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“ I venture to think the evidence now brought forward, however imperfectly, is at least sufficient to justify the conclusion that there is not a hair or a line, not a spot or a colour, for which there is not a reason—which has not a purpose or a meaning in the economy of Nature ”—*Lord Avebury.*

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## ERRATA.

- Page 57, the bracket-sign after "obtuse" on line 11, should be transferred  
to after "extremity," on line 12.
- „ 70, line 16 from bottom, for "rupum" read "rupium."  
 „ 70, „ 22 „ „ for "Scoptera" read "Seoptera."  
 „ 79, No. 74 ... .. insert "Spilogaster" before "halterata, Stein."  
 „ 126, line 24 from top for "edentato" read "edentata."  
 „ 127, „ 12 „ „ for "E. aurifascia" read "C. aurifascia."  
 „ 145, „ 7 „ „ for "cibliaria" read "cibaria,"  
 „ 147, „ 6 „ bottom, for "(?)" read "146."  
 „ 147, „ 3 „ „ insert a comma at end of line.  
 „ 148, „ 8 „ „ for "retferme" read "renferme."  
 „ 148, „ 3 „ „ for "Meigen,she," read "Meigen'she."  
 „ 148, „ 2 „ „ for "zweiten," read "zweiten."  
 „ 150, „ 18 „ „ insert "\*" before "Oscinis."  
 „ 164, „ 6 „ „ for "Poultou" read "Poulton."  
 „ 227, „ 5 „ top for "densissima" read "densissime."  
 „ 227, „ 6 „ „ for "extrorsum-leviter" read  
 "extrorsum leviter."  
 „ 231, „ 15 „ top delete "\*."  
 „ 232, „ 20 „ „ insert "\*" before "Balioptera."  
 " 233, „ 3 „ bottom, delete "thus."  
 „ 238, „ 27 „ top for "Albula" read "Albulina."

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 EXPLANATION OF PLATES.

- Plate I.—Life-History of *Chrysopa dorsalis* (see pp. 49-56).  
 „ II.—*Barypithes pellucidus*, Boh., and *B. duplicatus*, n. sp.  
 (see pp. 128-132).  
 „ III.—Some interesting British Insects (IV), (see pp. 203-206).  
 „ IIIA.—*Nonagria neurica*, Hb. (see pp. 206, 207).  
 „ IV.—British *Dermoptera* (see pp. 225, 226).  
 Portrait.—G. H. Verrall, F.E.S. (see pp. 262-264).
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[VOLUME XLVII].

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A REVISION OF THE BRITISH SPECIES OF *HALIPLUS*, LATREILLE.

BY JAMES EDWARDS, F.E.S.

The present paper contains, *inter alia*, a segregation of our forms of the *ruficollis* group on the lines indicated by Julius Gerhardt in an admirable paper published by him more than thirty years ago (Zeitschr. für Ent. Breslau, 1877, 34). There he calls particular attention to the advantage to be derived from the use as a differential character, of a certain extremely fine irrorate punctulation found on the elytra of the females. For some reason not easy to understand, subsequent authors, whilst not disputing its existence, have ignored the value of this character. The only British writer who has exhibited a working acquaintance with Gerhardt's paper is Mr. Newbery, but he, unfortunately, only availed himself of it to a very limited extent. For example, in introducing Gerhardt's *H. immaculatus* as British (Ent. Mo. Mag., xliii, 4) he seems to have overlooked the circumstance that his insect from Bury St. Edmund's with the elytra in the female punctulate from the apex to the middle could not well be the same as Gerhardt's *immaculatus*, in which the females have perfectly smooth elytra. I find that the punctulation in question is stronger at the apex than at the base in those species in which it reaches from the apex to the shoulders; in one it becomes gradually evanescent from about the middle forward, and in one is confined to the extreme apex and the apical half of the suture. My experience lends no support to the idea that the females of *Haliphus* are subject to dimorphism. Gerhardt thought that the punctulation when present was confined to the apical half of the elytra; Wehncke, however (Deutsche Ent. Zeitschr., 1880, 224), mentions some species with the elytra punctulate throughout, though he speaks of the female of *ruficollis* as punctulate in the apical half

only, a matter in which his experience differs from my own. I believe, however, that this discrepancy arises from the fact that in the customary dorsal aspect the punctulation is more easily seen on the subapical slope of the elytra; one has to remember that this punctulation consists of very minute depressions, and that unless the lighting is such that the walls of the depressions cast a shadow, the punctulation remains invisible, in short, the incidence of the light is of as much importance as the degree of magnification. Mr. Newbery (*l.c.*) says that the females (presumably of all the species in the group) have the elytra "alutaceous." The latter term, which I understand to express the condition found on the interspaces of the thorax in certain species of *Laccobius*, *i.e.*, covered with minute cracks like mud or mosaic (Rye, Brit. Beetles, 1866, 16), is quite inapplicable to any female *Haliphus* with which I am acquainted; its use probably arose through incautious adoption from Bedel, Faune Col. Bass. Seine, i, 222, 223, where "alutacée" replaces the "äusserst feine Punktirung" and "subtilissime punctulatis" of Gerhardt. Notwithstanding M. Bedel's statement that he had a series of females exhibiting every degree of elytral punctulation from presence to absence, it appeared to the writer that Gerhardt's work might be found worthy of investigation.

Exceptionally it may become necessary to examine the male genitalia, in which case one need only concern oneself with the ædeagus and its attendant side-lobes. The ædeagus is more or less characteristic in shape for each species, and lies, when *in situ* and at rest, with its concave edge to the left of the insect. The right side-lobe is merely a concave scale, usually oblong or subtriangular with rounded apex. The left side-lobe has a more complicated contour; viewed from the outside it is usually elongate triangular with a long curved spine at the apex, and bears on the distal half of its left edge a fringe of long, more or less coherent, hair-like strips of delicate membrane; in *H. immaculatus* there is, instead of the membranous fringe, a large triangular tooth; in *H. striatus* also the fringe is wanting. I am indebted to Dr. Joy for the opportunity to compare with my own preparations his dissections of the male genitalia in *H. ruficollis*, *fluvialtilis*, *immaculatus*, and *welckeï*; the two latter are especially interesting, the *immaculatus* being a specimen from Colwall of the species distributed by Mr. Tomlin under that name, and the *welckeï* one of the specimens from Bury St. Edmund's determined as *immaculatus*, Gerh., by Mr. Newbery. I am also indebted to the latter for the loan of a set of specimens illustrative of his paper before referred to, as well as his separate copy of Gerhardt's paper,



now difficult to obtain, and much helpful correspondence. Dr. Sharp placed unreservedly at my disposal an enormous amount of material, a good deal of it dating back to the sixties, and both Mr. Champion and Commander Walker have, as usual, been laid under contribution.

The following is a table of our species of the genus:—

- 1 (6) Elytra with subregular rows of shallow punctures.
- 2 (3) Base of thorax without a longitudinal impression opposite the fourth row of elytral punctures. Prosternum not margined, coarsely punctured.....*obliquus*, Fabr.
- 3 (2) Base of thorax with a longitudinal impression, bounded outwardly by a distinct ridge, opposite the fourth row of elytral punctures. Prosternum margined, finely punctured.
- 4 (5) Pale yellow, black lines on elytra obsolete on the basal fourth. Thorax little more than two and a-half times as broad as long, less contracted in front .....*pollens*, Fowler.
- 5 (4) Usually red-yellow, black lines on the elytra complete to the base. Thorax at least three times as broad as long, more strongly narrowed in front.....*confinis*, Steph.
- 6 (1) Elytra with regular rows of deep punctures.
- 7 (16) Base of thorax without a longitudinal impression on each side opposite the fourth row of elytral punctures.
- 8 (15) A row of large punctures across the base of the thorax.
- 9 (12) Elytra without dark markings. Front edge of thorax not roundly produced in the middle.
- 10 (11) Head large, more than half as wide as the base of the thorax. Body subelliptic with parallel sides. Front edge of thorax biconcave, produced into a slight angle in the middle .....*mucronatus*, Steph.
- 11 (10) Head moderate, less than half as wide as the base of the thorax. Body widest before middle of elytra. Front edge of thorax not produced in the middle .....*flavicollis*, Sturm.
- 12 (9) Elytra with dark spots. Front edge of thorax sinuate, slightly roundly produced in the middle.
- 13 (14) Elytra with the suture and a variable number of oblong spots which are situate on the interstices and do not, any of them, touch the suture, blackish. Sides of thorax straight.....*fulvus*, Fabr.
- 14 (13) Elytra with the suture and a variable number of irregular spots which are not markedly oblong, and some of which touch the suture, blackish. Sides of thorax distinctly convex...  
*variegatus*, Sturm.
- 15 (8) Punctures on the base of the thorax but little larger than those across the apex. Sides of thorax straight and forming a distinct angle with the outline of the elytra. The latter with more or less interrupted dark lines.....*luminatus*, Schall.

- 16 (7) Base of thorax with a longitudinal impression on each side opposite the fourth row of elytral punctures.
- 17 (30) Head, in greater part, pale. Thoracic impression not falcate nor reaching the half-length of the thorax. Metasternum simple.
- 18 (25) Elytra with the dark lines 1—4 unequal in width distinctly widened on the disc, 5—7 interrupted at the base, in the middle, and at the apex, and often confluent.
- 19 (24) Thorax apparently more than twice as broad as long, the sides strongly convergent in front. Elytra evidently widest before the middle.
- 20 (23) Elytral interstices in the female, wholly or in part, with an extremely fine irrorate punctulation.
- 21 (22) Elytral interstices in the female punctulate throughout. Usually a little larger than *heydeni* and much less rapidly narrowed behind. Inner claw on front tarsi of male about two-thirds as long as the outer, wider and more strongly curved .....*ruficollis*, De Geer.
- 22 (21) Elytral interstices in the female punctulate across the apex and sometimes along the distal half of the suture. Similar to *ruficollis*, but scarcely so wide at the shoulders and more gradually narrowed behind, dark red-yellow in colour with the black markings on the elytra more pronounced .....*fulvicollis*, Er.
- 23 (20) Elytral interstices in the female without punctulation. Generally smaller than *ruficollis*, comparatively wider at the shoulders and more rapidly narrowed behind. Claws on front tarsi of male sub-similar .....*heydeni*, Wehncke.
- 24 (19) Thorax not more than twice as broad as long, the sides moderately convergent in front. Elytra widest in the middle, with an oblique pale band from the shoulder to the suture, followed by another oblique band of approximately equal width but composed of short, black longitudinal lines.....*fluvialis*, Aubé.
- 25 (18) Elytra with the dark lines 1—4 of uniform width throughout, 5—7 less decidedly, or not at all, interrupted.
- 26 (27) Sides of elytra usually subparallel, as in *H lineatocollis*. Elytral interstices of female punctulate throughout. Left side-lobe of aedeagus subfalcate, without a fringe on its concave edge....  
*striatus*, Sharp.
- 27 (26) Sides of elytra continuously curved.
- 28 (29) Elytral interstices of female punctulate on the apical half, the punctulation becoming gradually evanescent about the middle. Left side-lobe of aedeagus with a fringe of long, more or less coherent, hair-like strips of delicate membrane on the distal half of its concave edge. Aedeagus obtusely rounded at the apex with a subrectangular projection near the apical third of its convex edge...  
*wehnckeii*, Gerh.

