

## ON THE GENUS ACENTROPUS.

COULD we imagine an insect to be endowed with a capability of knowing what is done in the regions of human science, we might picture to ourselves the state of amusement into which the tiny *Acentropus niveus* would be thrown by the continued strife of opinions of which it has been the subject during the last half-century, and at the fierce wordy combats that are still fought over its remains whenever they are exhibited at the meetings of the learned in entomology. I trust in this chapter, after giving a history of opinions relative to the classification of the genus *Acentropus*, to furnish such evidence, touching the early states of one of the species, as will definitively settle the question of the Order to which it belongs, and will perhaps also supply facts that may enable us to point out the approximate position of the genus in that Order.

The first mention we find of what is apparently an *Acentropus* is in the 'Encyclopédie Méthodique' (A.D. 1791), tome vi. p. 549, where Olivier describes it under the name "Frigane blanche (*Phryganea nivea*)," in the following terms:—

"*Phryganea alba*; oculis nigris, abdominis dorso fusco.

"Elle a à peine trois lignes de long. Les antennes sont blanches, de la longueur du corps. Les yeux sont noirs. Tout le corps est blanc, avec la partie supérieure de l'abdomen un peu obscur. Les ailes sont ciliées, blanches, sans taches.

"Elle se trouve aux environs de Paris."

Olivier arranges this insect under the third section of the order Néuroptères; but in his introduction to the natural history of the *Phryganeæ*, in the same work, he says, speaking of "les Friganes," "elles sont comme une gradation entre les Phalènes et les autres insectes à quatre ailes," from which it is evident Olivier thought there were close connecting links between the Lepidoptera and the Neuroptera.

Latreille, in his 'Histoire Naturelle des Crustacés et Insectes,' in the 13th volume, published in the year 1805, furnishes us, still

also under the order Neuroptera, with the following short particulars of our insect:—

“Frygane blanche, *Phryganea nivea*, Oliv. Blanche; ailes ciliées; partie supérieure de l’abdomen obscure. À Paris.”

This description is apparently merely a condensation of the original and fuller one by Olivier.

In 1829 Mr. J. F. Stephens published his ‘Systematic Catalogue of British Insects,’ and at page 316 he alludes to this insect as follows:—

“ACENTRIA (mihi).

*Phryganea*, Olivier?

NIVOSA.

*Ph. nivea*, Olivier? Latr. H. xiii. 93”—

placing it under the order Neuroptera, and family Perlidæ.

In 1833, Stephens, in his 2nd edition of the ‘Nomenclature of British Insects,’ gave *Zancla Hansoni* ♀ as distinct from *Acentria nivosa*, but he furnished no characters of either genera or species.

On the 1st of April, 1834, Mr. Curtis sent out to the world, together with plate 497 of his ‘British Entomology,’ an excellent description of our insect, under the name *Acentropus Garnonsii*. This is the first description of the insect which I can find in any English work. It is as follows:—

“Order TRICHOPTERA. Family PHRYGANIDÆ.

“(Type of the genus, *Acentropus Garnonsii*, Curtis.)

“ACENTROPUS, Curtis.

“*Antennæ* inserted on the crown of the head, close to the eyes, not so long as the body, slightly setaceous, pubescent, being clothed with very short hairs; joints numerous, obovate, the basal one subglobose.

“*Labrum*\* rather elongated and tongue-shaped.

“*Maxillary palpi* (in the male at least) large, drooping, triarticulate (?), and densely clothed with scaly hairs.

“*Labial palpi* none.

“*Head* subglobose, hollow beneath; eyes lateral, globose. *Thorax* somewhat oval. *Abdomen* attenuated, terminated by a curved horny lobe and two hairy ones on each side in the male. *Wings*:

\* Mr. Curtis has here apparently mistaken the pair of short maxillæ for a labrum, and which he represents in his plate erroneously as in one piece. The labrum is absent.

*superior* sublanceolate, with a long cell, and several nervures issuing from it and extending to the posterior margin; *inferior* ovate, with similar nervures; *cilia* formed of long and short scales, dilated, and lanceolate at the apex. *Thighs* rather short: *tibiæ* simple, not spurred: *tarsi* 5-jointed, basal joint long, the remainder slightly decreasing in length; *claws* and *pulvilli* distinct.

“GARNONSII.

“Ochreous: head clothed with short white, and thorax with greyish scales; eyes black: wings white and rather satiny, superior with the costa ochreous, and the edge of the other margins slightly so; the underside of the former densely clothed with short and broad upright scales towards the apex, which is very acute.

“In the cabinet of Mr. Dale.”

