ 4 mm., ♂ 3.5 mm.

Vertex nearly parallel margined, almost twice wider than long, as wide as the pronotum is long, the surface slightly depressed, bluntly rounding to the front, face as in *insana*; elytra rather long, narrowing behind, veins on clavus not united.

Colour: vertex orange or greenish yellow, sometimes a pair of spots behind the apex, face lemon yellow, front with about seven short brown arcs, the upper pair very oblique; pronotum olive or yellowish; scutellum orange, a pair of brown spots on the disc; elytra greenish or golden subhyaline; below lemon yellow, rostrum orange.

Genitalia: ultimate ventral segment of the female two and one-half times the length of the penultimate, the lateral margins narrowing posteriorly, posterior margin truncate, with a broad just noticeable median projection; ovipositor rather long, orange; pygofer narrow, greenish; male valve very short and broad, about half the length of the ultimate segment, plates very broad at base, long triangular, with the acute apices produced and coloured bright orange.

Described from numerous examples collected in Ariz. by Dr. Kunze.

*Deltocephalus grammicus*, n. sp.—Form of *albidus* nearly, but longer and narrower. Lemon yellow, with six brown stripes on pronotum and elytra. Length 5.25 mm.; width 1.25 mm.

Vertex flat, roundly right angled, a fifth longer than its basal width, over half longer on its middle than against the eye, a fifth longer than the pronotum; face making an acute angle with the vertex, front very narrow, resembling a *Platymetopus*; elytra long, flaring, venation similar to that of *imputans*, obscured by the colour lines, veins on clavus coalescing for one-third their length.

Colour : vertex white, washed with yellow, a crescent either side the point, a dash on the lateral margin and interrupted before the middle, brownish fuscous ; face pale yellow, a narrow black line just under the margin of the vertex ; pronotum yellow, with six dark brown stripes, the inner and broader pair arising behind the middle of the vertex, continuing across the scutellum ; elytra yellow, with five light brown stripes on each side, interrupted by the light nervures, the reflexed veinlets broadly white, lined anteriorly with fuscous ; below pale yellow.

Genitalia : ultimate ventral segment of the female half longer than the penultimate, the posterior margin angularly excavated one-third its depth, margins of the excavation near the centre slightly toothed and marked with black.

Described from three females ; two taken from the Platte valley at Sneyder and Julesburg, Colo., and one from Kimball, Neb. This is a very distinct species, and though unquestionably a member of the reflex-veined Deltocephalids, still in face characters it recalls a *Platymetopius*, and in colour and ornamentation it might easily be confused with *Athysanus colon* or *texasus*.

#### A NEW SPECIES OF KERMES.

BY E. E. BOGUE, M. S., STILLWATER, OKLAHOMA.

*Kermes trinotatus*, n. sp.—Female scale variable in size, averaging about  $5\frac{1}{2}$  mm. long, 6 mm. wide, and  $4\frac{1}{2}$  mm. high ; rounded above, somewhat flattened behind, convex beneath, front turned down into a more or less beak-like prominence ; median groove obscure or broad and shallow ; colour varies from bright argillaceous to dull gray ; surface uniform, more or less conspicuously speckled with black ; segmentation obscurely or plainly marked with dark spots. When the median groove is present it is crossed with more or less dark lines showing segmentation. There is a rounded dark spot on each side of the front, and an elongated dark blotch extending for a short distance above and below the anal opening : hence the specific appellation.

Larvæ  $416 \mu$  long by half as broad ; caudal setæ  $160 \mu$  long ; antennæ  $100 \mu$  long, 6 jointed, formula (1, 2) (3, 4) (5) (6), 6 longest, 3 and 4 shortest, a few hairs towards tip ; marginal spines conspicuous around the head, a prominent one each side of each caudal seta ; claws of feet simple, slightly curved inward, accompanied by a few hairs. Abundant

in certain localities near Stillwater, Oklahoma, on *Quercus nigra*, and occurs in other regions on various species of *Quercus*. The species is very variable in colour, size and markings, and it is possible that more than one species is included in the description. Further study of larval characters would be necessary to separate them. It seems to be frequent across the continent. I have it from Dr. J. A. Lintner, Albany, N. Y.; Dr. John B. Smith, New Brunswick, N. J.; Mr. W. M. Scott, Atlanta, Ga., and a large number of specimens from Stillwater, Okla. Dr. L. O. Howard wrote me from Washington, D. C., under date of Jan. 5, 1899, that the same species bears their (U. S. Nat. Mus.) numbers 722, 2404, 3706 and 7387, and bears a manuscript name. No. 1097 in collection Okla. Expt. Sta.