- 29 (28) Elytral interstices of female without punctulation. Left side-lobe of aedeagus with a large triangular tooth near the middle of its concave edge. Aedeagus narrowly pointed, its convex edge a little subangulately dilated near the middle .....*immaculatus*, Gerh.
- 30 (17) Head black or blackish. Thoracic impression falcate reaching at least to the half-length of the thorax. Metasternum with two straight, divergent keels .....*lineatocollis*, Marsh.

I have been influenced in my decision to regard all the above as separate species by the following considerations. Whilst it may reasonably be doubted whether any universally acceptable definition of the term species exists, it is certain that in practice the majority of naturalists at the present day use this term in the Linnæan sense, a conception essentially based on the idea of common descent or family relationship. Under these circumstances it appears desirable to use the term variety, which at present cannot be said to have any definite signification, also in the Linnæan sense, *i.e.*, as relating to something *within* the species. To take a concrete example:—*H. heydeni* is usually put as a variety of *ruficollis*; but, having regard to the characters which *heydeni* exhibits, is it consistent with human experience to suppose that amongst the offspring of *ruficollis* parents some will be *ruficollis* and some *heydeni*? If it is not, then *heydeni* comes within the Linnæan idea of a species and should be treated accordingly. *Haliphi* do not acquire their full colouring for some time after they have reached the imago state, and this circumstance, which is particularly noticeable in autumn-caught specimens, is apt to lead to errors of determination if colour and pattern be unduly relied on.

*H. obliquus*, Fabr.—I have taken this species not uncommonly in the Norwich district; in the Cotswold district it is very common. The black markings on the elytra vary considerably by way of exaggeration and reduction.

*H. pallens*, Fowler (*H. confinis* var. *pallens*, Fowler, Col. Brit. Isl., i, 153).—This species has the ground-colour of the same pale yellow as *obliquus*, from which it differs in the possession of a longitudinal impression, bounded outwardly by a distinct ridge, on the base of the thorax opposite the fourth row of elytral punctures. The black markings on the elytra somewhat resemble those of *obliquus* at first sight, but the four inner lines are not widely interrupted behind the middle as in *obliquus*; the suture and base of elytra are narrowly

black. From *confinis* it differs in its paler colour and narrower body, the thorax is longer in proportion to its width, and the pattern on the elytra is quite different. Fowler's illustration (Pl. 23, fig. 4) is not characteristic, the body is far too much narrowed in front. I have seen five examples of this, all identical in colour, contour, and markings; a ♂ and ♀ from Dr. Sharp ex coll. McNab, which according to a record in the Irish National Museum, where McNab's collection went, were received by him from Andrew Murray in 1861; a ♂ and ♀ ex coll. Walker, and a ♀ kindly given to me by Mr. E. A. Waterhouse; the three last-named specimens having come from G. R. Waterhouse's collection. Dr. Sharp thinks it likely that the McNab examples, like Power's, came from Loch Leven. Whether this insect is the same as that described by Bold (Ent. Mo. Mag., iv, 284) as *H. varius*, Nicolai, cannot now be satisfactorily determined; but, except as affecting a detail of local distribution, the circumstance is quite immaterial. Dr. Fowler had not seen Bold's specimens and consequently could merely state his belief that the insects in Dr. Power's and Dr. Sharp's collections under var. *varius* were identical with Bold's *varius*. E. C. Rye, to whom Bold had sent specimens, recorded his inability to consider them anything but *confinis*, var. I have seen two specimens now in Bold's collection and bearing a blue ticket on which is written *varius*, in handwriting said to be his; these are quite ordinary specimens of *confinis*, and I am assured by the present custodian of the collection, Mr. E. Leonard Gill, M.Sc., of the Hancock Museum, Newcastle-on-Tyne, that he has no reason to doubt that these are the specimens which Bold intended to represent his *H. varius*. I am informed by Mr. E. A. Waterhouse that his father had a number of *H. pallens*, all of which he believes came from Bold.

*H. confinis*, Steph.—In my experience this species varies very little. I have seen ex coll. Champion a specimen from Fleet, Hants, which resembles *pallens* in ground-colour and to a limited extent in shape, but the proportions of the thorax and the pattern on the elytra are those proper to *confinis*.

*H. macromatus*, Steph.—I do not know this species in life; amongst other specimens from recorded localities, I have seen, ex coll. Champion, one from Southsea, Hants. Mr. Champion has also taken it at Cuenca, Spain.

*H. flavicollis*, Sturm.—Very common in hill-ponds in the Cotswold district. I have never seen a specimen with any trace of the two dark

spots on the middle of the elytra which are said to occur sometimes in this species.

*H. fulvus*, Fabr.—I have taken this species at St. Faith's, Horsford, Horning, and Brandon, in Norfolk; it has not been recorded from Gloucestershire.

*H. variegatus*, Sturm.—This I have taken in Ranworth and Brandon in Norfolk, as well as at Wicken.

*H. laminatus*, Schall. (*cinereus*, Aubé).—In elytral pattern this species resembles *fluviatilis*, from which it differs in the more decided angle at the junction of the outline of the thorax and elytra as seen from above (not from the side as Fowler has it). The male characters are very distinctive; the claws on the front tarsi are very similar; on the middle tarsi the basal joint is produced at the apex beneath into a shovel-shaped process which reaches the base of the third joint, the second and third joints are very short, the two together not exceeding the fourth joint in length. The species is not uncommon in hill-ponds in the Cotswold district. In coll. Champion is a specimen from Sandown, I. W., in which the femora, the upper-side of the head from the half-length of the eyes forward, and the upper-side of the four basal joints of the antennæ are piceous; the tibiæ and tarsi also are darker than usual.

*H. ruficollis*, De Geer.—Of this abundant species I have seen specimens from various localities ranging from Rannoch to the New Forest.

*H. fulvicollis*, Er.—Similar to *H. ruficollis*, but scarcely so wide at the shoulders and more gradually narrowed behind, the ground colour dark red-yellow (fulvous), the black markings on the elytra more pronounced, and the punctulation of the elytra in the females confined to the apex and the distal half of the suture. The prosternum is sparingly and coarsely punctured, grooved down the middle of the front half, flat behind. Morden, Surrey, the original *Acylophorus* locality, Sept. 23rd, 1864; Cambridge, Sept. 13th, 1868 (Dr. Sharp); Isle of Sheppey, Nov. 2nd, 1873 (J. J. Walker). The English specimens, which are all females, agree with *H. fulvicollis* from Eisleben, received from Herr Schulz of Hamburg; from which circumstance I conclude that the small amount of punctulation on the elytra of the females was overlooked by Gerhardt and Wehneke, who speak of the elytra as without punctulation. Through the kindness of Mr. Champion I have also examined a female from Italy

sent by Herr Ganglbauer under the name of *H. fulvicollis*; on the upper-side this agrees with the female from Eisleben, save that the elytra are absolutely without punctulation, but the prosternum is flat and smooth with distinct raised side-margins which are separated from the disc by an impressed line, and the specimen therefore doubtless belongs to *H. furcatus*, Seidl., which Ganglbauer puts as a variety of *fulvicollis*, Er. The genitalia of the Eisleben male are similar to those of *ruficollis*. One reads of *H. fulvicollis*, Er., that the markings on the elytra are similar to those of *variegatus*, but in the specimens seen by me they are, though more pronounced, of exactly the same character as in *ruficollis*, and not independent dark spots such as one finds in *variegatus*.

*H. heydeni*, Wehncke (*ruficollis* pars, Newbery, *see spec. comm.*).—Of this very distinct and easily recognised species I have seen specimens from Holme Bush, Brighton, New Forest, Stony Stratford, and Leicester, in Dr. Sharp's collection, from Hampstead ex coll. Newbery, and from Lee, in coll. Champion. It is very abundant in hill-ponds in the Cotswold district, and I have taken it at Horning. I believe that it is generally distributed, but passed over by collectors as small *ruficollis*. I have not met with *H. multipunctatus*, Wehncke, from North Germany, which its author distinguishes from *ruficollis* by its broader form, stronger rows of elytral punctures, a transverse impression on the base of the thorax, and the smooth elytra of the female. Seidlitz separates this from *heydeni* by the thoracic impression straight and sharply defined on the inner as well as the outer side, the channel of the prosternum deep and smooth continued throughout its entire length, and the very broad form, the elytra being only a little longer than broad, and says that it is very rare in Germany.

*H. fluvialilis*, Aubé.—I have taken this species commonly both in Norfolk and in the Cotswold district, quite as frequently in ponds as in streams. The thoracic impression is a small oblong-oval pit about one-fifth as long as the thorax, and is sometimes reduced to a mere puncture. The females of this species exhibit the elytral punctulation very clearly, the surface in some examples being appreciably dull. Some specimens are much less regularly elliptic than others. Corstorphine Hills, 17.7.65 (*D. Sharp*); Holy Island, Northumberland, 12.8.73 (*J. J. Walker*). There is in coll. Champion a quite ordinary male of this species from Pomerania sent by Reitter as *H. immaculatus*, Gerh.

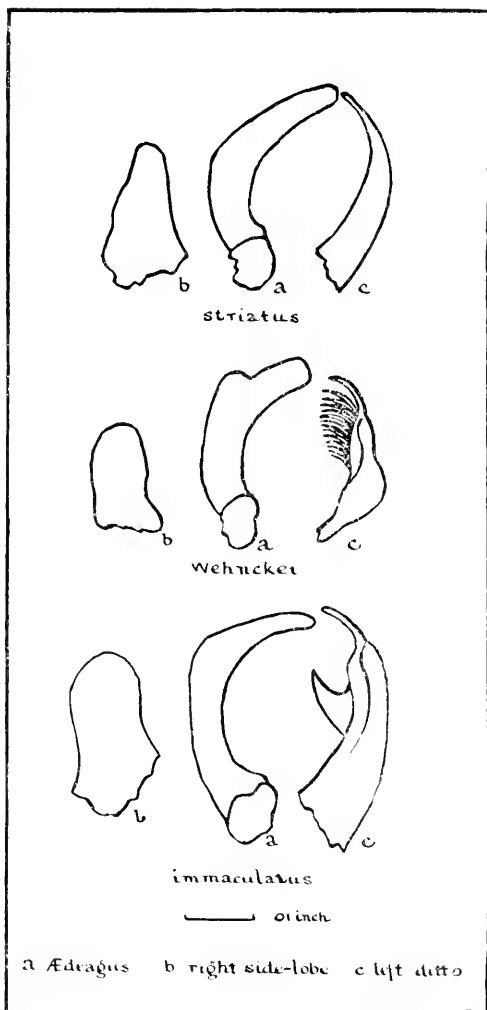
*H. striatus*, Sharp.—Besides a number of the original specimens from near Dumfries I have seen three females from Hartlepool ex coll.