Mr. Curtis further appends the following remarks:—“If Trichoptera be related to Neuroptera on the one hand, it most certainly is as nearly allied to the Lepidoptera on the other; it would therefore be impossible to join it to either without uniting the three orders. In the present instance, so near an approach does *Acentropus* make to the Lepidoptera, that if the palpi were broken off, it would not be easy to decide to which order it belonged, whether to the Trichoptera or Lepidoptera. The mealy texture of the insect might induce an opinion that it was Trichopterous, whilst the contour and neuration of the wings would be in favour of its relation to the Lepidoptera. The absence of a proboscis proves nothing, since it is sometimes wanting in the Bombycidæ and other groups. I do not, however, remember any instance amongst the Lepidoptera in which the maxillary palpi are strongly developed, and the labial absent; yet such appears to be the case in *Acentropus*; and amongst the Trichoptera, if there be no other instance in which the labial palpi are wanting (but I think there is), at any rate they are frequently, if not always, smaller than the others, as in *Limnephilus* and *Leptocerus*, &c.

“The generic name of this curious insect alludes to the absence of spurs at the apex of the tibiæ: the species I have the pleasure of naming after the Rev. W. L. P. Garnons, of Sidney-Sussex College, Cambridge, who took it at Layer Murney, near Colchester, Essex, and presented it to J. C. Dale, Esq., to whom I am indebted

for the opportunity of illustrating this remarkable genus. I think I have heard of Dr. Leach taking a specimen in June in Scotland, and that it has been found also on the Croydon Canal, and in Berkshire."

I have quoted at great length from Curtis, because his descriptive details are so full and accurate that they well-nigh exhaust that part of the subject; and it will not afterwards be necessary for me to inflict another description of *Acentropus niveus* upon the reader. Curtis, however, through not being acquainted with the earlier states of the insect, missed its true affinities.

On 7th July, 1834, Mr. Westwood read a short paper before the Entomological Society, on the genera *Acentria*, *Acentropus*, and *Zancla*, in which he states, after an examination of an original specimen of Stephens's *Acentria nivosa* (= *Acentropus Garnonsii*) and a specimen of *Zancla Hansoni*, that he had arrived at the conclusion that they are male and female of the same species. He further says, in the following emphatic language, "The result of the examination has proved that Mr. Curtis has overlooked two characters which are peculiarly characteristic of the order Lepidoptera, and which are possessed in so striking a degree by the insect in question, that no reasonable doubt can any longer exist as to the impropriety of its insertion among the Trichoptera."

"In the first place, the *front* of the thorax is furnished on each side with a pair of *patagia*, or tippets, which extend to the base of the exterior wings; and, in the second place, the base of the second pair of wings is armed with a long bent bristle, connected with an apparatus on the under side of the first wings at the base, and which apparatus is distinguished in the 'Introduction to Entomology' under the names of the *hamus*, or hook, and *tendo*, or tendon. The scales on the wings are also eminently characteristic of a Lepidopterous insect."

"As to the genus or even family of Moths to which the insect in question is most nearly allied, or of the propriety of the specific name with reference to its identity with Olivier's insect, I shall offer no opinion on the present occasion, observing only that Mr. Haworth's specimen was labelled '*alba*, Olivier.'"

It will be seen that Mr. Westwood, with that almost intuitive perception of the strong points of a

his researches, was the first to pronounce upon the Lepidopterous nature of *Acentropus*.

On 15th August, 1836, Mr. Stephens published a description of his two insects, *Acentria nivosa* and *Zancle Hansoni*, uniting them, as suggested by Mr. Westwood, under the name *Acentropus niveus*. The generic and specific descriptions of Stephens are mere transcripts of those of Curtis and Westwood above quoted; they do not therefore contain anything worth extracting. Bearing in mind the absence of spurs to the legs; the peculiar neuration of its wings, all of which have a long discoidal areolet, from which a radiating series of nervures springs (the nervures extending to the costal and hinder margins); the tippets to the thorax; the scale-like clothing of its wings; the bristle on the hinder pair, and the squamous head, Stephens inclines to the belief that the insect is Lepidopterous,—although he here places it as the sole representative of his family Acentropidæ, the first family in the order Trichoptera of Kirby, with the following explanation of the course he has adopted:—"I am not aware of any genus of the Tineidæ (the only family to which it can be allied) that is destitute of spurs on the four hinder tibiæ: its metamorphoses are yet unknown, but when detected, its location will then become evident; for the present, therefore, having completed the Lepidoptera, I shall temporarily remove it to this side of the line of demarcation, and consider it as referable to this order, rather than omit all notice of this singular family." In addition to the localities given by Curtis, he says Mr. Hanson took it near Reading in Berkshire.

