



THE  
ENTOMOLOGIST'S RECORD  
AND  
JOURNAL OF VARIATION.

EDITED BY  
J. W. TUTT, F.E.S.

VOL. III., 1892.

PRICE 7s. 6d.  
Special Index, 1s.

LONDON:  
ELLIOT STOCK, 62, PATERNOSTER ROW, E.C.

BERLIN:  
R. FRIEDLÄNDER & SOHN,  
11, CARLSTRASSE, N.W.

NEW YORK:  
P. H. HEINSBERGER, 9, FIRST AVENUE,  
NEW YORK, U.S.A.

The Entomologist's Record,  
AND  
JOURNAL OF VARIATION.

No. 5. VOL. III.

MAY 16TH, 1892.

THE GENUS *ACRONYCTA* AND ITS ALLIES.

By DR. T. A. CHAPMAN.

(Continued from page 76.)



*ACRONYCTA* (*Cuspidia*) *aceris* (continued).—I have some notes on the arrangements of the hairs beneath the effete skin previous to moulting. How the tufts are laid across the dorsum to the opposite side, interlacing with those of the other side, either hair by hair or in small bundles,—how the lateral bundles pass beneath the larva and interlace below with those of the other side, and so on,—but I have no observations at all solving the difficult question that has often puzzled me in hairy larvæ, how the hairs get into these positions. One would suppose that they must grow from their points of origin, but how do they in the confined space between the two skins, pass so smoothly to the other side and interlace with the others accurately, with no trace of ever pushing one another aside irregularly?

The white diamonds have four hair dots across their middle and two near their posterior angles, the latter carry minute pale hairs, otherwise they are free from hairs or marking or hair dots. The lateral tubercles are still important as hair carriers, and in this respect are not much differentiated from the surrounding skin, but the trapezoidal tubercles have become much less important than in previous skin and have to be sought for. When disturbed, the larva curls round into a solid ring, with the head buried in the hollow of the 10th and 11th segments, yet the larva retains a very firm hold of

THE BRITISH COCCINELLIDÆ.<sup>1</sup>—The insects comprised in this group are essentially of the highest interest and importance to agriculturists, florists, and mankind in general, from the fact that in their larval and pupal stages they feed on the pests termed *Aphides*. In those portions of the country devoted to the cultivation of hops, the *Aphides*, or “Fly” as they are sometimes called, do a vast amount of injury to the plantations, and the quality and quantity of the hop crop often depend on the repressive measures adopted to rid the vines of their tiny but numerous enemies. Yet, in spite of all precautionary measures, the *Aphides*, owing to their marvellous power of reproduction, continue year after year to flourish and multiply. As destroyers of *Aphides* the Ladybirds are undoubtedly the best servants possessed by the agriculturist, as not only do they derive their sustenance from the *Aphides*, but they also destroy many more than are required for actual feeding purposes. It will thus be seen that the part played by the Ladybirds is of incalculable value, and that the species should in all stages be protected from wanton destruction.

*Number of Species.*—In Dr. Sharp's *Catalogue*, 1871, the division *Coccinellidæ* comprised twelve genera, containing altogether forty-one species. In the *Catalogue* issued by Fowler and Matthews at the commencement of 1883, some thirteen genera were enumerated, and the species then known numbered forty-five. In the same year, however, Dr. Sharp brought out a revised edition of his *Catalogue*, wherein the group was rearranged under sixteen genera, although the number of species remained the same as in Fowler and Matthews' *Catalogue*.

For many years British coleopterists laboured under the great disadvantage of not having a good handbook on this branch of Entomology; but in 1887 the first volume of *The Coleoptera of the British Islands* was issued by Canon Fowler. In 1889, the third volume, which contains the *Coccinellidæ*, made its appearance. The entire work is now completed. The alterations in the arrangement of the genera and species of the *Coccinellidæ* were numerous. We find in Canon Fowler's work that the group is now divided into two divisions, *viz.*, *Coccinellidæ-Phytophagæ*, containing but a single species, and *Coccinellidæ-Aphidiphagæ*, comprising fifteen genera, and containing forty-two species. The total number of British species, despite the fact that a new species of *Coccinella* is incorporated in the group, is thus reduced to forty-three. This is accounted for in the following manner:—by transferring *Alexia pilifera* to the *Endomychidæ*; by classing *Exochomus nigromaculatus (auritus)* as doubtfully British; and by reducing *Scymnus limbatus* and *S. scutellaris* to the position of varieties only. As most of our species are sufficiently recognisable by the markings of the elytra, it is scarcely necessary to go into the matter of structural differences.