Joy. The Cat. Col. Eur., 1906, has *striatus*, Wehncke, from Sweden, Finland, and North Germany, regardless of the fact that Wehncke (Deutsche Ent. Zeitschr., xxiv, 223, 224, 1880) considered that he was dealing with *striatus*, Sharp, from Scotland, which, however, he puts in a section characterised by an even prosternum, whilst the prosternum of our insect is distinctly grooved. Everts (Col. Neerl., i, 111, note) says that *striatus*, Sharp, and *immaculatus*, Gerh., are synonyms, but as he describes the elytra of the female as entirely smooth it is clear that he did not know our insect. The diagram of the male genitalia of this species is based on a specimen taken by Dr. Sharp on the shore, Kirkconnell, Dumfries, August 26th, 1868.

*H. wehncke*, Gerh. (*immaculatus*, Newbery, *sec. spec. comm.*).—To this species belong the specimens from Bury St. Edmund's on which Mr. Newbery introduced *immaculatus*, Gerh. It is very common in hill-ponds in the Cotswold district, and I have taken it at Whitwell Common, Felthorpe, and Brundall in Norfolk. There are two specimens without locality in Dr. Sharp's collection. Specimens which have not acquired their full colour might be mistaken for *fluviatilis*. The diagram of the male genitalia of this species is based on a specimen from Bury St. Edmund's, dissected by Dr. Joy.

*H. immaculatus*, Gerh., *nee* Newbery (*l.c.*).—I have seen this species from Stony Stratford (*D. Sharp*); Braunton (*Champion, De la Garde*); Colwall (*Tomlin*); Campbeltown, Isle of Sheppey, Deal (*J. J. Walker*); Sandown, I. W., Lee, Kent (*Champion*); and have taken it near Norwich myself. It is not easy to distinguish with certainty between males of this species and the same sex of *wehncke* without reference to the genitalia, but there is a tendency in *immaculatus* for the elytral punctures forming the apex of the ninth row to become merged in a black marking; this tendency is absent in *wehncke* so far as I have observed. This circumstance is not altogether trivial; by its means I have several times been able to accurately determine beforehand what form of genitalia a given specimen would exhibit. The females, of course, present no difficulty. British specimens agree with a female form from Herr Ganglbauer labelled "*immaculatus*, Gerh. Type, Liegnitz."

*H. lineatocollis*, Marsh.—This ubiquitous species I have taken in streams swift enough to accommodate *Brychius elevarius* as well as in ponds. In coll. De la Garde there is an entirely pale specimen only 2.5 mm. long.



Colesborne, Cheltenham :

November, 1910.

TWO SPECIES OF COLEOPTERA NEW TO SCIENCE.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

*THINOBIVS BICOLOR, sp. nov.*

Closely resembles *T. linearis*, Kr., but differs from it in its distinctly broader and less parallel form, conspicuously longer antennae, more transverse thorax, and more distinct posterior angles of the same, longer and broader



elytra, and finer punctuation of the upper parts. Head and thorax fuscous, or dark reddish-brown, elytra testaceous, hind body dark fuscous, upper surface clothed with very fine pubescence; head transverse, very slightly broader than thorax in ♂, about as broad in ♀, slightly widened towards the base, with two distinct furrows in front and two shallow fovee behind these, very finely and closely punctured; antennae testaceous, long, reaching to the apical third of the elytra, 1st and 2nd joints long, 3rd shorter, the 2nd much longer than broad, 4th and 5th slightly longer than broad, 6th and 8th about as long as broad, 9th and 10th considerably broader than 8th, about as long as broad, last joint very slightly broader and one-third longer than penultimate; thorax transverse, distinctly narrower than elytra, slightly contracted behind, posterior angles traceable, very finely and closely punctured, shining; elytra rather long, about twice as long as thorax, somewhat dull, very finely and closely punctured; hind body rather broad, more distinctly and less closely punctured than thorax and elytra; legs testaceous, tibiae strongly widened in the centre. Length, 1.7 mm.

The broader and less parallel form and longer antennae give this species a distinctive appearance from *T. linearis*, from which it differs in other respects than those given above in having the head relatively broader and the fovea on each side of the vertex more distinct; the elytra of a lighter testaceous colour (especially when the insect is alive) and broader in proportion to the thorax, and the legs more robust.

I took three specimens of *T. bicolor* on the banks of the River Truim at Dalwhinnie, Inverness-shire, on May 1st, 1910. They occurred in company with *Atheta fragilis*, Kr., under one or two large stones at the edge of the water, which, two days before, had been completely submerged.

#### ANISOTOMA DAVIDIANA, *sp. nov.*

Allied to *A. dubia*, Kugel., but broader and more convex, the antennae shorter, the head more strongly punctured, the thorax broadest at the base the scutellum much larger, and the striae of the elytra more finely and closely punctured, the third distinctly sinuate in the centre. Oval, strongly convex, ferruginous, head and thorax darker, often fuscous; head rather strongly punctured, four larger punctures on forehead indistinct, or merged into one on each side of the middle line; antennae rather short, testaceous, with the club fuscous, the latter rather narrow, with the last joint about as broad as the penultimate; thorax broadest at the base, posterior angles blunt, base truncate, finely and moderately diffusely punctured; scutellum large, thickly and strongly punctured; elytra rather short, rounded at the sides, striae with fine and very closely set punctures, third stria distinctly sinuate outwards in the middle, fourth stria sometimes very slightly sinuate, first stria not reaching the base, but ending at the side of the scutellum about  $\frac{1}{4}$  to  $\frac{1}{3}$  from its base, interstices distinctly and not very finely punctured; legs testaceous, tibiae

strongly widened towards apex. ♂. Posterior femora furnished at apex with a small blunt tooth; posterior tibiae very feebly bisinuate, rather strongly curved inwards at apex. Length, 2.3—3 mm.

In *A. dubia* the thorax is distinctly narrowed before the base; the scutellum is much smaller than in *A. davidiana*, and the first stria reaches the base of the elytra at some distance from the scutellum. The third stria is sometimes very slightly sinuate. In the shape of the thorax *A. davidiana* resembles *A. scita* and *A. ovalis*. *A. scita* has longer antennae, a smaller scutellum, much less closely punctured striae, and the 3rd-5th striae strongly sinuate. *A. ovalis* is rather more elongate, and has much longer antennae, the third stria of the elytra straight, and the interstices more finely punctured. It, however, agrees with *A. davidiana* in having a large scutellum, and the first stria ending at its side.

*A. davidiana* is probably fairly generally distributed in England. I have seen it from Southport, Deal, and near Llancillo. It is curious that such a very distinct species should have so long been confounded with *A. dubia*. Some species of *Coleoptera* get a reputation for being "very variable," and so no one seriously tries to separate the various forms, several of which may be perfectly good species. It may be that *A. davidiana* is identical with the var. *bicolor*, Schaum, of *A. dubia*, but it is impossible from the description of this form to decide if this is the case.

Bradfield: November 6th, 1910.

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## ALGERIAN MICROLEPIDOPTERA.

BY THE RIGHT HON. LORD WALSLINGHAM, M.A., LL.D., F.R.S., &c

(Continued from Vol. XLIII, p. 195).

### GELECHIADAE.

3031. LITA Tr.

27001. LITA GECKO, sp. n.

*Antennae* white, with distinct black annulations. *Palpi* white, with two black rings on the terminal joint, one at the base the other before the apex. *Head* and *Thorax* white, the latter sprinkled with black scales. *Forewings* white, sprinkled with black scales which are assembled in a reduplicated spot close to the base, a spot on the fold a little beyond it, a costal spot at one-fourth attenuated downward to the fold, an indistinct shade-band across the middle, not reaching the dorsum, and beyond this a profuse sprinkling along the costa and around the apex and termen, also through the hoary white cilia;

in a small spot at the apex are a few ferruginous scales and two larger ferruginous spots are found, one before and one beyond the middle, the first slightly crossing the fold, the second at the end of the cell, these are both somewhat sprinkled with black. *Exp. al.* 8-11 mm. *Hindwings* silvery bluish white; cilia very pale brownish cinereous. *Abdomen* ochreous at the base and on the anal segment, with a broad pale greyish band between. *Legs* white, with narrow black tarsal annulations.

*Type* ♂ (96535); ♀ (96150) Mus. Wlsm., B.M.\*

*Hab.*: ALGERIA: Biskra, 1-21.IV.1903 (Wlsm.); Hammam-es-Sakahin, 2-23.IV.1904, ⊕ *Anabasis articulata*, 27.XII—30.I.1904 (Wlsm.). Thirty-six specimens.

The larva mines the leading articulations of *Anabasis articulata*: it is of a reddish white colour, with pink bands across the meso- and meta-nota, reproduced more faintly on the adjacent abdominal segments; the head is pale brown, and there is no visible pronotal plate.

*Gelechia gecko* and *parvipulex* are extremely close to each other, and I have bred both from *Anabasis articulata*, failing to notice that there were two distinct larvae, for they cannot of course be confused with the *Seythris* larva which spins its slender webs among the shoots. It is of course possible that the one larva which produced *parvipulex* in my three bottles of *Anabasis* may have been accidentally introduced. The palpi of *gecko* have the terminal joint somewhat shorter and stouter than that of *parvipulex*, and with two distinct black annulations, whereas in *parvipulex* the terminal joint is more slender and acuminate, with but one distinct annulation, moreover, the costal streak at one-fourth from the base is invariably oblique in *parvipulex*, and usually reverting upward at its apex to a semidetached spot a little beyond it. In *gecko*, on the contrary, this streak is much more erect, not reverting upward at its apex, although sometimes partially blending with a brownish spot outside its lower extremity. The antennae are also somewhat more distinctly annulated in *gecko* and the average size is a little larger, the whole insect having a greyer and more powdery appearance.

#### 2700·2. LITA PARVIPULEX, sp. n.

*Antennae* brown, with whitish ochreous annulations. *Palpi* creamy white. *Head* and *Thorax* creamy whitish. *Forewings* short, lanceolate, subacute; creamy white, specked and spotted with dark amber-brown; there is a group of three spots forming a triangle at the base, two at half the wing-width, and a third, forming the apex, on the costa at about one-fourth; an oblique

\* The Walsingham Collections were transferred to the British Museum, April 1st, 1910.—  
JNO. HARTLEY DURRANT.

streak, apparently composed of two or more dark spots, descends obliquely outward from the costa, reaching to the fold; scarcely separated from its outer edge is another spot on the disc before the middle, and remote from this is another at the end of the cell, the costa being slightly shaded with umber-brown speckling above and before it; at the apex and along the termen is a shade of profuse umber-brown speckling, extending partially into the brownish grey cilia which become whitish about the apex. *Exp. al.* 8-11 mm. *Hindwings* pale blue grey; cilia brownish grey. *Abdomen* brownish fuscous, paler at its base and apex. *Legs* creamy whitish, the tarsi with one or two dark spots.

*Type* ♀ (96483); ♂ (96346) *El-Kantara*, Mus. Wlsm., B.M.