On 3rd December, 1838, Mr. Westwood read a paper before the Entomological Society, "On Insects which inhabit the Tissue of the Freshwater Sponge, *Spongilla fluviatilis*," and in which he threw out the following suggestion:—"It is barely possible that they may be the larvæ of *Acentropus*." Mr. Westwood provisionally termed the insect *Branchiostoma spongilla*.

Mr. Haliday, however, at the meeting of the same Society on 7th February, 1848, supported the suggestion of Dr. Erichson, that the *Branchiostoma spongilla* is the larva of *Sisyra fuscata*, one of the Hemerobii.

In 1840, Mr. Westwood figured and described, in his *Introduction to the Modern Classification of Insects*, various

portions of the structure of *A. niveus*, pointing out that it possesses distinct although very short maxillæ, and expressing the opinion that the palpi are labial palpi, and not belonging to the maxillæ at all. He here placed it in the family Tineidæ, and between the genera *Euspilapteryx* and *Gracillaria*.

In 1845, Mr. Westwood, in his 'British Moths and their Transformations,' placed *A. niveus* at the end of the Tineidæ, between the genus *Gracillaria* and the family Alucitidæ, remarking, "It is in this order, and provisionally in the present situation (although probably nearer to some of the Yponomeutidæ), that I place this insect."

In 1848 Kolenati published his 'Genera et Species Trichopterorum,' in which, at page 6, alluding to the excluded *Acentropus niveus*, he says, "Nil mirum quod Olivier, Latreillus, Stevensius, et Curtisius Pyralidem sub nomine *Phryganeæ niveæ*, Oliv., et *Acentriæ nivosæ* (*Zancle Hansoni*, Steph., *Acentropus Garnonsii*, Curtis), descripserunt; habitus enim et vivendi ratio Acentropodis cum illo Trichopterorum congrua. Ipse *Acentropodis nivei* 40 exemplaria Petropoli in flumine, viginti passus a ripa, inveni. Lepidopteron hocce peculiare in Potamogetone heterophyllo et perfoliato victitat, et in aquæ superficie currit, rostelloque gaudet adeo brevi, bipartito, ut cum *Phryganeæ* commutari possit. Attamen pterygodio et alis lepidotis observatis vix dubitaveris, quin Lepidopteris sit adnumerandum." From this it is clear that Kolenati was convinced at an early period, although he had not seen the larvæ or pupæ, that the genus *Acentropus* belongs to the Lepidoptera, and to the family Pyralidæ.

On the 4th September, 1854, Mr. Curtis exhibited to the Entomological Society "specimens of *Acentropus Garnonsii* from Glanvilles Wootton, including the apterous female; also a mass of white and very elongated eggs, supposed by Mr. Curtis to have been laid by the specimen exhibited, as they were found near her."

About this time I was myself fortunate enough to be able to throw some light upon the early stages of the insect. In the summers of 1855 and 1856 I captured many males of *Acentropus niveus*, as they were flying over the river, below the Drakelow weir, near Burton-on-Trent. I sought in vain at the time for a clue to the larval habits of the insect. In the summer of 1857 I

was, however, corresponding with Mr. Haliday on this and on other subjects, and he informed me that Kolenati had expressed his suspicions that the Potamogetons were the food-plants of *Acentropus* (see passage quoted above), but that Kolenati had been unable to prove the fact. This notion accorded exactly with the idea I had myself formed from observations on the Trent. I therefore commenced a careful examination of the tufts of *Potamogeton pectinatus* and *P. perfoliatus*, which abound where *A. niveus* had occurred. After repeated visits to the locality, and many searches from my boat—the locality necessitating a long row, and the stream rendering it difficult to moor a boat—I was lucky enough, during the month of August, to discover several pupæ enclosed in cocoons, in the axils of *P. pectinatus* and *P. perfoliatus*. I cut away portions of the plants, and carried the pupæ home in jars of water. I then placed the pupæ in a dish of water containing pebbles, which were made to project above the surface of the water, and covering the whole with a bell-glass, the dish with its contents was placed under the full light of the sun in my garden. On the day following, to my great satisfaction, I found a male *Acentropus* sitting upon one of the stones, it having just escaped from the pupa-case. Mr. Haliday had evinced much anxiety to know more about the insect, and he had previously remarked, “I believe *Acentropus* to be a Lepidopterous insect, but am open to conviction. I do not expect any results from internal anatomy so decisive as those of outward form and clothing, since the *Phryganeæ* closely agree with Lepidoptera in internal structure.” I sent him the pupa-case from which the first *Acentropus* had been bred. He replied, “Your enclosure was *most* interesting, and I rejoice that you have thus early succeeded in bringing such a strong additional (indeed, conclusive) document to bear on the question of the affinities of *Acentropus*. I hope you will further succeed in discovering the larva in its hidden abode.”