The species is one or more of the forms that have passed under the name of *Kermes galliformis*, Riley. Mr. Theo. Pergande kindly compared specimens with type specimens of *Kermes galliformis*, Riley, and has decided them to be very distinct. Dr. Riley's description is not available to most entomologists of to-day, so I should like to record here what he says of it: "*Kermes, galliformis*, n. sp. A new species of oak coccid mistaken for a gall. An esteemed correspondent from Ohio (Dr. John Waider) sends us what he supposed to be some kind of a gall which he found at Iron Mountain, Mo., on twigs of *Quercus palustris*. They are pretty, large, globular, or almost globular, objects fastened to the twigs either singly or in clusters as we are accustomed to see certain Cynipid galls. Their shining yellow surface is handsomely variegated with light brown patches. The particular species sent by our correspondent is undescribed, and may be characterized as follows: Mature female scale, average length 5 mm. Subspherical, usually somewhat broader than long, and often with a broad shallow constriction medio-dorsally. Attached by a broad, dark brown cut or excavation which is covered by a beak anteriorly and notched anally, the brown colour extending to a point above the notch. Polished and smooth. Ground colour pale yellowish, appearing under lens minutely and evenly specked with brown, more or less suffused or mottled with gray or brown, the constriction when present generally dark. A series of about seven irregular rows of black punctations running across the scale, often connected by an irregular black line, and this again relieved by white or pale yellow. The uppermost row distinct and constant."

The form found at Stillwater, O. T., is considered typical of *K. trinotatus*.



## NOTES ON IDIOCERUS (JASSIDÆ).

BY C. F. BAKER, ST. LOUIS, MO.

There has just come into my hands (April, 1900) the paper on this genus by Osborn and Ball in the Proc. Davenport Acad. Sci., Dec., 1898. As some of my conclusions regarding the species of this genus do not coincide with those of the above authors, it may be of interest to present another view.

*Verticis*, *ramentosus* and *striola* are in the same condition *Deltocephalus Melsheimeri* used to be in: different authors might readily find many different forms that possibly fit the descriptions. Perhaps the types *ramentosus* and *striola* are in existence. I think more harm than good will come of attempts to identify these three forms without further data than the mere descriptions.

Prof. Osborn does not say that he has ever examined the type of *Duzei*. From his description it is apparent that he has not. VanDuzee described the species in MS., and returned the specimen to Provancher, telling him it was new. Provancher promptly published it. This description by VanDuzee has been in my hands for some time. He should have published it. I quote it herewith: "Form and size of *lachrymalis* nearly, the elytra shorter and the sides of the pronotum more rounded off than in that species. Colour brownish fulvous above, pale and more yellowish beneath. Tergum, the narrow edge and hind margin excepted, black; tibiæ and tarsi tinged with fulvous. Elytra hyaline, faintly tinged with smoky; nervures concolorous, obscure, the costal yellowish. Wings faintly smoky-hyaline, iridescent, nervures brown. Transverse impressed line of the scutellum black, angled. Form of the facial pieces very similar to those of *lachrymalis*. Last ventral segment of female feebly trilobate, the median lobe the largest, lateral angles retreating. Pygofers large and stout, much exceeded by the brownish oviduct. Eyes black. Length 6.5 mm." To this description Mr. VanDuzee appended the following note: "The above description was taken from the very example M. Provancher founded his species on. I returned the specimen to him, marked n. sp., and he described it."

To be more exact concerning the oviduct, it is exerted about a third the length of the pygofers. If a careful comparison of this description with the description and figures of *perplexus* be made, it will be seen at once that they cannot possibly refer to the same insect. Prof.