*Hab.*: ALGERIA: Biskra, 27.III—5.IV.1894 (*Eaton*), 28.II—11.IV.1903 (*Wlsm.*); Hammam-es-Salahin, 5.III—13.IV.1904, ⊕ *Anabasis articulata*, 10.II, ex. 12.IV.1904 (*Wlsm.*); *El-Kantara*, 10-20.V.1903 (*Wlsm.*). Thirty-eight specimens.

### HYPONOMEUTIDAE.

#### 275-1. GALACTICA, gn. n.

(γαλακτικός = milk-white).

*Type*: GALACTICA CARADJAE, Wlsm.

*Antennae*  $\frac{1}{2}$ , simple; basal joint with rather fugitive pecten. *Labial Palpi* very short, projecting; terminal joint shorter than median. *Maxillary Palpi* obsolete. *Haustellum* long, naked. *Eyes* large. *Head* small, smooth. *Thorax* smooth. *Forewings* rather short, with slightly rounded costa, obtuse apex and oblique, not sinuate termen: *neuration* 12 veins; 7-8 short-stalked, or connate, 7 to termen; 2 from near angle of cell; 4-5 closely approximate at base, rest separate; internal radial from between 11 and 10 to between 6 and 7, media from between 5 and 6 to near base; a costal stigma from 12 to 10. *Hindwings* 1, narrowing outwardly, apex rounded, tornus obsolete; with a slight, short, fenestrum at base below cell; cilia  $\frac{1}{2}$ ; *neuration* 8 veins; 3-4 stalked from the pointed lower extremity of the cell, which thence recedes rapidly to internal radial immediately below 7, leaving 6 much shorter than 7 owing to the extreme obliquity of the discoidal; 6-7 separate, remote. *Abdomen* rather stout. *Legs*: hind tibiae not hairy.

Most nearly allied to *Calantica* Z., but without the long clothing of the head, and the basal joint of the antennae has only a fugitive pecten instead of a strong tuft; the palpi also are shorter, and veins FW: 7-8 are short-stalked, or connate, not separate; but *Calantica* may eventually present some variation in this respect. *Scythropia* Hb. differs in having the veins of the forewings more evenly separate, and HW: 3-4 are separate, not stalked as in *Calantica* and *Galactica*. All three genera agree in the shape of the cell in the hindwings, and in the presence of a costal stigma in the forewings.

## 23451. GALACTICA CARADJAE, sp. n.

*Antennae* white. *Palpi* dirty white. *Head* and *Thorax* greyish white. *Forewings* greyish white, with a slight rosy tinge at some angles, very sparsely sprinkled with black scales, a patch of these resting on the middle of the fold, and a smaller patch a little before its outer extremity; the black scales are distributed very sparsely along the costa, chiefly towards the base, on either side of the fold before the black plical patch, and again between this and the smaller patch beyond it, some reaching as far as the end of the cell; there are also a few along the extreme termen, but not at the apex or tornus; cilia greyish white. *Exp. al.* 13 mm. *Hindwings* shining, silvery white, with a slight greyish tinge; cilia concolorous. *Abdomen* greyish. *Legs* white.

*Type* ♀ (97923) Mus. Wlsm., B.M. [*PT.* (3984 Wlsm. Det.) Mus. Caradja].

*Hab.*: ALGERIA: Biskra, 15.IV.1904 (Wlsm.), 1902 (Korb). Three specimens.

(To be continued).

*Coleoptera in the Plymouth District.*—During the past autumn the following noteworthy species of *Coleoptera* have occurred to me in the Plymouth district. Unfortunately the captures for the most part are of single specimens only, and continued search at the time, subsequent visits to the localities, and even attempts at trapping, all failed to obtain further examples. Species with an asterisk are new records for the county. *Amara consularis*, Duft. (one), on path, Tavy Valley; *\*Ilybius aenescens*, Thoms. (one), Shaugh, Dartmoor; *Rhantus pulverosus*, Steph. (one), Shaugh—not taken by me previously for twenty years, the marsh at Tothill where it used to occur having been long since filled in for town improvements; *Hydroporus melanarius*, Sturm (one), Shaugh; *H. marginatus*, Duft. (one), Tavy Valley. Perhaps I could have taken more of this species if I had recognised it, but it was taken at dusk just before leaving to catch the train for home. *Philonthus corruscus*, Grav. (one), in carrion trap, near Horrabridge Station; *\*P. thermarum*, Aubé (four), cut grass, Yelverton; *\*Homalium exiguum*, Gyll. (one), and *\*Aphodius consputus*, Cr. (one) dead rabbit, Tavy Valley; *Cryptophagus bicolor*, Sturm (one), and *\*Monotoma longicollis*, Gyll. (in some numbers), in cut grass, Yelverton.

I have also to record a few older captures, as follows:—July, 1897, *\*Philonthus splendidulus*, Grav. (one), running on the pavement; March, 1900, *\*Monotoma brevicollis*, Aubé (two), in manure heap, Lipson Marsh—locality now absorbed for town improvements; July, 1902, *\*Apion schönherri*, Boh. (one), Bovisand; May, 1909, *\*Choleva coracina*, Keln. (several), Awns and Dendles; Sept., *\*Limnius rivularis*, Rosenh. (two), in the Avon, above S. Brent, Dartmoor; June, 1910, *Ceuthorrhynchus parvulus*, Bris. (eleven), near Kingsand (Cornwall). As usual, I am indebted to Mr. E. A. Newbery for kindly looking at some of the species for me.—JAMES H. KEYS, 2, Freedom Park Villas, Plymouth: November, 1910.

*Cryptophagus fowleri*, Joy, from France.—Captain Deville has sent me a *Cryptophagus* which he suggested might be *C. fowleri*. This it undoubtedly is. It was taken in the Forest of Haute Séve, near Fougères, on a felled oak.—NORMAN H. JOY, Bradfield, Berks: November 10th, 1910.

*Cryptophagus fowleri*, Joy, at Oxford.—On reading Dr. Joy's paper on *Cryptophagus fowleri*, p. 205, Ent. Mo. Mag., it occurred to me that I had several specimens of an unnamed *Cryptophagus* that might possibly be the new species. Having tried them with the description of *C. fowleri* and in comparison with the allied forms, I thought they agreed so well with Mr. Joy's new species that I would ask him to examine them for me. This he very kindly did, and returned them all (4 specimens) as his *C. fowleri*. Of these I got one in dry touch-wood in a dead elm at Water Eaton, Oxon, 1.xi.09; one in wood refuse under a dead hedge at Enslow Bridge, Oxon, 4.vi.10; one from Weston-on-the-Green, 24.iv.10; and a specimen from Wytham, Berks, 11.x.08; the last two were probably swept. From the occurrence of *C. fowleri* in four different localities, miles apart, in the Oxford district, it is apparently fairly widely distributed.—J. COLLINS, Oxford University Museum: Nov. 18th, 1910.

*Note on the Meloid-genus Hornia, Riley, and its allies.*—My friend, Manuel Martinez de la Escalera, during a visit to Horsell last week, showed me two living examples of a remarkable Sitarid he had just bred from pupæ found in the cells of an *Anthophora* in walls at Mogador, Morocco. This insect has recently been described by him as a new genus and species under the name *Allendesalazaria nymphoides* (Boletín Soc. Españ. Hist. Nat., 1910, pp. 379—382), but he was apparently unaware of the fact that there were two extremely closely allied known American forms. One of these latter, *Hornia minutipennis*, Riley, from Missouri, has simple tarsal claws, the other, *Leonia rileyi*, Dugès, from Mexico, has the tarsal claws armed with a very long tooth, and both insects also attack *Anthophora*. *Allendesalazaria* has the tarsal claws formed as in *Hornia*, and there can be little doubt that these two genera must be very closely related.\* The American insects have been very fully described and figured, and their habits noted in detail by Riley† and Dugès‡ respectively. Dugès placed them under a separate section (*Horniiides*) of the Meloidæ, mainly on account of their minute elytra, and this arrangement was adopted by me when dealing with the Mexican forms (Biol. Centr.-Am., Coleopt., iv, 2, p. 370). The two genera, however, are very nearly related to *Sitaris*, which also attacks *Anthophora*. The American and Moroccan insects are recorded as having been found upon walls in the vicinity of the nests of these mason-bees, after the manner

\* Since this note has been in type M. Escalera writes me as follows: *Allendesalazaria* is valid, and may be separated from *Hornia* by the following characters:—

Scutellum cordiform; wings one-fifth shorter than the elytra; antennæ short (in the ♀ a little longer than the head, in the ♂ as long as the head and thorax together), the third joint longer than the others ..... *Hornia*, Riley.

Scutellum transverse; wings wanting; antennæ longer (in the ♀ reaching the posterior border of the prothorax, in the ♂ extending considerably beyond it), the third joint not longer than the others ..... *Allendesalazaria*, Esc.

† Trans. Acad. St. Louis, iii, pl. 564, t. 5, figs. 13, a—d (1877).

‡ Insect Life, i, no. 7, pp. 211—213, figs. 47, b—f (1889).

of our own *Sitaris muralis*. According to M. Escalera, the female of *A. nymphoides* does not leave the gallery of the bee. It would be interesting to compare *Hornia minutipennis* with the Moroccan *A. nymphoides*, but unfortunately this is not possible. I saw a co-type of *Leonis* in Paris many years ago, in the collection of A. Sallé. *Hornia* is known to me from description alone.—G. C. CHAMPION, Horsell, Woking: December, 1910.

*Telephorus thoracicus*, Oliv., var. *suturalis*, Schilsky, at Gosport and Woking.—Mr. C. J. C. Pool recently sent me a variety of *T. thoracicus* from Gosport for determination. It is the form described by Kiesenwetter (Nat. Ins. Deutschl. iv, p. 502) with a clear splash at the suture, which broadens at the base and does not quite reach the apex, subsequently named var. *suturalis* by Schilsky (Deutsche ent. Zeitschr., 1890, p. 178), the latter having the yellow coloration a little more extended and more sharply defined. The var. *discolestaceus* of Pic is the same form, but his var. *theresia* has the elytra unicolorous reddish-yellow or dark at the apex only. In Mr. Pool's specimens, and in one I have taken at Woking, the yellow coloration is mainly confined to a transverse patch at the base of each elytron. This form is, I believe, not rare in Britain, though perhaps not previously recorded in our literature.—Id.

*Dragon-flies breeding in rain-water collected at the leaf-bases of Bromeliads*.—Prof. P. P. Calvert, of Philadelphia, has just published an account of his Zoological researches in Costa Rica ["Old Penn," Weekly Review of the University of Pennsylvania, ix, no. 6, pp. 165—170, Nov. 12th, 1910], and his description of the habits of certain *Odonata* is so interesting that we give an extract from it, so far as concerns the genus *Mecistogaster*, the illustration being, of course, omitted.