I failed to rear any more insects from the pupæ which were reserved for my own use; and floods setting in immediately afterwards rendered it impossible to examine the Potamogetons again during that summer. In July 1858 I again commenced operations, and ultimately succeeded in obtaining larvæ and pupæ; and among them I found a pupa from which emerged the apterous female of

*A. niveus*. At that time I was unaware of Mr. Curtis having found a wingless female, and I was very much surprised to find the apterous specimen in the breeding-glass; but it was subsequently discovered to be very easy to separate the female pupæ from those of the male by the external characters.

I forwarded examples of the pupæ to Mr. Doubleday, asking him to send some to M. Guénée; but the proof, all-conclusive as it was pronounced by most of my friends, failed unaccountably in gaining admission for *Acentropus* into Mr. Doubleday's 'List of British Lepidoptera.' Mr. Stainton has, however, included *Acentropus* in his 'Manual of British Butterflies and Moths,' and has placed it where I first suggested the placing of it, viz. among the Pyralidina, and immediately after the genus *Hydrocampa*. Mr. Newman has latterly expressed a real or a feigned doubt about the lepidopterous nature of the insect, notwithstanding his taking credit in 1857 for having been one of the earliest to predict that it would prove to be a Lepidopteron. This is, however, not more extraordinary than that the same writer should at one time have maintained the genus *Psyche* to be neuropterous!

In December of 1858, Kolenati published in the 'Wiener Entomologische Monatschrift,' p. 381, a paper upon an *Acentropus* which he took, in the year 1846, on the Neva, near St. Petersburg, as mentioned in his 'Genera et Species Trichopterorum,' above alluded to; and he here furnishes us with a full description of his specimens, and representations (Tafel vii.) of the male, with dissections. He gives an amusing account of the difficulties he had to overcome before he reached the objects of his desire. The insects were seated indolently upon the flowers and immature fruit of *Potamogeton perfoliatus*, in a dense patch of that plant, intermingled with *P. heterophyllus*, which grew in the waters of the Neva, near the Island of Crestowsky, at about the distance of twenty paces from the bank of the stream; and to reach this patch of vegetation Kolenati had to swim across the deeper water, holding a net in his mouth, and with two empty opodeldoc bottles in a linen bag tied by a string to his neck. Forty-two specimens of the male insect rewarded his enthusiastic perseverance; but he failed in capturing a female. He, however, saw a female example creeping along a *submerged* stem of a *Potamogeton*; but he does



not supply us with any description of it, and we are consequently left in uncertainty as to what it was like. Struck with the difference between the outline of *Acentropus niveus* as given by Westwood in his 'Introduction to the Modern Classification of Insects,' and that of his own specimens, Kolenati hazards the suggestion that the Russian species is not *niveus*, and on that assumption names it *A. Newæ*. I cannot seize upon any characters in his description by which Kolenati's insect may be distinguished from the British *Acentropus niveus*; but, presuming his drawing of the male insect to be correct (a copy of which drawing is given on Plate VIII. of this work), the conclusion is unavoidable that it is not *A. niveus*.

In the 'Wiener Entomologische Monatschrift' for 1860, p. 55, Kolenati describes an insect under the name of *Acentropus latipennis*, Möschler, a single specimen of which he obtained from Sarepta, near the river Volga, in Russia, but without any knowledge of its habits, and he gives in parallel columns the characters, as *he asserts*, of *A. latipennis* ♀ and of *A. niveus* ♀: but it is manifest the insect he describes as *A. niveus*, and which I suspect is his *A. Newæ*, is of the *male sex*; the comparative characters are therefore useless. Kolenati remarks, that he has sent the specimen to Dr. H. Schäffer to be figured. From this course something may be elicited of a more positive nature. So far as we can yet make out, Kolenati's *A. Newæ* and his *A. latipennis* may be only male and female of the same species.

In June 1861, Mr. M'Lachlan and Dr. Knaggs captured some specimens of an *Acentropus* flying over ponds at Hampstead; and among the specimens so obtained were several females which possessed wings far more ample in size than those of the males.

I have here, at the risk of wearying the reader, brought down the bibliography of the genus *Acentropus*, from the first published description of a species in 1791, to the present time; I will now draw a few conclusions in as concise a manner as I can.

Among the specimens described by authors under the name of *Acentropus niveus*, I believe there are confounded at least three species.