COCCINELLIDÆ PHYTOPHAGÆ.—The only species in this division, now called *Subcoccinella 24-punctata*, L., was formerly known in our lists as *Lasia globosa*, Schneid. The insect is very local. Unlike the other members of the British *Coccinellidæ*, it is a plant feeder, and can be obtained in considerable numbers by using the sweeping-net in the

<sup>1</sup> Abstract of paper read at meeting of City of London Entomological and Natural History Society, March 3rd, 1892, by Mr. G. A. Lewcock.

localities where it occurs. I have found both larva and beetle on clover and other plants at Chattenden, Kent. Mr. Battley brought me some specimens from Southend; Mr. Newbery obtained it near Southampton; Mr. T. W. Hall captured a few specimens, singly or in pairs, in Hertfordshire, and also near London; Mr. A. Ford finds the species common in the Hastings district. Many other localities are given in Canon Fowler's work, but those enumerated above are quite sufficient for the purposes of this paper.

**COCCINELLIDÆ APHIDIPHAGÆ.**—The term *Aphidiphagi* was first used by Latreille, as referring to the carnivorous habits of the species included in this division of *Coccinellidæ*. It may be as well, however, to mention that in Kirby and Spence's *Entomology* it is stated that the larva of *Coccinella hieroglyphica* "eats the leaves of the common heath (*Erica vulgaris*) after the manner of Lepidoptera." Of this point I have not been able to satisfy myself, but judging from the structure of the mouth organs, etc., I believe it to be similar in habits to the other species of the genus. *Life history.*—The perfect insects pass the winter in a state of hybernation, hiding behind bark of trees, in odd cracks and corners generally. On the approach of spring the beetles come out, and the females may be found in suitable localities depositing their eggs, usually on the underside of leaves or on the stems of plants, trees, etc., which are infested with *Aphides*. Sometimes a number of eggs are deposited together, but more often the parent beetle distributes them over several plants. The young larvæ appear in a few days, and are mostly of a slaty-blue colour, but this varies according to the species. In the majority of cases, however, some traces of the wing-pattern are more or less discernible. The larvæ immediately commence their attacks on the *Aphides*, devouring and slaughtering them indiscriminately. It is somewhat interesting to watch the Ladybird larvæ at feeding times, and note their method of operation. On one occasion while experimenting with larvæ of *Coccinella 11-punctata* in my garden, I witnessed the destruction of twelve *Aphides* by a single larva in about five minutes. It was on a July afternoon, and I was endeavouring to get the former species to feed on the *Aphides* clustered on some scarlet-runner beans. I placed a larva on a leaf which contained a goodly number of *Aphides*. It immediately roused itself like an animal scenting prey. First one *Aphis* was caught up in its jaws, given a sort of shaking, then dropped, as if the flavour was not of the right sort. Other *Aphides* became victims in the same way, when the Ladybird larva moved off to a new hunting-ground. The experiment of trying to rear the larva of *C. 11-punctata* on the garden *Aphides* proved eventually an utter failure, and I was only able to obtain a couple of starved specimens from about 50 or 60 larvæ, and these, I believe, were nurtured from the carcasses of their brethren in confinement. To resume the subject, the larva, on reaching the full-fed stage, fastens its tail to a leaf, generally choosing the upper surface, the body attaining an upright position, and it then changes to pupa. The duration of the pupal stage seldom exceeds six days, when the beetle emerges quite perfect. At first the elytra (or wing cases) are of an uniform white, but in a short time, however, the dark markings begin to appear, and in a few hours the wing-cases are of the proper pattern and colour. *Variation.*—It is well known to most coleopterists that the Ladybird

species in many instances vary so exceedingly in the colour and markings of the elytra as to give one a deal of trouble in determining the name of the species to which it belongs. The most variable of the group undoubtedly are *Adalia bipunctata*, *Coccinella 10-punctata*, and *C. hieroglyphica*. Other species also vary considerably, but not to the same extent as these three. The type form of *A. bipunctata* has red elytra with a black spot on each side. Sometimes, (perhaps owing to the disarrangement of the black pigment by moisture as it pupates) the black spots spread over the elytra, leaving two red spots visible near the apex, and at the humerus. Then again the black markings take the form of a cross, and in some varieties the pattern is indescribable. In *C. 10-punctata* we have endless varieties, the most pronounced being black with testaceous humeral spots. In some instances, we find an entire absence of black markings, or the dark are replaced by white markings. Some specimens have a coronet of spots on the thorax, but this feature is not wholly confined to *C. 10-punctata*. In *C. hieroglyphica* the type form has five distinct black markings on the elytra, and between this and the black form there are many gradations. A specimen in the exhibit (captured at Esher) has black elytra with four red spots. A second (from West Wickham) somewhat resembles it, but has also a red border to the elytra. (*To be continued.*)