"It is among the larvæ of the dragon-flies that our chief novelties are to be found. There is a group of these insects, limited to tropical America, remarkable for the length and slenderness of body and wings of the adults, the abdomen being as much as four and a half inches long and the spread of the wing six or seven inches in some species. Nothing was known of the early stages of this group, but Mr. O. W. Barrett had suggested, in 1900, that possibly the larvæ lived in the water which is retained between the leaf-bases of bromeliads, members of the pineapple family. Acting on this suggestion and learning from a letter from Mr. F. Knab, of the United States National Museum, that he had recently raised dragon-fly larvæ from such a source in Mexico, much time was spent in examining these plants. On the moister Atlantic slope of Costa Rica, bromeliads are quite abundant, growing on the branches and trunks of trees in the hedgerows around Cartago, in the cool woods of mountains like Irazu, 11,000 feet above the sea, and in the warm tropical forests of much lower elevation. Sometimes they are situated close to the ground, often they are attached to an unbranched trunk 30 or 40 feet from the soil, or may be lodged among the branches at a still greater height. Their leaves, often two or more feet long, taper gradually to near the tip, are toothed or spined on their straight edges, bright green or beautiful pink or red,

and spring from a very short stalk so that their bases are pressed closely together. Between the leaf-bases rain water is usually present, and in all localities various forms of animal life take refuge there. Cockroaches, carwigs, katydid-like insects, larvæ of beetles, of moths, of flies and of mosquitos, ants with long jaws that snap together with an appreciable sound, snails, earth-worms, scorpions, both true and false, centipedes, and even snakes of poisonous repute are common *bromeliadicoli* which we met in our examinations. The length and toughness of the leaves and their sharp spines made it necessary to carry a heavy knife to investigate these plants properly. In October, 1909, we were gladdened by the discovery of undoubted dragon-fly larvæ, in a bromeliad below Juan Viñas, which were carried carefully to Cartago and placed in jars each containing a little water and a small bromeliad. We fed them with 'blood worms,' the bright red young of certain flies, readily obtained from a dirty ditch near the town. The first lot of larvæ died out in about two months, but a second lot from nearly the same locality in December found our jars sufficiently enduring to complete their growth and to transform into the winged insects in early April. Two of them made this change about 8 o'clock on two bright mornings, so that we could photograph them in the act, and one of the illustrations herewith presented shows the fully expanded dragon-fly (*Mecistogaster modestus*) and the exuvia from which it has emerged. The latter, and also the larva when within it, was four-fifths of an inch long, and when the dragon-fly first detached itself it likewise had the same length, but in one and a half hours' expansion, due, some believe, to inspired and also swallowed air, increased the length of its body to three and one-eighth inches, and of each wing to two inches. The larva of *Mecistogaster* is not longer than those of many other insects, but the adult is conspicuously longer, and this great increase in length is thus a matter of a relatively short time at the period of transformation."

The particular insect referred to, *Mecistogaster modestus*, as well as the allied *M. ornatus*, *Pseudostigma aberrans*, and *Megaloprepus ceruleus*, I have often seen in the Central American forests, and it certainly never struck me that any of them could have bred in the abundant Bromeliads overhead! It may be observed, moreover, that the late Julius Flohr found many special *Staphylinidae* amongst these plants on the branches of the trees in Mexico.—ID.

*Monopis weaverella*, Scott: additional specimens.—After reading Mr. Bankes' able paper on this species (Ent. Mo. Mag., 1910, p. 221), I naturally examined my specimens of *M. rusticella*. It may be just now of interest to note that I found eleven specimens of *M. weaverella*. These were labelled "*spilotella*" in a rather shaky handwriting, but unfortunately no locality-label was attached. I obtained them when the collection of the late Mr. P. B. Mason was disposed of. They may have come from two sources, as four of them have white pins and seven black pins. I should be much obliged if any Entomologist who sent "*spilotella*" to the late Mr. Mason would inform me of the fact. All these specimens have veins 5 and 6 of the hind-wings stalked, and the finer examples have an appearance quite distinct from that of *M. rusticella*.—ALFRED SICH, Corney House, Chiswick: October 24th, 1910.



*Another Xylophasia zollikoferi, Frr., in Yorkshire.*—Two days ago I received for determination from Mr. John T. Wigin a large Noctua, which he took on August 12th last, at Methley, a village some seven miles east of Leeds and of Wakefield. I saw at once that it was a good male specimen of *Xylophasia zollikoferi* of the same form as the Norwich example exhibited at the meeting of the Entomological Society of London on October 5th last, but more strongly marked than the previous Yorkshire example, which was taken at Middlesbrough by Mr. T. A. Lofthouse in September, 1903. The date of Mr. Wigin's moth is some five or six weeks earlier than that of any of the previous British captures, which probably accounts for its being in better condition, so far as I remember, than were any of the three specimens I have seen out of the four previous captures in Britain. It shows, too, that the species must have a flight extending over nearly two months.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: December 10th, 1910.

*Note on Halesus guttatipennis, McL.*—On the 4th of this month, when my friend, Mr. William Evans, and I were walking along the banks of the River Tyne near Ormiston in East Lothian, we found a number of *Halesus guttatipennis*—a new locality for this late autumnal caddis-fly, and the second known locality in the Forth area. Females were present in the proportion of three to one male. The only other Caddis-fly seen was *Chætopteryx villosa*. *Perlida* were represented by numerous examples of *Leuctra klapálecki*—both sexes. *Psocida* were not looked for, but a specimen of *Elipsocus abietis* was beaten from yew.

With regard to *H. guttatipennis*, the two Forth localities are quite widely separated, and one cannot help thinking that the species is likely to prove of very wide distribution, perhaps even more general than *H. auricollis*, and that the usually late date of its appearance causes it to be overlooked, Mr. Martin E. Mosely has just sent me an example from Dovedale, where it occurred towards the end of last month in small numbers, mixed with the more abundant *H. auricollis*. It is, of course, well known from Yorkshire, and is also recorded from Wilts and Gloucestershire. It may, however, be worthy of mention that Mr. Mosely has sent me the species from several other localities and at very different dates, namely, from the Itchen below Winchester in October and December; on the Lambourne at Newbury in October; and on the Test at Mottispoint, near Romsey, in October, December, and January.—K. J. MORTON, 13, Blackford Road, Edinburgh: November 18th, 1910.

*A few more Irish Ichneumonidæ.*—Irish notes are so scanty in respect to the *Hymenoptera*, that the following are certainly worthy of mention, in addition to those I have already brought forward (*cf.* Ent. Mo. Mag., 1902, p. 54; 1907, p. 159; 1908, p. 276; and Irish Nat., 1903, p. 68). These were captured by Mr. J. N. Halbert, of the Dublin Museum, mostly on expeditions organized by the Royal Irish Academy Fauna and Flora Committee. They are all conspicuous insects, some of considerable rarity in England, though in the present case found only in single examples. *Protichneumon fuscipennis*,

Wesm., ♂, Forth Hill, Co. Wexford, July, 1900. *Ichnemon molitorius*, Grav., ♀, Santry, Demesne, Co. Dublin, February, 1903. *Platylabus dimidiatus*, Grav., ♀, Muckross, Co. Kerry, June, 1905. *Glyphicnemis profligator*, Fab., ♀, Woodford, Co. Galway, August, 1901. *Exolytus laevigatus*, Grav., Bog of Ring, Co. Dublin, September, 1902. *Cryptus tarsoleucus*, Schr., ♂, Ross, Co. Galway, September, 1905. *Meniscus murianus*, Grav., ♀, Mangerton Mountain, Co. Kerry, June, 1905. *Exetastes cinctipes*, Retz., ♀, Lambay Island, Co. Dublin, October, 1906. *Probarchus rufus*, Grav., ♀, Lough Dan, Co. Wicklow, September, 1908; this is a parasite in *Cimbices* cocoons, uncommon in Britain. *Henicospilus ramidulus*, Linn., ♀, Kilcool, Co. Wicklow, July, 1897. *Campoplex falcator*, Thunb., ♀, Mangerton Mountain, Co. Kerry, June, 1905. *Aphanistes (Anomalon) ruficornis*, Grav., ♂, Glandore, Co. Cork, June, 1900.

I may add that the known insect fauna of Ireland is likely to be greatly augmented by recent visits from Irish, Scotch, and English entomologists in connection with the concerted investigation into the Natural History of Clare Island and the adjacent mainland of Mayo, the results of which will shortly be published in the Trans. Royal Irish Academy.—CLAUDE MORLEY, Monks Soham House, Suffolk: October 26th, 1910.

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## Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquitt Street, Liverpool, October 17th, 1910.—Mr. F. N. PIERCE, F.E.S., in the Chair.

The Opening Meeting of the session was devoted to exhibits of the season's work.

Mr. T. Baxter, of St. Anne's, sent for exhibition a fine series of *Luperina guenéei* and its variety *baxteri*, and contributed a note in which he pointed out that both forms were represented in a perfectly fresh condition, and that the view that the var. *baxteri* would become the typical *guenéei* with age must be abandoned; also an extraordinary asymmetrical ab. of *Abraeus grossulariata* captured in his garden at St. Anne's. Mr. H. R. Sweeting, a long series of *Hydracia crinancensis* captured this year near Londonderry; the variation appeared to be on exactly parallel lines with *nictitans*; also the following from Mold, N. Wales, viz.—*Tenioctampa gothica*, including an asymmetrical example, *T. incerta*, *T. stabilis*, *Pachnobia rubricosa*, *Noctua festiva*, *N. brunnea*, *Aplecta prasina* and *Boarmia repandata*, including an example of var. *nigra*. Mr. Wm. Mansbridge, a series of the very black Knowsley race of *Boarmia repandata*, var. *nigra*, in which the submarginal pale line were almost absent; also short series of the same insect from Bude and Delamere Forest; *Boarmia gemmaria*, black form from N. Kent; pale forms from N. Devon, and var. *perfumaria* from the Cotswolds; a long series of *Aplecta nebulosa* var. *robsoni*, var. *thompsoni*, and grey forms from Delamere. Mr. Prince, a fine series of *Cidaria reticulata* from Windermere, and a box of *Oporabia filigrammaria* varying from nearly white to very dark fuscous, from Derbyshire. Mr. R.

Tait, jun., the following, mostly in long series, viz., *Agrotis agathina*, rosy form from N. Wales, *Lithosia complana*, *Agrotis ripa*, *Epione apiciaria*, *Leucania putrescens*, *Boarmia abietaria*, *Ellopiia prosapiaria*, from Pendine, S. Wales; *Arctia villica* and *Numeria pulveraria* from Abbotts' Wood; *Tæniocampa munda* and *Pachnobia leucographa* from Lakeside, Windermere; *Tephrosia luridata* and *Cymatophora fluctuosa* from Wyre Forest; *Apatura iris* bred from Hunts' larvæ, and *Phigalia pедaria*, varying from pale to black, from Mansfield, Notts. Mr. B. H. Crabtree, *Tæniocampa munda* and *T. gothica*, a series of each, bred, from Windermere; a series of *Charæas graminis* taken at light at Seascale; *Oporabia filigrammaria*, a varied series from Kinder Scout, Derbyshire; *Biston hirtaria* from Aviemore larvæ which had been in pupa for two years; vars. of *Abraxas grossulariata* from Huddersfield larvæ. Mr. C. F. Johnson, *Asteroscopus nubeculosa* and *Nyssia lapponaria* from two year old pupæ from Rannoch; *Pachnobia leucographa*, *P. rubricosa* and *Tæniocampa munda* bred from Windermere; a long and varied series of *Oporabia filigrammaria* from N. Derbyshire; *Boarmia repandata* from N. Wales, N. Staffordshire, and Knowsley, Lancs.; a specimen of *Abraxas grossulariata* var. *nigrosarsata* bred, from Huddersfield. The Rev. A. Miles Moss read a paper on the "Sphingidæ of Peru," and exhibited a magnificent collection of this group which he had made during the course of a three years' residence in Lima. The paper was illustrated by a large number of beautiful water-colour drawings of the larvæ and food-plants of most of the species exhibited, and dealt in a most interesting way with the topography and climate of Peru as affecting the economy of the Sphingids and other *Lepidoptera*, while passing allusions to the scenery and the difficulties of rearing the larvæ obtained on distant expeditions were much appreciated by the members present.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*.