1. *Acentropus niveus* = *A. Garnonsii*, Curtis.—To this species will belong the specimens obtained by Mr. Dale and by Mr. Curtis at

Glanville's Wootton, and by myself at Burton-on-Trent. The male has been well described and figured by Curtis, and it is given on Plate VIII. fig. 1. of this work. The female is apterous, and is furnished with long silky white fringes to its hinder tibiæ; it is figured for the first time on Plate VIII. fig. 2.

2. *Acentropus Hansonii* = *Zancle Hansonii*, Steph.—This species occurs in the neighbourhood of London and at Reading, and is undoubtedly the insect placed by Stephens, without any description, under the genus *Zancle* in his 'Nomenclature.' The males of this species are almost identical with those of *A. niveus*, but appear, from the specimens kindly given to me by Mr. Wormald, to be slightly smaller and with the upper wings somewhat less cuneated; but the difference is so slight, as may be seen from fig. 6, Plate VIII., that if specimens of the two species once become intermixed in the cabinet it is almost impossible to separate them. The female is, however, strikingly different; so far from being apterous, it is furnished with wings of twice the area of those of the male (see fig. 7, Plate VIII.).

3. *Acentropus Newæ*, Kolenati.—This form, from Kolenati's figure, I judge to be distinct; it is copied at fig. 10, Plate VIII. It will there be seen that the insect is smaller than *A. niveus*. The upper and under wings have different relative proportions, and the body is shorter and more hairy, whilst a very definite difference exists in the two blunt teeth on the hinder tibiæ, of which I cannot detect any trace in *A. niveus*. It is probable that *A. latipennis*, Möschler, will prove to be the female of this species.

The larvæ of *A. niveus* may be found when fully fed (I have failed in discovering them earlier), in silken cocoons, which are strengthened by small pieces of the leaves incorporated longitudinally in the fabric, and which are placed in the submerged axils of *Potamogeton perfoliatus* and *P. pectinatus*. The larvæ are of a light-green colour, and, as shown in fig. 1, Plate IX., possess every Lepidopterous character, and make no approach to the Trichopterous type. The pupæ are of the "masked" character, and the external case enables one to see clearly which will produce males and which females (see figs. 2 and 3, Plate IX.). The pupæ exhibit three remarkably prominent spiracles on each side.

The male imago of *A. niveus* sits sluggishly on any object that protrudes from the water where it occurs, or it flies slowly over the surface. I saw it on one occasion deliberately enter the water, and after creeping down a Pondweed stem for an inch or two, it emerged again with unwetted wings. This act was probably done in pursuit of the virgin female. I regret, although I have bred the apterous female, I have never had an opportunity of studying its habits in a state of nature; but, from the long tibial fringes which it possesses, I presume it to be endowed with active swimming and diving powers, to enable it to deposit its eggs upon the food-plant, which, excepting in flowering-time, is almost always totally submerged. For several seasons, owing, I imagine, to floods in July and August during previous successive years, I have been unable to find the insect in its old haunts. I have thus been disappointed in the hope I entertained of being able to complete its history from the egg to the imago, and hence the cause of the delay in giving my observations to the public.

With regard to the position of *Acentropus* in nature, the opinions of entomologists, as I have stated, have varied very widely. The following tabular statement will show the Orders in which authors have placed it at one time or another:—

NEUROPTERA—Olivier, Latreille, and Stephens in 'Nomenclature.'

TRICHOPTERA—Curtis, Stephens in 'Systematic Catalogue of British Insects,' Doubleday, and Guénée.

LEPIDOPTERA—Westwood, Kolenati, Haliday, Newman, and Stainton.