DEVELOPMENT OF IMAGO WITHIN PUPA.—I find that *Valeria oleagina* matures before winter, and passes the winter as an imago, within the pupa shell, like the *Teniocampas*. This habit has some bearing, or at least, it is illustrated in some of its physiological aspects, by the instances recorded of a moth not developing its wings for many hours after emergence. Will no one rear some common *Teniocampas* in quantity, and tell us all about this curious habit? what other species possess it?—T. A. CHAPMAN, Firbank, Hereford.

CLASSIFICATION BY STRUCTURE OF IMAGO.—I feel so sure that Mr. Tutt's remarks on my system of classification (*ante*, p. 50) are prompted by a genuine interest in science, and desire for the truth, that I have no doubt he will allow me space to point out quite briefly where he has unintentionally mis-stated the facts of the case. In the first place, my system is not based on neuration, but on the structure of the imago, of which, of course, neuration forms a part only. The whole of the structure is noted and made use of wherever available. Secondly, my papers, referred to by Mr. Tutt, consist solely of an immense body of facts, wholly founded on original observation, and in large part new (being the structural characters which I have observed in each species, and often in a very large number of individuals of each species); and of a small number of conclusions drawn from these facts (namely, the ordinal grouping of these species in genera and families). These conclusions may, of course, be wrong; I, at least, have never laid claim to infallibility; but unless it can be shown that a large proportion of the structural facts are false (which is not alleged), I submit that the accumulation of so large a body of scientific facts cannot be regarded as "utterly useless;" and I feel sure that Mr. Tutt will, on this showing, willingly withdraw the epithet. Thirdly, I would point out that Mr. Tutt's use of the term, "superficial," is not in accordance with its general acceptance in science; where it is employed to denote all such characters as are not structural, such as colour, markings and habit. The

# The Entomologist's Record, AND JOURNAL OF VARIATION.

NO. 6. VOL. III.

JUNE 15TH, 1892.

## SCIENTIFIC NOTES.

THE BRITISH COCCINELLIDÆ.—(Continued from p. 104.)

**HIPPODAMIA**, Mulsant.—This genus contains two species. *H. 13-punctata*, L., is usually found in marshy places, among reeds, etc., and is not common. The only record I have is by Rev. W. F. Johnson, whose specimens are exhibited. He takes it "on water-plants, etc., near marshy places." The localities given by him are Armagh, Belfast, and Dublin. *H. variegata*, Goeze (*Cocc. mutabilis*), is easily recognized by its oblong shape, and in having a row of spots arranged somewhat in form of a semicircle across the elytra. The spots are often confluent, and at times only faintly present. The larva seems to feed on *Aphides* frequenting low herbage. I obtained my series chiefly at Sheire (Surrey), but have also met with it at Rainham (Essex) on banks of the Thames. Mr. W. E. Sharp (Chester) writes me that "*C. mutabilis* is very common on the rough star-grass of the sandhills on the coast." Canon Fowler states that it is not recorded from the northern counties of England or from Scotland.

**ANISOSTICTA**, Duponchel.—Our single species, *A. 19-punctata*, is found chiefly among reeds and aquatic plants. The species is common in localities near London. On one occasion Mr. Cripps and myself bagged over 100 specimens at a small marsh in Esher. It can also be obtained freely at the ponds of Walthamstow, Loughton, etc. Mr. T. H. Hall "for some years past found them plentifully and in variety by sweeping tufts of decaying reeds in the shallows on Barnes Common." Mr. Ford states that it is scarce in Hastings district. Mr. W. E. Sharp (Chester) records one capture only.