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THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:  
Thursday, October 27th, 1910.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. Ashdown exhibited examples of the various species of *Lepidoptera* met with by him during a few weeks spent in Switzerland in July last, including *Apatura iris*, *Issoria lathonia*, *Melitæa phæbe*, *Limenitis camilla*, *Erebia lappona*, *Colias phicomone*, *Cupido osiris (sebrus)*, &c. Mr. Newman, a living larva of *Polygonia c-album* and a long series of ♀s of *Agriades thetis (bellargus)* from Folkestone. Messrs. H. Moore, Sich, R. Adkin, and S. Edwards, numerous teratological specimens of *Lepidoptera* to illustrate the remarks of Dr. Chapman in his paper. Mr. South, series of (1) *Coremia unidentaria* bred from ova, and read notes on the two main types produced; (2) *Acidalia aversata*, bred from ova, and gave an analysis of the banded and plain forms produced; (3) *Boarmia gemmaria*, bred from ova of v. *perfumaria*, the resultant imagines being all of the varietal form; (4) *B. abietaria*, specimens bred from New Forest larvæ; (5) *Pionea (Scopula) lutealis*, a series from Durham, white, strongly marked, larger than southern examples; and (6) light forms of *Larentia didymata* from Weardale. Mr. Schooling, a var. of *Arctia caja* in which the fore-wing markings were so aberrantly grouped and enlarged as to give no indication of

what the normal marking was. Dr. Chapman, a large number of teratological specimens lent him by Mr. Tutt, Mr. Pickett, Dr. Hodgson, and others, to illustrate the paper he subsequently read, entitled "Notes on Teratological Specimens."—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, November 2nd, 1910.*—  
DR. F. A. DIXEY, M.A., M.D., F.R.S., President, in the Chair.

Mr. H. E. Andrewes, of 8, North Grove, Highgate, N.; Mr. J. R. Charney, of Lyndhurst, Fulwood, Preston; Rev. Archibald Downes-Shaw, of Kettlestone Rectory, Fakenham, Norfolk; Mr. G. E. Frisby, of 40, Windmill Street, Gravesend; Mr. O. M. Schmidt Göttmanns, of 2, Forest Villas, Whipps Cross Road, Leytonstone, N.E.; Mr. Ernest Purnell Jones, of 7, Nantwich Road, Crewe; and Count Emilio Turati, of 4, Piazza S. Alessandro, Milan; were elected Fellows of the Society.

Professor T. Hudson-Bear exhibited examples of the rare British beetle, *Pterostichus aterrimus*, recently taken by him at Stalham, Norfolk. Commander J. J. Walker brought for exhibition the following rare *Coleoptera*:—(a) a specimen of *Lathrobium longipenne*, Fairm., a beetle recently introduced as a British species, taken at Tubney, Berks, July 29th, 1909; (b) a specimen of a remarkable ants'-nest beetle from the Atherton district, N.S.W., described by Mr. A. M. Lea under the name *Tretothorax elelostoma*, and regarded by him as representing a new family of *Coleoptera*, the *Tretothoracidae*; also the ant, *Odontomachus coriarius*, Mayr, with which the beetle was found; and two specimens of *Thomosis guanicola*, Broun, a beetle allied to *Sphæridium*, &c., taken by Dr. L. Cockayne among penguin guano on the Bounty Islands, 490 miles south-east of New Zealand. Mr. J. le B. Tomlin also exhibited examples of the following British *Coleoptera*: (a) *Macronychus 4-tuberculatus*, Müll., recently re-discovered in the River Teme, and not taken in Britain for at least 40 years; (b) *Enicmus histrio*, Joy and Tomlin, a new species described in the November number of the *Ent. Mo. Mag.*; (c) *Laccobius regularis*, Rey, from small sphagnum pools at Newbury, introduced recently by Dr. Sharp as *L. scutellaris*, Mots., but now considered by him as more correctly named *regularis*, Rey; (d) *Cionus longicollis*, Bris., taken at Harwood Forest on *Verbascum thapsus* on June 26th, 1909, the only previous captures in Britain being by Mr. Moncreaff at Portsmouth in 1871; and (e) *Bembidium tibiale*, Duft., a melanic example taken this summer by the River Monnow. Mr. Tomlin also exhibited, on behalf of Dr. David Sharp, examples of (f) *Laccobius ytenensis*, Sharp, a new species also described in the current *Ent. Mo. Mag.*; and (g) *Crepidodera impressa*, Fab., a littoral species recently introduced to the British List by Dr. Sharp from Hayling Island. Mr. G. T. Bethune-Baker, an Asilid which he had taken at Macugnaga in August with a dead ♀ *Nomiades semiargus* in its mouth. Mr. H. St. J. Donisthorpe, a specimen of *Claviger longicornis*, Müll., with its host *Lasius umbratus*, Nyl., taken by Father Schmitz in Germany. He said this species should occur in Britain with the same ant, and that Father Schmitz had told him that April was the best month in which

to look for it in the nests of *umbratus* under deeply embedded, heavy stones. Dr. T. A. Chapman, a teratological example of *Pterostoma palpina*, one of a number of similar specimens bred by Mr. L. W. Newman from one brood of larvæ, and which may be called as a varietal (or aberrational?) name, var. *brevipennis*, and for comparison a specimen of *Libythea celtis* with a shortened wing. He also exhibited, on behalf of Rev. C. R. N. Burrows, a specimen of malformation of the male appendages in *Acronycta tridens*. Mr. H. M. Edelsten, an example of *Leucania l-album*, bred by him. Mr. R. South, an exceedingly interesting and rather variable series of *Luperina quenéci*, Doubleday, sent him by Mr. W. Yates, of St Anne's-on-Sea, who obtained them, chiefly this year, on the Lancashire Coast; also three of six specimens of *Oria (Synia) musculosa*, taken in the Salisbury district, in August, 1909, by Mr. H. Haynes, who captured others in August of the present year. Mr. F. C. Oldaker, a case containing various aberrant forms of *Lepidoptera*, including a very dark form of *Argynnis aglata*, taken in Switzerland; (b) examples of *Polygonia c-album* bred from ova, including one specimen, a ♀, of a very pale form; (c) a series of *Noctua ditrapezium*, including a form in which the ground-colour of the fore-wings is almost uniform dark reddish-brown, the usual black markings being only slightly darker than the rest of the wing, and very faintly discernible; and (d) a series of *Epione adreanaria*, bred from ova at Haslemere, 1907; one of a remarkable form very much smaller than usual, and of a uniform dull brown colour, with white fringes, but no markings on the wings. Mr. A. H. Jones, a series of *Melitæa dictynna*, var. *vernetensis*, Oberth., taken by him this year at Vernet-les-Bains, Pyrénées-Orientales, and said that in his opinion the so-called variety was probably a distinct species, having regard to its general appearance, and the surroundings in which it is taken. With it he also showed examples of *M. dictynna* type, and *M. athalia* for comparison. Dr. Malcolm Burr, D.Sc., M.A., communicated a paper entitled "A Revision of the *Labiidae*, a Family of Dermaptera." The Rev. F. D. Morice read a paper entitled "Hymenoptera Aculeata collected in Algeria: The *Sphegidae*," being Part V of the work commenced by the late Edward Saunders, F.R.S., F.E.S., in the Trans. Ent. Soc., 1904, p. 515. Professor E. B. Poulton, D.Sc., M.A., F.R.S., communicated a paper entitled "Experiments with the larva and pupa of *Uropteryx sambucaria* in connection with their Colour Surroundings," by Elizabeth Bridges. The President, at the close of the discussion which followed, proposed a special vote of thanks to Miss Bridges, who was present, which was carried unanimously.—H. ROWLAND BROWN, *Hon. Secretary*.

NOTES ON THE LIFE-HISTORIES OF *DIORYCTRIA ABIETELLA*, FAB.,  
AND *D. SPLENDIDELLA*, H.-S.

BY EUSTACE R. BANKES, M.A., F.E.S.

In 1902 I identified, as *Diorgetria splendidella*, H.-S., two individuals standing as "*abietella*" in Major R. B. Robertson's collection, and mentioned that, in some localities, the larvæ feed in cones of

spruce fir. He informed me that the moths had been taken in Hampshire, in a Scotch pine wood near Bournemouth, from which spruce was entirely absent, and in which he had never seen the species I described as the true *abietella*. I thereupon advised him to look for the larvæ of *splendidella* in cones of Scotch pine, or, if these proved unproductive, in resinous nodules on the trunks. On November 18th, 1902, when I went over to join in a search in the wood in question, my friend showed me a cage containing various larvæ that had already come out of cones of Scotch pine (*Pinus sylvestris*), lately collected there and elsewhere in the near neighbourhood. Some of these were already hibernating full-fed in the loose sand at the bottom of the cage, curled up in round flat domiciles, composed of reddish silk coated with sand, which I should have referred to *splendidella*, H.-S., but that, to my surprise, the two larvæ that were available for examination, agreed with Mr. Atmore's description [Ent. Mo. Mag., xxiv, 223 (1888)] of those of *abietella*,\* Fb. (*decuriella*, Hb.), and not with Mr. Buckler's descriptions (*op. cit.*, xxiv, 269-271) of those that belonged to the former species! This, taken in conjunction with the facts that no important differences have been noticed in the larvæ, and that from the many tenanted Scotch pine cones that were collected in the autumn of one year or another, by Major Robertson, near Bournemouth, two veritable examples, which I have seen, of *abietella*, Fb., but none of *splendidella*, H.-S., have been reared, the one by Mr. A. Thurnall on July 11th, 1903, the other by the Major in a later year, leaves little doubt that all these cone-infesting larvæ were those of *abietella*.

On November 19th and 23rd, 1902, I collected, in the Isle of Purbeck, Dorset, a few Scotch pine cones showing precisely similar larval traces to those met with at Bournemouth; these were found in a frequently-worked pine wood where the imago of *abietella* has occasionally occurred to me, but that of *splendidella* has never been seen, and were doubtless referable to the former, though, like my Bournemouth cones, they yielded no full-fed larvæ, and were probably collected too late. Owing to absence from home, no earlier search on my part had been possible in either locality. The larvæ may be found about October, somewhat distorting, into a more or less curved shape, the well-grown green cones on the trees; the indications that should be looked for are a hole in the concave side of the cone, and some

\* In his "Revision of the British *Phycitidæ* and *Galleridæ*," published in Ent. Mo. Mag., xxii (1885), Ragonot, on page 52, gave preference to the name "*decuriella*, Hb.," for this species, but subsequently in the Romanoff Memoires, vii, 200 (1893), he pointed out that it should be called "*abietella*, Fab."—E. R. B.