Osborn had not seen the type of *Duzei* nor that of *perplexus*. He knew I had the type of *perplexus*, and I have offered to loan him anything I had. I have specimens of *Duzei* from Colo., however, that are quite typical as to length of oviduct, brown veins in wings and coloration. I did not refer *perplexus* to a varietal form of *pallidus* without carefully sifting all the evidence, but that it should be *Duzei* is an impossibility. The *Duzei* of Osborn becomes a synonym of *perplexus*, probably.

The types of *distinctus* and *mimicus* are in my collection, where they have been since the day names were put on them. So Prof. Osborn's remarks on this point are not exact. My collection is now in the National Museum, where anyone may study these types at their leisure.

Since *productus* was described, I have collected many perfectly-formed, healthy specimens of it, both male and female, and I can only say that they are absolutely uniform in the "remarkable characters" indicated in the original description, and that these characters are most positively *not* "due to the vertex having been pushed forward and crushed along a middle line. If I remember correctly, the type is not a "crushed specimen." Prof. Osborn has not seen the type, though he could easily have done so. I fail to see how crushing could produce the peculiar inflation found in the head of this species.

### A NEW SESIA FROM ALASKA.

BY WILLIAM BEUTENMULLER, NEW YORK.

*Male*.—Head, palpi and thorax entirely black. Abdomen black with a very narrow white ring at the posterior edge of the second and fourth segments. Anal tuft black. Legs black, with the hind tarsi dirty white. Fore wings transparent, with black borders and a broad black transverse mark. Hind wings transparent, with a narrow black margin. Under side of fore wings washed with golden yellow, basally. Hind wings same as above. Expanse, 20 mm.

*Habitat*.—Kodiak, Alaska, July 20th, 1899.

*Type*.—One male, No. 5175, Coll. U. S. Nat. Mus.; collected by Mr. Trevor Kincaid; somewhat allied to *Sesia rutilans*, but has white bands on the abdomen instead of yellow ones as in that species. The palpi are wholly black, while in *rutilans* they are golden yellow and black. The female is not known.

## TYPES OF NOCTUID GENERA.

BY A. RADCLIFFE GROTE, A. M., HILDESHEIM, GERMANY.

I refer the student to papers of mine on this subject in *The Entomologist's Record*, Vol. VI., pp. 27 and 77. The principal types given by me for genera found in North America are as follows :

- Agrotis*, Hübn., 1806, type : *A. segetum*.  
*Graphiphora*, Hübn., 1806, type : *G. gothica*.  
*Gortyna*, Ochs., 1816, type : *G. micacea*.  
*Ochria*, Hübn., 1816, type : *O. flavago* (ochracea).  
*Hylena*, Hübn., 1806, type : *X. lithoxylea*.  
*Lithophane*, Hübn., 1816, type : *L. socia* (petrificata).  
*Hadena*, Schrank, 1802, type : *H. cucubali*.  
*Helioscota*, Grote, 1895, type : *H. miselloides*.  
*Acontia*, Ochs., 1816, type : *A. malvæ*.  
*Eustrotia*, Hübn., 1816, type : *E. unca*.  
*Copimamestra*, Grote, 1883, type : *C. brassicæ*.  
*Oligia*, Hübn., 1816, type : *O. strigilis*.

I now give the literary evidence for the types of :

- Luperina*, Boisd., 1829, type : *L. testacea*.  
*Ledereria*, Grote, 1874, type : *L. virens*.  
*Apamea*, Ochs., 1816, type : *A. didyma*.  
*Hydræcia*, Guen., 1841, type : *H. nictitans*, Linn., sp.

*Ledereria*.

1874. Grote, Bull. Buff. Soc. Nat. Sci., 54. The name is proposed generally for *Luperina*, l.ed., nec Boisd. The type *virens* is afterwards given in *Entomologist's Record*, VIII., 183 (1896).

*Hydræcia*.

1841. Guenéé, Noct. Eur. Index Meth., Ann. Soc. Ent., Fr., Tom. X, 237 : *cupræa*, *leucostigma*, *micacea*, *nictitans*. No description ; no type given.

These are the original species of *Hydræcia* ; *cupræa* (*cupræa*) is an *Agrotis* ; *leucostigma* was taken afterwards in 1857 by Lederer as type of *Helotrophæ* ; *micacea* became in 1816 type of *Gortyna*, Ochs. ; *nictitans* appears to be hardly generically separable from *micacea*. *Leucostigma* would be therefore type of *Hydræcia*, and *Helotrophæ* falls ; the only alternative is to make *nictitans* type, and elevate this into a genus, which course I adopted in 1874.