**ADALIA**, Mulsant.—Three species are included in this genus by Canon Fowler, viz., *A. obliterated* and *A. bipunctata* (formerly of the genus *Coccinella*), and *A. bothnica*, a species new to Britain. *A. obliterated*, L., has an M-like marking on its thorax, and is usually found in fir plantations. It is generally distributed in South of England, but not common. I have captured it at Esher, Sheire and Farnham (Surrey). Mr. T. H. Hall took some under bark about ten years ago in Bradley Wood, Derby. Mr. Ford says it is "somewhat common, but local, in Hastings district." Rev. W. F. Johnson records it from Armagh, and Mr. H. G. Cuthbert captured it in Dublin district

during autumn of 1891. *A. bothnica*, Payk., has a variety named *crucifera*, Weise. A single specimen of this variety has been captured by Dr. Power at Moss Morran, Scotland, and for this reason Canon Fowler incorporates the species in the British list.

*A. bipunctata*, L.—This beetle may be found almost everywhere—in our gardens, parks, fields, river banks, and indeed in any place where herbage or trees grow. In choice of prey it is undoubtedly the least dainty of the Ladybird tribe, as it will devour nearly every species of *Aphides* which infest our fruit trees, flowers, and food crops. In the vicinity of hop grounds, it is surprising what immense quantities of *A. bipunctata* are to be met with. I remember on one occasion while visiting Farnham (Surrey) that the insects swarmed in great numbers in the windows, houses, and churches in that district. Other Ladybird species, such as *Coccinella 10-punctata* and *C. 7-punctata*, were also present, but not in such profusion as *A. bipunctata*. The whole of these three species will devour the "Hop Aphis" (*Phorodon humuli*), but the last is by far the most useful in hop plantations. The migratory habits of the two-spot Ladybird are so well known that it is needless to enlarge on the subject. Suffice it to say, however, that the Ladybirds appear to follow the swarms of *Aphides*. Nevertheless, there is just one fact in connection with this subject that may be worthy of note. In 1888 Professor Riley, the eminent American entomologist, specially reported on the life-history of the "Hop Aphis," and confirmed the statement made by Mr. Francis Walker (in 1848) that the Aphis migrates in the autumn from the hop to the wild or cultivated plum (where the eggs are laid), and then back again to the hop plant in the spring. Owing to this statement certain cultivators rather lost their heads, and it was suggested that the plum tree, wild and cultivated, should be exterminated. What I should like to impress upon cultivators is this: Supposing that the plum trees be condemned in order to deprive the "Hop Aphis" of its hibernating refuge, how are we to prevent immigration of the *Aphides*? Probably, after we have sacrificed one of our best fruits, the number of *Aphides* in hop plantations would be found as great as ever. The subject certainly requires much further investigation before such drastic remedies are resorted to. It must also be borne in mind that hop cultivation has ever been precarious, and that the plants are largely affected by the weather; therefore, given genial weather and proper cultivation,<sup>1</sup> the hop plant, aided by the Ladybirds, would doubtless recover from the attacks of *Aphides*, and a good crop would be the result.

MYSIA, Mulsant.—*M. oblongo-guttata*, L. (formerly *Coccinella oblongo-guttata*), is one of the large species which devour the *Aphides* frequenting fir trees. It is local rather than common. It occurs at Esher, Farnham, and other parts of Surrey; Delamere Forest and fir woods in Cheshire district (W. E. Sharp); Hastings; and fir plantations generally.

ANANTIS, Mulsant.—Our species, *A. ocellata*, L., is the largest of the British Ladybirds. When alive, the black spots on the elytra are surrounded by white or yellow rings, which become indistinct after

<sup>1</sup> The meaning intended by this term includes burning the dead bines and general rubbish of the hop grounds. In America, repressive measures form part of the cultivation of potatoes.—G. A. L.

death. This beetle may be found in similar localities to *A. oblongoguttata*, and frequently in company with it. (To be continued.)