**NOTE.**—Subscriptions for 1911 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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frass beside the edge of it. One may, at the same time, find some quite small, dead and dry, cones, which show an exit hole, and in which the larvæ of *abietella* probably once fed. Even in the latter half of November, the fresh pellets of frass round the holes in some of the green cones are so small as to show that the occupants are quite immature, but these backward larvæ will be dealt with later on.

To find larvæ of *D. abietella* feeding in well-grown cones\* of Scotch pine, leaving these in the autumn, when full-fed, and spinning hibernacula in the manner of *splendidella*, with the obvious intention of remaining therein until the spring, and then leaving them to construct true cocoons in which to pupate, was most perplexing. Mr. E. A. Atmore, in Ent. Mo. Mag., xxiv, 221-224 (1888), had stated that the larvæ fed in shoots, usually in those of the previous year, but occasionally in those of the year or in *very small* cones, of Scotch pine, becoming full-fed in the spring, and I myself had bred, a series of *abietella* from larvæ found, near Ringwood, Hants, in shoots of the same pine on April 28th, 1891, and May 12th, 1892. The idea that we might perhaps have, in this country, two very closely allied species confused under the name *abietella*, being unsupported by any particle of evidence, one was forced to the conclusion that *abietella* has, even, it may be, in the same district (the locality near Ringwood and that near Bournemouth are only six miles apart), two different life-cycles.

More recently I was able to consult, in the Romanoff Mémoires (vol. vii), the first part of Ragonot's "Monographie des *Phycitineæ* et des *Galeriinaæ*," and was much interested to learn from it that two very similar life-cycles had been observed on the Continent. Whereas Mons. A. Constant's account, which we there find, of the larval habits practically agrees with Mr. Atmore's, and with my own earlier experience near Ringwood, except that Constant found the larvæ in *Pinus maritimus* instead of *P. sylvestris*, Ragonot says that the larva, according to Zincken, "lives in the fir-cones (*Abies*) feeding on the seeds thereof; the infested cones are distorted, and are also to be recognised by the frass of the larva which appears on the curved side. It is full-grown in October and buries itself in the ground in November, making for itself a cocoon from the *débris* of fir-needles and moss. It is best to pick up these cones in October; they fall owing to the operations of the larva.† It pupates in the spring, and

\* Ragonot had told us in Ent. Mo. Mag., xxiv, 224 (cf. xxii, 52) that the larva lived "in the cones, young shoots, and decayed wood of the *Conifera*," but without further detail.—E. R. B.

† In the case of *Pinus sylvestris* the cones appear to remain firmly attached to the trees, even after the full-fed larvæ have vacated them.—E. R. B.

the moth appears at the beginning of July." Ragonot's further remarks [Rom. Mém., vii, 199 (1893)] on this difficult problem seem worth quoting, and are as follows: "The late von Horning wrote to me that he had collected cones of *Abies pectinata* in Bohemia in November, and the moth emerged in March (no doubt in a heated room). He also collected the cones of *Abies nigricans* and *excelsa* in July and obtained the moths in September, which were like the others, but smaller and paler; he concluded that there were two broods, but it is probable that there is only one, the more advanced larvæ producing the moths in September (confirmed by Mons. Lafaury), the others hibernating. No one seems to have observed in the autumn the larva that lives in the shoots of the pines, nor sought for the differences which may exist between the moths of the larvæ inhabiting the cones, and those living in the stems; I am therefore obliged to consider these two larvæ, which are in other respects very similar, as constituting one and the same species."

Since Ragonot's words were penned, though without any knowledge of them, I *have* carefully sought for differences in the moths from the larvæ inhabiting the cones and from those living in the shoot-stems, but in vain. The idea of the insect being truly double-brooded in Britain seems to me untenable, nor are any facts known to me that suggest that, with us, the more advanced larvæ ever produce imagines in the autumn. One remarkable fact, however, is worthy of record. On December 2nd, 1904, Mr. A. Thurnall found, in a cage in which he had placed a few tenanted Scotch pine cones, received in October from near Bournemouth from Major Robertson, a true cocoon containing a pupa, which he had no doubt was referable to *abietella*, but when the pupa was examined in the following August, it had evidently been dead for a long time.

Some of the larvæ feeding in the cones are barely half-grown by the late autumn, and obviously cannot feed up before the following year: in confinement, these leave the cones during November, and wander about until they die, nor did Major Robertson succeed in inducing them to settle down on shoots of Scotch pine. In spite of his want of success, however, a review of all the facts at hand makes me think it probable that, in Britain, all the eggs are laid during the summer on green cones of *P. sylvestris*, that the larvæ from the earlier eggs become full-fed about October, when they leave the cones to spin hibernacula on the ground, finally pupating in true cocoons thereon in the spring, while those from the later eggs, being still immature,

desert the cones in November, and entering the stems of the shoots of the year, feed up on the pith of these in the following spring. This, however, is only conjecture, for I believe that nothing definite is known either about the later history of the young larvæ that feed in the cones until November, or about the earlier history of the larvæ that are found, in spring, approaching maturity in the shoot-stems of the previous year. Our combined experience has taught us that the imagines resulting from the larvæ with this latter habit appear at the same time of year as those that have become full-fed in the previous autumn. The fact that the larva of *abietella* often feeds in cones was evidently unknown to the Editor of "The Entomologist," when, in the course of his review of Mr. A. T. Gillanders' "Forest Entomology," he wrote, in vol. xli, 256 (1908): ". . . There is presumably some confusion here, as it is the larva of *D. splendidella* that feeds in cones; that of *D. decuriella* (*abietella*) attacks the shoots of *Pinus sylvestris*."

The moths, in Britain, may be taken during a considerable portion of the summer. Those that resulted from the larvæ in shoots of *Pinus sylvestris*, that I collected near Ringwood on April 28th, 1891, emerged June 30th—August 18th, and all that I have taken in nature have been captured during this period, with the exception of one that was secured in Rothiemurchus Forest, Inverness-shire, on June 27th, 1908—a year in which *Lepidoptera* appeared exceptionally early in that county.

Turning now to the closely-allied *D. splendidella*, H.-S., a somewhat similar problem appears to confront us. Duponchel, as quoted by Ragonot (*op. cit.* pp. 196-197), states that the larva "feeds on the woody part of *Pinus sylvestris*, living between the bark and the sapwood, in the same way as *Cossus*, and the wound that it makes causes an outflow of resin, and this, coagulating in the air, forms a more or less thick tumour which betrays its presence, and in which it forms a cell wherein to pupate when full-grown. This cell has the appearance of a pipe of which the sides are lined with silk, and its external opening is only closed by a few threads, crossed in the form of a trellis. It is not rare to find five or six of these larvæ in the same tumour, where they seem to live on for some time before pupating, as one finds their cell surrounded by frass, which is evidently composed of the resin, from which it is only distinguished by its granulated form. It is full-grown towards the end of June, and the imago emerges at the end of three weeks." Ragonot adds the following note: "Mons. Lafaury writes me word that in the Landes the larva

is found in April and pupates in the middle of May, the moth emerging during the first fortnight of June."

The fact that two *D. splendidella* were taken by Major Robertson in a Scotch pine wood, where spruce was absent, suggests that the larvæ may have fed there in the manner recorded by Duponchel, and perhaps reliable evidence, unknown to me, may exist of their sometimes feeding in this way in Britain. It is certain, however, that, in some parts of this country, the larva shows entirely different habits, which were clearly unknown to Ragonot when writing his Monograph, and feeds throughout in the cones of *Picea (Abies) excelsa* (spruce fir), more than one larva sometimes inhabiting a single cone, leaving these in autumn when full-fed, wintering in a round flattish hibernaculum, and pupating in spring, the moth emerging in June or July. Dr. J. H. Wood used to find the larvæ behaving thus in the Tarrington district of Herefordshire, and the only imago that I have ever bred resulted from a larva in a cone that was received from him on September 22nd, 1894, and emerged on June 15th, 1895. Dr. Wood, in 1874—1879, supplied Mr. W. Buckler with some of these larvæ, and the latter's detailed notes, which include descriptions, together with the results of the former's experience with the insect, will be found in Ent. Mo. Mag., xxiv, 269—272 (1888), and also in Buckler's "Larvæ Brit. Butt. and Moths," ix, 249—255 (1901), where, on Plate clviii, figures 8, 8a, and 8b, show the larva, while figure 8c represents the hibernaculum. Buckler in his notebooks had used the name "*abietella*," but although in Ent. Mo. Mag., xxiv, 269, Stainton expressed his firm belief, which we know to have been correct, that Wood's (= Buckler's) insect was *splendidella*, H.-S., the name "*abietella*" was unfortunately retained in the heading of Buckler's notes when reproduced, after his death, in his "Larvæ" (*loc. cit.*). From these we learn that, instead of behaving like its fellows, a full-fed larva that evidently constructed its hibernaculum in the autumn of 1878, was still alive therein, and lying over, in October, 1879, and that occasionally a full-fed larva forms no hibernaculum, but constructs, in the autumn, a true cocoon, the imago emerging, as usual, in the following summer. In the latter case, I expect that the larva pupates in the autumn, seeing that, as stated above, Mr. Thurnall's larva of *abietella*, which formed a true cocoon in the autumn, was found to have done so. Barrett [Lep. Brit. Isl., ix, 416 (1904)] says of the larva of *splendidella*, though without mentioning the source of his information, "August till May, in cones of spruce fir (*Pinus abies*), feeding in them when quite small and

green, hibernating in them, probably moving from one to another, and feeding up within when the last infested cone is of full size;" but although, on page 417, he states that "the habits of the larvæ were carefully worked out in Herefordshire by Dr. J. H. Wood and Mr. Buckler," his account does not agree with their experience. Barrett makes the larvæ live as such for about nine months, hibernate (obviously not full-fed) in a cone, and feed up in the spring, whereas the larvæ that have yielded imagines to Dr. Wood and others have, as a rule, hibernated full-fed in silken domiciles, after forsaking the cones.