1852. Guenée, Species Général, V., 125 : nictitans, luceus, lorea, cuprea, vindelicia, micacca, immanis, stramentosa.

Guenée here adds American species, of which one has hairy eyes (*lorea*); so, following H.-S., I referred it in 1874 to *Mamestra*. *Leucostigma* is placed back in *Apamea* (l. c. 210); the mixture which is *Hydracia* has lost a *Helotropha* and gained a *Mamestra*, and the scientific value of the term, which was originally = O, is unchanged. *Micacca* is made type, but this species is preoccupied, through Hübner in the Verzeichniss, for *Gortyna*.

1874. Grote, List of the Noctuidæ of North America, Bull. Buf. Soc. Nat. Sci., April, 1874, 18 : nictitans (Linn.), sera, inquesita, †salicarum (then unknown to me). Type indicated as *nictitans*, and genus correctly dated 1841. The question of whether this genus is valid must depend upon the classifier. It stands or falls with its type. As designated by Guenée in 1852, it would have the same type with *Gortyna*, and, of course, it would fall. To save it by the sacrifice of *Helotropha*, Led., does not seem to me advisable, and, after my action in 1874, perhaps inadmissible.

*Apamea.*

1816. Ochs., Schm. Eur., IV., 75 : nictitans (oculea), fibrosa (lecostigma), argillacea, unanimis, *didyma*, ophiogramma, bicoloraria, captiuncula, suffruncula, latruncula, strigilis, connexa, testacea, basilinea, infesta, cespitis, graminis, leucographa, bella, umbrosa, cuprea. This mixture, for which no description or type is given, belongs to six or seven Ledererian genera.
1829. Boisd., Eur. Lep. Index Method., 76 : nictitans (Linn.), occlusa, leucostigma (fibrosa), didyma (v. nictitans, Esp.), v. ophiogramma, furuncula, captiuncula, suffruncula, latruncula, strigilis, connexa, ? leucographa.
1840. Boisd., Gen. et Index Meth., 116 : strigilis, v. suffruncula, furuncula, captiuncula, Duponchelii, v. microglossa, erratricula, signalis. This further restriction would make the genus = *Oligia*, Hübn., type *strigilis*, but this interferes.
1837. Guen., Ann. Soc. Ent., Fr., I. Ser., Tom. 6, 333 : nictitans (Linn.), latruncula, captiuncula, furuncula, suffruncula, ophiogramma, didyma, unanimis, gemina, infesta, testacea, Dumerillii.

1841. Guen., Noct. Eur. Index Meth. Ann. Soc. Ent., Fr., I. Ser., Tom. 10: ophiogramma, didyma, unanimis, gemina. Except the first, which goes to *Oligia*, Lederer's section C, this restriction gives us species belonging to Lederer's section B of *Hadena*, Led., nec Schrank. Hübn. does not use *Apamea*. Further citations have no bearing on the subject of the type, which may be accordingly taken as *didyma*.

The species heretofore classed under *Hadena*, Led., fall to *Xylena* (= *Xylophasia*), *Helioscota*, *Apamea* and *Oligia*. The European type *Ilarus ochroleuca* is not recognized as American.

*Luperina.*

1829. Boisd., Europ. Lep. Index Meth., 77: Dumerilii, argillacea, testacea, contribulis, cespitis. One of the above must be type. The use of this term for *virens*, etc, by Lederer is therefore erroneous. For *Luperina*, Led., nec Boisd., type *virens*, the term *Ledereria*, Grote, 1874, should be used. *Testacea* may be taken as type, taking with it *Dumerilii*. *Argillacea* is a var. of *Hadena* (*Dianthæcia*) *luteago*. *Cespitis* is apparently type of *Tholera*; *contribulis* is apocryphal. This generic term, as previously suspected by me, must be used instead of *Apamea*, Led., nec Ochs. The subsequent enlargements of *Luperina* by Boisduval (1840) and Guenée (1841) have no bearing on the question of type. In literature of the North American Noctuid Fauna this name has been seemingly wrongly applied. The existence in our North American fauna of species congeneric with *Luperina testacea* or *Ledereria virens* has not been made out as yet satisfactorily. In all cases, to insure the "scientific" application of the generic name, the type species as here given must be studied and compared with American material. It is very necessary at the moment that this should be done before the issue of a new Catalogue. For this reason I publish the literary evidence so that it may be looked into and, if possible, contradicted or corrected. I had brought the classification of the North American Noctuids into general harmony with Lederer's, so far as structure was concerned. I could not always adopt his generic names, because he had made no literary study of the subject, had taken at times the first name which came to hand in fact, and had repudiated the authority of the Verzeichniss, now acknowledged by almost all writers in England