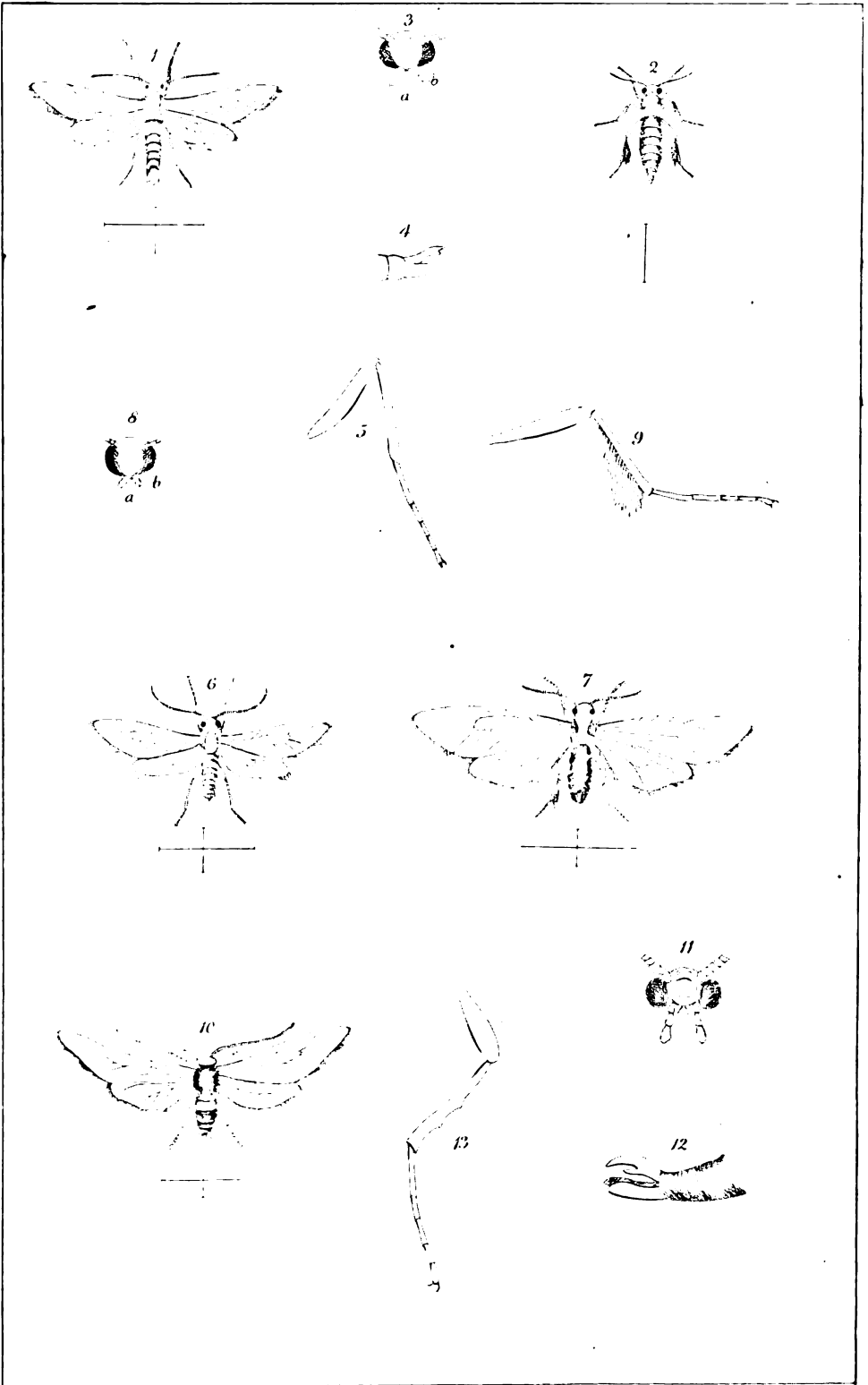
The facts of the case do not any longer admit of doubt that the true place for the genus *Acentropus* is in the order Lepidoptera; but it is not so easy to say in what section of that great order it should be located. Misled by the great similarity in the habits of *A. niveus* to those of the various species of *Hydrocampa*, I at first suggested its being made to follow that genus in the *Pyralidæ*, and it has been so placed in the systematic part of the present work, which has been some time in type; but further consideration of the trophi of the mature insect disposes me to alter that opinion. The absence of spurs on the tibiæ and the abortive state of the maxillæ place *Acentropus* entirely out of accord with the *Pyralidæ*;

and these characteristics of the genus in like manner put it beyond the pale of the *Yponomeutidæ*, or the *Crambidæ*, where Westwood and others have placed it. I am compelled, after long consideration of the problem, to seek for a place for it in the tribe *Bombyces*. It is true, the British and, as far as I know, the European species of *Bombyces* differ widely from *Acentropus*, but it is very possible that some of the small and little-known exotic species may be found, when they shall have been thoroughly examined, to approach much nearer to our genus; at all events, there are two British families of that tribe which are more nearly allied to *Acentropus* than are those of any other tribe. These are the *Hepialidæ* and the *Zeuzeridæ*. With the *Hepialidæ*, *Acentropus* agrees in the general shape of its larvæ, in the absence of spines on the legs of the imago, and in the substitution for them of hair, in the want of a labrum, and in the almost total absence of maxillæ. With the *Zeuzeridæ* it agrees in the shape of larva, small development of maxillæ, and general form of the palpi, which in *Acentropus* may be either labial or maxillary.