ENTOMOLOGICAL PUBLICATIONS BY THE LINNÆAN AND ZOOLOGICAL SOCIETIES OF LONDON (*ante*, p. 52).—In your editorial note, in reply to my mention of Mr. Poulton's paper on the "Morphology of the Lepidopterous Pupa," you take exception to the publications of entomological papers in the *Transactions of the Zoological and Linnæan Societies*. It seems to me, however, that there are several good reasons for this, and that they are not very far to seek. In the first place, the Entomological Society is not as wealthy as the Linnæan and Zoological Societies, and could not possibly take all the papers on entomological subjects which would be offered, if the above-named societies did not accept such papers. The Entomological Society's subscription is a very moderate one, and if more of our entomologists joined it, its publishing power would attract papers which now go elsewhere. A second reason is that the Linnæan and Zoological Societies would have no right to the names they bear, if they excluded one important section of the animal kingdom; for be it observed, that one series of the Linnæan Society's *Transactions* and *Proceedings* is devoted to Zoology, and the other to Botany. By this breadth of field they are able to take in branches which have no society specially to bring them forward—Conchology, for instance. Another reason, and the one which particularly applies to the paper in question, is that the Entomological Society's *Transactions* are in octavo form only, whilst the Linnæan and Zoological Societies publish theirs in quarto. This, in a paper such as Mr. Poulton's, is of paramount importance, as it is illustrated by numerous and highly enlarged figures, quite unsuitable for an octavo page. Beside 14 woodcuts in the text, the paper has two plates, bearing respectively 32 and 34 figures, varying from the natural size of the object represented, to a magnification of 50 diameters. Until a very large accession of Entomologists to its ranks, enables the Entomological Society to bring out some of its publications in quarto, such papers as this, to say nothing of those requiring the figures of large insects, Westwood's *Castniide* or Butler's *Revision of the Sphingida*, for example, must continue to find their way to the Linnæan or Zoological Societies' *Transactions*, and while this is so, may we hope that our Editor will keep himself informed of such papers, and from time to time bring those he considers of interest under the notice of the readers of the *Record*.—GEO. C. GRIFFITHS, 43, Caledonia Place, Clifton, Bristol. [Mr. Griffiths is right. I have repeatedly drawn attention to the fact that our entomologists do not support the Entomological Society of London, so largely as they should. I did not think, when I penned my editorial, of the all round loss we should sustain, were the sister societies not to help in the publication of our work. I was only thinking of the inconvenience the distribution of such papers is.—ED.]

HEPIALUS HUMULI.—Now *Hepialus* is to the front, I may mention an observation, that I do not think I have recorded or seen mentioned by others. In two successive years, I saw what I took to be NOCTUÆ hovering about the summits of one or two elm trees, some 50 or 60 feet from the ground. I managed to capture one by watching for one descending to a lower level, and found it to be *humuli* ♂; and then

# The Entomologist's Record

AND

## JOURNAL OF VARIATION.

No. 7. VOL. III.

JULY 15TH, 1892.

### THE GENUS *ACRONYCTA* AND ITS ALLIES.

By DR. T. A. CHAPMAN.

(Continued from page 99.)



**A**CRONYCTA (*Bisulcia*) *ligustri*.—This species differs from the groups *Viminia* and *Cuspidia* more than they do from each other. If it is to be kept within the genus *Acronycta*, then most certainly such species as *Clidia geographica* and *Simyra nervosa* must be placed in the section *Viminia*, and not in separate genera.

*Ligustri* differs from the others in the form and sculpturing of the pupa, and also in the form, habit and general facies of the full-grown larva, even making full allowance for the immense variety that *Acronycta* allows amongst its adult larvæ. It agrees with *Acronycta*, however, in its two most essential characters—*viz.*, the flat dome-shaped egg (less than a hemisphere) very like that of *psi*, and in the young larva having a “weak” eleventh segment, and having, indeed, an undoubted *Acronycta* form and aspect, although it has no dark segments—except the black head, and this even is pale on emergence from the egg.

The egg (Pl. VIII., fig. 8) is of a pale pearly green, almost colourless, very translucent, 1.1 to 1.2 mm. in diameter, quite as flat as any of the others, about one-third its diameter in height. The ribs are 60 in number; the micropylar area is rather larger than usual, and the ribs do not increase in number outwards by intercalation or division so much as is usual in other species. The figure is faulty in not showing a large micropylar area, and in showing little or no branching of ribs. In one instance, two ribs joined together outwards, and so

are two, if not three, very minute bristles at the base of the antennæ.

I have never taken the larva on anything but ash, which is no doubt its proper food in this district (Hereford), and its form and colouring are so adapted to its residence on the leaves of the ash, that I should imagine its other foodplants are makeshifts, resorted to, if one may so express it, because their botanical affinities persuaded the parent moth when ovipositing, that if they were not ash they were something very like it, and the larvæ found it possible to accept the position.

I have never had a pupa of this species successfully pass a second winter in that stage.

(To be continued.)

---

## SCIENTIFIC NOTES.

THE BRITISH COCCINELLIDÆ.—(Continued from p. 123.)