and America. I believe, with this paper, to have discussed the principal points where Lederer cannot be followed. I may say, in conclusion, that my former use of *Parastichtis*, Hübn., Verz., type *suspecta*, is warranted, since the other species follow *didyma* to *Apamea*, Ochs., 1816, nec Lederer.

### SOME SPECIES OF DIPTERA INHABITING OR FREQUENTING THE WHEAT FIELDS OF THE MIDDLE WEST.

BY F. M. WEBSTER, WOOSTER, OHIO.

The swarms of small Diptera that are to be found in the fields of fall wheat in Ohio, Indiana and Illinois, during late autumn and in early spring, seldom fail to attract the attention of the entomologist who has occasion to visit these fields at the above mentioned seasons. That some species are attracted to these fields as mere visitants is indicated by the accompanying list, but that many others breed there, either upon the living or the dead portions of the wheat plants, is as clearly apparent.

It has been my custom each year to sow a small patch of wheat as early as possible, in order to attract the various inhabitants among insects, in order to study them. In August, 1897, a small plat of wheat was sown at the Experiment Station at Wooster, Ohio, and late in the fall, under my direction, a large number of these plants were transferred to a breeding cage in the insectary, and the results of this breeding were carefully watched by my former assistant, Mr. C. W. Mally. During the following April the various experiment plats of wheat were swept with an insect net and the results properly preserved.

From the wheat plants enclosed in a breeding cage, in the insectary, there emerged, during December, the following species of flies :

<i>Cecidomyia destructor</i> , Say.	<i>Oscinis dorsata</i> , Loew.
<i>Cecidomyia</i> , sp.?	<i>Oscinis coxendix</i> , Fitch.
<i>Diplosis</i> , sp.?	<i>Oscinis umbrosa</i> , Loew.
<i>Sciaria</i> , sps.? (2)	<i>Oscinis carbonaria</i> , Loew.
<i>Phorbia ruficeps</i> , Zett.	<i>Oscinis trigramma</i> , Loew.
<i>Phorbia cinerella</i> , Fallen.	<i>Ceratomyza dorsalis</i> , Loew.
<i>Meromyza Americana</i> , Fitch.	

From the same lot of wheat plants there appeared during the following April :

<i>Diplosis</i> , sp.?	<i>Oscinis carbonaria</i> , Loew.
<i>Chironomus</i> , sp.?	<i>Bibio pallipes</i> , Say.

Sweeping the wheat plats during April gave us the following species, some of them being, clearly, mere visitants :

<i>Sciara</i> , sps.? (2)	<i>Drosophila funebris</i> , Fabr.
<i>Rhamphomyia</i> , sp.?	<i>Tetanocera pictipes</i> , Loew.
<i>Bibio albipennis</i> , Say.	<i>Sepeleon armipes</i> , Loew.
<i>Chironomus</i> , sp.?	<i>Scatophaga furcata</i> , Say.
<i>Phora pachyneuron</i> , Loew.	<i>Scatophaga stercoraria</i> , Linn.
<i>Phora spinipes</i> , Coq.	<i>Hyelomyia</i> , sps.? (3)
<i>Phora</i> , sp.?	<i>Anthomyia</i> , sp.?
<i>Phorbia ruficeps</i> , Zett.	<i>Schoenomyza dorsalis</i> , Loew.
<i>Phorbia cinerella</i> , Fallen.	<i>Cœnosia verna</i> , Fabr.
<i>Phorbia</i> , sps.? (3)	<i>Cynomyia cadaverina</i> , Desv.
<i>Borborus equinus</i> , Fallen.	<i>Myospila mediatubunda</i> , Fabr.
<i>Limosina crassimana</i> , Haliday.	<i>Pollenia rudis</i> , Fabr.
<i>Diastata nebulosa</i> , Fallen.	<i>Lonchoptera punctum</i> , Meig.
<i>Elachiptera longula</i> , Loew.	<i>Lonchoptera lutea</i> , Panzer.
<i>Oscinis coxendix</i> , Fitch.	