Many objections to this classification of *Acentropus* may be brought forward, but I do not see any group in which the genus can be so well placed. Wherever they may be eventually located, the *Acentropidæ* must form a separate and distinct family. I would myself like to see the *Psychidæ* placed in the same section of the *Bombyces*; the *Acentropidæ* would then have neighbours possessing further points of affinity in addition to the absence of maxillæ, viz. in the possession of apterous females and case-bearing larvæ; and they would together form a subsection of the *Bombyces* having many points of structure in common. Against this location of the *Acentropidæ* it may be urged, that the antennæ do not accord in character with the *Zeuzeridæ*, the *Hepialidæ*, or the *Psychidæ*: but the *Hepialidæ* resemble the *Acentropidæ* in the comparative simplicity of this organ much more than they do the other two families; and the grouping would not be more anomalous in this particular than is that of placing the *Tineidæ* with pectinated antennæ in the group of *Tineæ*, which nearly all possess filiform antennæ.

It is a singular fact that the *Acentropidæ*, which resemble so much the Trichoptera in the perfect state, do not approach that order in the least degree in the preliminary stages. This curious





F. Horn & E. Horn

V. Horn

circumstance forms another thread in the inextricable web of partial relationships which prevail throughout nature, and which renders the study of *family groups* so especially instructive and satisfactory; whilst, as soon as we step beyond the limits of family alliances, we are lost in the cross relationships of affinity and analogy that prevail on all hands.

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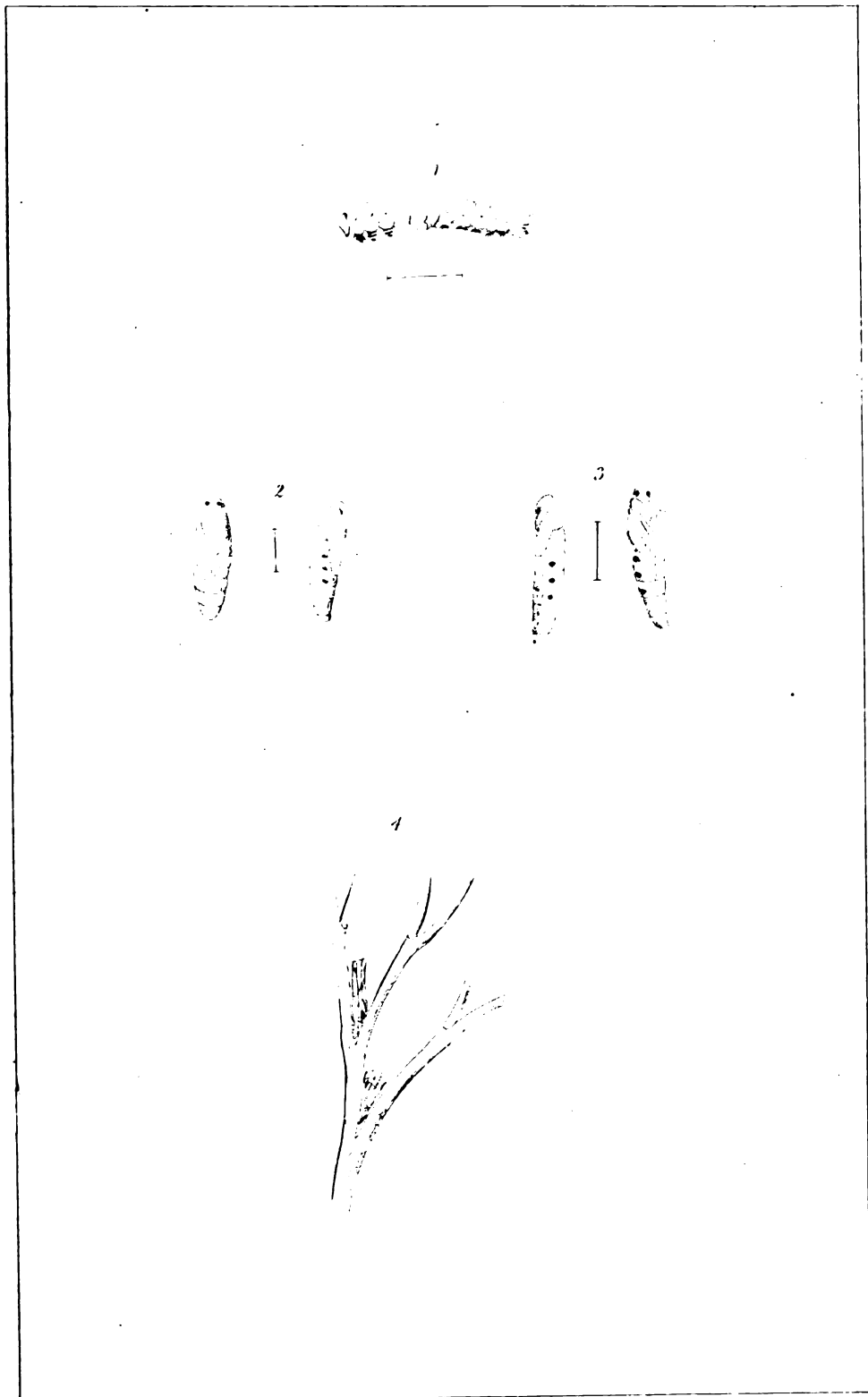
EXPLANATION OF PLATE VIII.