COCCINELLA, Linné.—This genus formerly contained two-fifths of the entire British species, but in the present arrangement six only are included. The first in order, *C. 10-punctata*, L. (*variabilis*, Ill.), has been referred to previously as being one of our most variable species. It is common and generally distributed, and may readily be recognised by the yellow legs when other characteristics are wanting. *C. hieroglyphica*, L., occurs in heathy places, and is generally common. At Esher, Farnham, Shirley, West Wickham, and other localities in Surrey it can be taken abundantly by sweeping heath, the black vars. being almost commoner than the type form. *C. 11-punctata* is occasionally abundant on the banks of the Thames and other places near London. A considerable variation is exhibited in the spot-markings on the elytra; sometimes the spots are entirely confluent, and in the Irish exhibits by Rev. W. F. Johnson and Mr. H. G. Cuthbert the whole of the specimens are of this character. The Rev. W. F. Johnson writes me that the type form of this species is rare in Ireland. The variety occurs also at Farnham (Surrey), Rainham (Essex) and Yarmouth. *C. 5-punctata*, L. is a northern insect, and I have no authentic information concerning it. *C. 7-punctata*, L., though generally common everywhere, can be best obtained by sweeping the rank grass at sides of meadows. It is also common on heath, and widely distributed. *C. distincta*, Fald. (*labilis*, Mulsant) closely resembles *C. 7-punctata*, but the anterior angles of the thorax are much broader, more rounded, and not so projecting; and the apex of the episterna of the metasternum is white. The species appears to be local rather than common, and occurs in various parts of Surrey, Kent, and Sussex.

HALYZIA, Mulsant.—As very little reliable information is to be obtained respecting *H. 12-guttata*,<sup>1</sup> it must be passed over for the

<sup>1</sup> It may be as well to note here that the term "*guttata*" is applied to the white-spotted species.

present. The next in order, *H. 16-guttata*, is said to frequent young birches and other trees, but none of my correspondents record any capture of this species. *H. 14-guttata*, L. can hardly be considered common, as it never turns up in any numbers. It occurs in the London district (that is to say, the district as recently defined very properly by the City of London Entomological and Natural History Society), Esher (on wild sage), Farnham, etc. Three specimens were captured by Mr. H. G. Cuthbert in the Dublin district during the autumn of 1891. *H. 18-guttata* abounds in fir plantations in south of England and elsewhere. Two of the series exhibited were sent me by Mr. Cuthbert, who captured them in Dublin district, in autumn of 1891. *H. conglobata*, L. (*C. 14-punctata*, L.) is found commonly by sweeping sides of lanes, banks of nettles, etc., everywhere. *H. 22-punctata* is generally common in Surrey and elsewhere on banks and sometimes on nettles.—G. A. LEWCOCK.

COREMIA FERRUGATA AND UNIDENTARIA.—The question as to the specific distinctness or otherwise of these two common GEOMETRÆ has long been an open one, but few attempts seem to have been made to arrive at any definite conclusion. Newman's remarks (*British Moths*, p. 170) are no doubt well known to most British lepidopterists, and need not be quoted in full. In effect, he states that we have *two* species, exceedingly alike except in colour, but not indistinguishable, *unidentaria* having occasionally a "purple-red median band very much resembling that of *C. ferrugata*"; but he adds that Guenée combines the two on account of Sepp having figured both varieties as bred from the same caterpillar; and that according to his (Newman's) own observation the two caterpillars "are extremely similar in all their characters." No doubt these remarks have given rise to many experiments, but very little seems to have been put on record. Mr. Sydney Webb has obligingly furnished me with a short outline of the history of the question. He says (*in litt.*):—"It is really curious how history repeats itself. When first collecting I learnt that *unidentaria* and *ferrugata* were forms of one moth; then Stainton's *Manual* came out and we had two species; doubts were thrown upon these and the two almost merged together again; at all events, soon afterwards we were told that *unidentaria* had red banded examples and *ferrugata* black ones. No doubt in collections the species were very much mixed, and when sales came on at Stevens' and Sotherby's rooms, these series were as eagerly sought after as lots of vars. now, not for their rarity, but intending purchasers, trusting to well known collections being rightly named, so purchased with avidity these lots to be certain their own insects were correct. Then came a time when a little more light was thrown upon the subject, and a little knowledge is a dangerous thing; all red *unidentaria* were thrown out from collectors' series as doubtful—Knaggs repudiated them; Newman, a good general entomologist, but no lepidopterist, could say nothing but follow the lead of others before him; and Stainton had devoted himself to micros. So things gradually drifted into the copying age of literature of entomology, combined with the crude observations of young observers. . . . It thus behoves us now to check (from these inaccuracies constantly repeated) all the older statements of entomologists."

Going on the lines suggested in the sentence last quoted, I have