The determinations of the species, included in these lists, were made for me by Mr. D. W. Coquillett, through the kindness of Dr. Howard. It has, until recently, been almost impossible to get satisfactory determinations of our smaller species of Diptera, and the foregoing lists are good illustrations of the constantly increasing value, to the workers in applied entomology, afforded by the Department of Insects at the U. S. National Museum.

The University of the State of Missouri is to send an Entomological Expedition into Southern Mexico this summer. It will be in charge of Prof. J. M. Stedman, head of the Entomological Department, and will have for its object the making of a biological (largely entomological) survey of the region from Vera Cruz on the Gulf, which is in perpetual tropics, to the top of the volcano Popocatepetl, which is far above the perpetual snow line, and down to Acapulco on the Pacific. This will give all the temperature variations from perpetual tropics to perpetual snow, and will allow of the study of life zones under conditions not to be found elsewhere in North America. The collection will become the property of the University, which is to furnish half the expenses, the other half to be borne by Prof. Stedman.

## THE COCCIDÆ OF THE IVY.

BY GEO. B. KING, LAWRENCE, MASS.

In Entomological News, Vol. V., 1894, p. 210, Prof. Cockerell cited all of the *Coccids* known to infest ivy (*Hedera*). Since then other species have been found, and with his consent I have prepared the following notes for publication. Leaves of *Hedera helix* sent to Prof. Cockerell from Brazil, coll. Dr. F. Noach, May, 1898, proved to be infested by *Chrysomphalus dictyospermi*, Morgan. And Mr. A. Hempel, of St. Paul's, Brazil, sent *C. aonidium*, L. Just recently he wrote me that *C. dictyospermi*, var. *jamaicensis*, Ckll. (*minor*, Berlese), was received by him from Lord Walsingham, infesting ivy at Cannes, France. *Aspidiotus rapax (camelliæ)* was found by E. E. Green on ivy in Ceylon (*Coccidæ of Ceylon*, p. 44). *Dactylopius citri*, Risso., was found at Kew Gardens, England, on a variety of ivy called *Hedera amurensis* (Newstead, Ent. Mo., May, 1897, p. 73). The following have been found by me at Lawrence, Mass.: *Aspidiotus Crawii*, Ckll., on ivy in a greenhouse, and must have been there for some time, as the vine is an old one, supposed to be about 20 years old. *Lecanium hesperidum*, L., is frequently found on ivy in greenhouses, but not in sufficient numbers to cause much alarm. *Dactylopius citri*, Risso., and *Aspidiotus hederae*, Vall., seem to be the most troublesome, sometimes covering the entire leaves of the vine, and as the leaves are used very extensively in making up wreaths and other floral designs, their presence in greenhouses causes very much damage. A list of the species now known to be found on ivy is appended below :

1. *Phenacoccus hederae*, Sign., Hab. France.
2. *Lecanium maculatum*, Sign., Hab. France.
3. *Lecanium hesperidum*, L., Hab. France and N. America.
4. *Asterolecanium hederae*, Licht., Hab. France and Italy.
5. *Dactylopius citri*, Risso., Hab. England and N. America.
6. *Aspidiotus rapax (camelliæ)*, Hab. Ceylon.
7. *Aspidiotus hederae*, Vallot, Hab. Algeria and N. America.
8. *Aspidiotus Crawii*, Ckll., Hab. N. America.
9. *Chrysomphalus aonidium*, L., Brazil.
10. *Chrysomphalus dictyospermi*, Morg., Brazil.
11. *Chrysomphalus dictyospermi*, var. *jamaicensis*, Ckll., France.



All of the above species, except the first two, have been cited by many authors under various names. The following are some of them:

*Lecanium hesperidum*, L.—*L. lauri*, Boisd., perhaps is the same.