- Fig. 1. *Acentropus niveus*, male.  
 „ 2. „ „ female.  
 „ 3. „ „ head of male.  
     *a.* maxillæ.  
     *b.* palpi.  
 „ 4. „ „ apex of abdomen of male.  
 „ 5. „ „ hinder leg of male.  
 „ 6. *Acentropus Hansonii*, male.  
 „ 7. „ „ female.  
 „ 8. „ „ head of female.  
     *a.* maxillæ.  
     *b.* palpi.  
 „ 9. „ „ hind leg of female.  
 „ 10. *Acentropus Newæ*, male, copied from Kolenati.  
 „ 11. „ „ head of male, copied from Kolenati.  
 „ 12. „ „ apex of abdomen of male, copied from  
     Kolenati.  
 „ 13. „ „ hinder leg of male, copied from Ko-  
     lenati.

## EXPLANATION OF PLATE IX.

- Fig. 1. Larva of *Acentropus niveus*.  
,, 2. Pupa of ,, ,, male.  
,, 3. ,, ,, ,, female.  
,, 4. *Potamogeton pectinatus*, with cocoons of *Acentropus niveus*  
in the axils.





F. B. G. & E. B. G.

W. G. G.

*Acontropus nitens*



## ADDENDA ET CORRIGENDA.

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Page 89. *ARVICOLA PRATENSIS*, *Baillon*. The Bank Vole.

The Rev. H. H. Crewe (see 'Zoologist,' p. 8554) captured, on the 13th of February 1863, six specimens of this species of mouse, in a large heap of rotting vegetation in a wet plantation near Calke Abbey. It may be distinguished from the Field Vole by its shorter body, longer tail, and redder fur. When looked for, it is probable it will not be found to be uncommon in the district.

Page 94. *VIREOSYLVA OLIVACEA*, *Bonap*. See p. 385.

Page 104. *SYRRHAPTES PALLASII*, *Temm*. Pallas's Sand Grouse.

The most remarkable natural-history fact of the year 1863 has been the occurrence in large numbers all over the country of this bird, which previously had been seen in our islands but in one or two instances. Two were killed, out of a covey of about twenty, at Eccleshall in Staffordshire, on the 22nd of May 1863, as mentioned by Mr. Samuel Yates in a communication to 'The Times' newspaper.

Page 111. *CISTUDO EUROPEA*, *Cuv*. See p. 389.

Page 237. Mr. Syme, in the new edition of Sowerby's 'English Botany,' unites *Brassica napus*, *B. campestris*, and *B. rapa* under one species, to which he applies the name of *Brassica polymorpha*. His idea of uniting the three forms under one specific name is a very good one, and quite in accordance with nature; but his selection of the name itself is not, I think, a happy one, inasmuch as *Brassica oleracea*, with its innumerable varieties of cultivated cabbage, broccoli, cauliflower, savoy, winter greens, and Brussels sprouts, is far more polymor-

phous than is the species to which he applies that name. Following Mr. Syme, however, the nomenclature of our wild forms of *Brassica* will stand thus:—

**BRASSICA POLYMORPHA, Syme.**

Variety *NAPUS*, *Linn.* Rape or Cole Seed.

Cultivated fields; not common.

Variety *CAMPESTRIS*, *Linn.* Wild Navew, or Swedish Turnip.

Occasionally found on the borders of fields where "swedes" have grown; apparently not an indigenous form.

Variety *RAPA*, *Linn.* Wild Turnip.

Corn-fields; common, and apparently truly wild.

Page 238. *SINAPIS ARVENSIS*, *Linn.* Charlock.

For "not uncommon" read "very common."

*SINAPIS ALBA*, *Linn.* White Mustard.

This is generally found as a garden weed in this district, but is sometimes introduced with seed into corn-fields.

Page 263. *ONOPORDUM ACANTHIUM*, *Linn.*

Truly wild in Breedon Quarries.

Page 275. *MARRUBIUM VULGARE*, *Linn.*

Breedon Quarries.

Page 297. *FESTUCA OVINA* and *RUBRA* should stand as follows:—

*FESTUCA OVINA*, *Linn.* Sheep's Fescue Grass.

Dry hilly pastures; on the uplands of Derbyshire and Leicestershire.

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Dry pastures; common.

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LONDON, JANUARY 1863.

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