The Canadian Entomologist.

VOL. XXXII.

LONDON, JULY, 1900.

No. 7

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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 *Phalæna 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 cunea "was doubtless punctatissima".....(Lyman, p. 121, May number).
- 2. a. Drury's cunea has the back and abdomen ash-colour.....(Drury's description).
- b. "There is no doubt of the identity of cunea 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 *cunea* 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. cunea*, 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.]