*Asterolecanium hederæ*, Licht., was described as *Planchonina hederæ*, and again re-described as *Planchonina Valloti*, Licht., and probably *Asterolecanium massalongianum*, Targ., is the same.

*Dactylopius citri*, Risso., has the following synonyms: *destructor*, Comst.; *farinosus*, Deg.; *phyllococcus*, Ashm.; *brevispinus*, Targ.

*Aspidiotus rapax*, Comst. Synonyms: *camelliae*, Sign.; *citri*, Comst.; *evonymi*, Targ.; *lucumæ*, Ckll. and Town.

*Aspidiotus hederæ*, Vall.—For a long list of supposed synonyms of this species see Prof. Cockerell's first supplement to the Check List of the Coccidæ, 23 in all, after Berlese and Leonardi.

*Aspidiotus Crawii*, Ckll.—I retain this as being a valid species, although Mr. Marlatt finds it to be *A. cydoniæ*, Comst. He may find something else on the leaf or twig than is indicated by the label, and should not assume that the writer of the label saw it and confused it with the species indicated. Two or more species are often found upon the same leaf and twig. *Aulacaspis elegans*, Leon, found by me on *Cycar-revoluta* in a greenhouse at Lawrence, Mass., had mixed with it on the same leaf *Aspidiotus hederæ*, Vall. Neither can the proportional number be estimated, by any means, by those found on a slide mount.

*Chrysomphalus aonidium*, L., as *Coccus aonidium*, L.; *Chrysomphalus ficus*, Ashm., and *Aspidiotus ficus*, Ashm.

*C. dictyospermi*, Morg., as *Aspidiotus dictyospermi*, Morgan, and *C. dictyospermi*, var. *jamaicensis*, Ckll. (*minor*, Berlese).

## DESCRIPTION OF A NEW SPECIES OF HÆMATOPINUS.

BY HERBERT OSBORN, COLUMBUS, OHIO.

*Hæmatopinus columbianus*, n. sp.

Head longer than broad, semicircular in front, wider and more depressed behind the antennæ, rostrum projecting; antennæ located in front of the middle of the head, the first joint large, deeply set in the border of the head, second joint the longest, third, fourth and fifth nearly equal, fifth slightly smaller; a strong bristle is borne on the postero-lateral angle. The pronotum is short, rather narrow, and the sternal plate is very broadly ovate, almost circular, but the sides posteriorly tapering slightly

and the posterior border obtusely rounded or subtruncate. The second and third pairs of legs are nearly equal and considerably larger than the anterior pair, and their tarsal claws are broad and blunt or obtuse at tip. The abdomen is elongate, segments one to seven with prominent chitinous processes at margin; long stiff hairs are scattered rather sparsely over the disk and along the margins. Length of ♀ 1.20 mm., ♂ .75-.80 mm.

This species approaches *montanus*, Osb., in form, but is narrower and smaller. It differs also in the form of the sternal plate.

Described from a number of specimens taken from the Columbian Spermophile, *Spermophilus columbianus*, at Pullman, Washington, by Prof. C. V. Piper, in July, 1896. Type material in the U. S. National Museum.

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#### BOOK NOTICE.

SYSTEMA LEPIDOPTERORUM HILDESÆ (Second Part).—Phylogeny and Definition of the Families of the Butterflies. With genealogical tree and plate of neuration. Mittheilungen aus dem Roemer Museum, Hildesheim, April, 1900. By A. Radcliffe Grote, A. M.

The author divides the diurnals into two series or superfamilies, Papilionides and Hesperiades, and twelve families, giving diagnoses of the divisions. The classification is phyletic, and takes into consideration the facts of the scanty record from fossil material. As a result of these studies six larger associations of butterfly forms of general distribution are recognized, and as many smaller groups, inhabiting a restricted territory, and giving evidence in most cases or being survivals of once more extensive complexes. The nomenclature has been reviewed, and the author hopes the work may conduce to conformity in the treatment of the butterflies in literature.

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DR. A. FENVES, of Pasadena, Cal., started on a collecting trip to the Atlantic Coast on the 1st of June, and will return to Pasadena in October.

DR. W. HOLLAND is to resign his position as Chancellor of the Western University in Pittsburg, the *Dispatch* of that city hears, to become Director of the Carnegie Museum.