In Lep. Brit. Isl., ix, 417 (1904), Barrett, probably with Atmore's and Buckler's descriptions of the ground-colours in his mind, expresses the opinion that, in Ent. Mo. Mag., xxii, 52 (1885), Ragonot "transposed the larvæ" of *abietella* and *splendidella*, but I cannot endorse his conclusion, which would still leave marked differences of description unexplained. Ragonot's short descriptions (*l.c.*) are apparently abridged from those of Constant and Duponchel respectively, which are quoted in the Romanoff Mémoires, vii, pp. 198-199, 196 (1893), and these authors' notes on the larval habits clearly point to *abietella* being the subject of Constant's notice, and *splendidella* that of Duponchel's contribution, thus absolving Ragonot of any transposition. I confess, however, that I am quite unable to reconcile Constant's description of the larva of *abietella* with that of Atmore, or Duponchel's description of the larva of *splendidella* with that of Buckler, though the identity of the moths bred by Atmore and Buckler seems unquestionable. In the Rom. Mém., vii, 199, Ragonot quotes Atmore's description of the larva in his notice of *abietella*, but unfortunately his notice of *splendidella*, although England is mentioned therein as a known locality, does not include any of Buckler's descriptions of the larva, or of his notes thereon, all of which were published in full by Stainton in the Ent. Mo. Mag., xxiv, 269-272 (1888), only two months after the appearance of Atmore's paper which Ragonot quotes! Stainton headed his contribution, "On the Knot-horn larva which infests the cones of spruce fir," but said in his introductory remarks, "The perfect insects bred by Dr. Wood certainly seem to be referable to the *splendidella*, H.-S. (the name now adopted by M. Ragonot, Ent. Mo. Mag., vol. xxiv, p. 224, for the *sylvestrella*\* of his Revision, Ent. Mo. Mag., vol. xxii, p. 52);" and Ragonot could

\* In Rom. Mém. vii, pp. 195, 198 (1893), Ragonot showed that *sylvestrella*, Rag., of Ent. Mo. Mag., xxii, 52 (1885), is identical with *splendidella*, H.-S., but that the true *sylvestrella*, Rtzb., is synonymous with *abietella*, Fb.—E. R. B.

easily have checked Stainton's identification, since confirmed by both Barrett and myself.

The imago of *splendidella* has, on certain occasions, been found in very unexpected places, where *Coniferae* are absent, and the most striking instance known to me of this phenomenon is that related by Barrett in Ent. Mo. Mag., ser. 2, ii, 220-221 (1891). The causes of its appearance in such unlikely spots have yet to be explained, nor can I offer any satisfactory explanation of why the larvæ that feed in the resinous swellings on Scotch pine are full-fed in spring or early summer, while those inhabiting spruce fir cones are full-fed in autumn, though they do not pupate until the following spring. But, on the other hand, the idea of there being two closely-allied species, with different life-histories, confused under a single name seems as untenable in this case as in that of *abietella*, for no difference has been detected between the imagines resulting from the larvæ that show such dissimilar habits. In this connection it is worthy of mention that *D. venicellula*, Grote, an American species, showing great similarity to *abietella*, is by no means consistent in its larval habits, and although the bulk of the moths appear about midsummer, the advanced guard emerges in the previous autumn. Ragonot says (*op. cit.*, p. 200), "According to Packard, the larva is usually found in the young cones of fir (*Abies nigra* and *alba*). It penetrates into the cones, making transverse or circular galleries, detaching some of the scales. . . . The larva makes the resin run by its workings, and attacks equally the shoots and the terminal branches, and eats the leaves. One finds it abundantly towards the end of August, and the first moths emerge at the end of October, but most of the larvæ spin in the mass of frass an oval, loose, thin yet firm, silken cocoon at the end of October, to hibernate in; it is not known whether the larva pupates before the winter (but it is probable)." Although these habits are curious and of great interest or comparison, they do not furnish the anomalies presented by *abietella* and *splendidella* of some of the larvæ becoming full-fed in autumn, while others do not reach maturity until the spring or early summer, and, moreover, feed up in an entirely different manner.

It is much hoped that the above notes may lead to further careful study of *abietella* and *splendidella*.

Norden, Corfe Castle:

December, 1910.

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## BLEDIUS PALLIPES AND ITS ALLIES IN BRITAIN.

BY D. SHARP, M.A., F.R.S.

(1) *B. PALLIPES* (Grav.), Er.

From the first confusion has existed as to the synonymy of this species and its allies. In our Catalogue *pallipes* was introduced without a name, then withdrawn, and again introduced as *pallipes*. Rye, in December, 1865, described a close ally under the name of *fuscipes*, and a few months later Schiödte described the same species as *rastellus*. Neither of these names is admitted as valid in the latest European Catalogue; *fuscipes* appears there as a synonym of *pallipes*, and *rastellus*, Schiödte, as a synonym of *subterraneus*; I find, however, from comparison of co-types that the two are perfectly similar.

The confusion as to *B. pallipes* has existed from the very first. Gravenhorst included several species—belonging to different sections of *Bledius*—under the name of *Oxytelus pallipes*. Erichson, however, in Gen. Staph., p. 772, gave a careful description of our *B. pallipes*, and as he had taken much pains in examining Gravenhorst's collection we may accept his decision as final.

In this country *B. pallipes* appears to be a widely distributed species, occurring throughout England and the south of Scotland, in suitable places on the banks of our rivers.

(2) *B. ANNÆ*, sp. n.

*Niger, antennis, palpis pedibus (his cumque coxis) flavis; prothorace parum transverso, parce obsolete punctato, fortiter coriaceo, peropaco; elytris thorace evidenter longioribus, subtiliter crebreque punctatis.*

*Long., 4 mm.*

Closely allied to *B. pallipes*, but readily distinguished by the sculpture of the thorax, and the shorter elytra. The coxæ are always clear yellow, and so are the antennæ. The length of the elytra as compared with that of the thorax is 4 to 3; in *B. pallipes* it is 3 to 2. The large punctures of the thorax are only slightly impressed so as to be more than usually indistinct, while on the contrary the fine sculpture renders the surface rougher and more dull than it is in *B. pallipes*; the punctuation of the elytra is very similar in the two. The thorax is abruptly narrowed behind, the basal margin projects so that the hind angle is rectangular, but immediately in front of the angle the outline of the thorax by its direction would form a strongly obtuse angle with the base if the short basal projection alluded to were

removed. In *B. pallipes* the angle itself is less prominent, and the direction of the side in front of it is less oblique.

I may mention that the two species show distinctions in their sexual characters, but that these are very difficult of study. Otherwise they are but little dissimilar, though the ædeagus is markedly different.

I first met with *B. annæ* on the banks of the river Nith, near Thornhill, in September, 1867, and in the two or three subsequent years I found there a few other specimens. These were separated in my collection as "*B. pallipes*, var.?" On returning to this spot, after an interval of 40 years, at the end of July, 1910, the species was again met with by my daughter, Mr. Bishop, and myself. It lives in the friable sand of the perpendicular banks of the river, in company with *B. pallipes*. The only other locality I know for the insect is the Nethy river in Moray, where I found a pair in July, 1907. I have also a specimen given me by the late R. Hislop many years ago, and supposed to be *B. pallipes*. These are all the specimens I know of.

I have named the species after one of the names of my daughter, M. A. Sharp, who has been very successful in capturing species of this genus.

(3) *B. FILIPES*, sp. n.

*Gracilis, antennarum basi pedibusque flavis, illis extrorsum nigris; prothorace haud transverso, crebre subtiliter punctato, coriáceo, tenuiter marginato, angulis posterioribus vix prominulis, argutis, fere obtusis; elytris thorace longioribus—5:3. Long. corp., 4, lat. vix, 1 mm.*

This species is really very distinct, though it has hitherto apparently quite escaped recognition, the few collections in which it exists agree in calling it "*fuscipes*," though it is nearer to *pallipes* and to *annæ*. The tarsi are longer and more thread-like than in any of the allies, and measurement with the micrometer shows that the thorax is just about as long as broad. The elytra are longer than the thorax, in proportion of about 5—3. In the more slender specimens the greatest width of the body (*i. e.*, the abdomen beyond the middle) is only  $\frac{7}{8}$  mm., in the broadest examples it is just about 1 mm. The punctuation of the elytra is very similar to that of *B. pallipes*.

The nearest ally appears to me to be *pallipes*, but *filipes* is much narrower, with more slender legs, and the thorax is not transverse. The front coxæ are infusate at the base, as in *pallipes*.

The discovery of this species is due to Mr. E. G. Elliman, who dug out many examples of it from the nearly perpendicular clay cliffs at Overstrand, near Cromer, in Norfolk, in June, 1897. Mr. Newbery

informs me that he has a specimen found by Mr. Ernest Elliott at Mundesley, which is in the same neighbourhood. Mr. Elliman has been good enough to allow me to examine his long series, and there can be no doubt as to the validity of the species.

(4) *B. FUSCIPES*, Rye.

*Bledius fuscipes*, Rye, Ent. Mo. Mag., Dec., 1865, p. 154.

*Bargus rastellus*, Schiödte, Naturhist. Tidskr., 1866, p. 149.

I am indebted to the Copenhagen Museum for the opportunity of examining a series of Schiödte's *Bargus rastellus*. They are exactly the same as the original examples of *B. fuscipes* captured by Mr. Rye and myself in June, 1865, on the Firth of Forth, near Edinburgh. In the Catalogus Col. Europæ *fuscipes*, Rye, is placed as a synonym of *pallipes*, while *rastellus*, Schiödte, figures as a synonym of *subterraneus*! I am unable to guess at any explanation for these gross errors.

*B. fuscipes* is a very local species, which has occurred only on the estuaries of our rivers, the Firths of Moray and Forth, and the rivers Mersey and Tor. These localities are very widely separated, and it is not therefore a matter for surprise that the specimens exhibit slight variations, so that as a result a series from one locality does not quite agree with a set from another place.

The original examples of *fuscipes* from Edinburgh are a rather larger and stouter form, with slightly more ample thorax, and the legs brownish-yellow, but not fuscous, as the name implies. These specimens agree exactly with Danish *B. rastellus*, and there is no doubt that the two names are absolute synonyms.

A long series of about 100 examples taken by Mr. Bishop and myself at Forres, in June, 1910, are rather smaller, and darker in colour, the legs being sometimes nearly black, and they have the thorax rather shorter. The numerous individuals from the Mersey district differ but little from the Forres specimens. In a long series taken by Mr. De la Garde at Braunton in Devonshire the form is slightly less robust, the size a little less, and the legs somewhat paler. None of the slight distinctions in any of these series is constant, and I have quite failed to find any character of greater importance.

(5) *B. TEREBRANS*, Schiödte.

*Bargus terebrans*, Schiödte, Naturhist. Tidskr., 1866, p. 149.

On April 23rd, 1866, I found at Harburn, near Carstairs, a single specimen of a *Bledius* that I was unable to determine, and that has

since stood in my collection as *B. sp. n.* Recently I received a series of *terebrans*, Schiödte, from the Copenhagen Museum, and I find that my Scottish example agrees therewith.

*B. terebrans* is placed in the Catalogus Col. Europæ as a synonym of *B. pallipes*, but this is erroneous. It is smaller than *pallipes*; the elytra are much shorter, their length compared with that of the thorax being only 7:5, and they are less densely but more closely punctured; and the antennæ and front coxæ are clear yellow in colour.

*B. terebrans* would appear to be a very rare species in this country, as besides the example referred to above, I have seen only two others, found in the sand on the borders of the Truim about two miles above Newtonmore. Though recognised at the time as different from *B. subterraneus*, which abounded at the spot, careful search produced no other individual. One of these two examples was captured by Mr. Bishop, the other by my daughter.

Close to the specimen last mentioned my daughter found another small black *Bledius*, which I thought might possibly prove to be the female. It has the elytra rather longer and more closely and finely punctured. The series from Denmark includes both sexes of *terebrans*, and the female closely resembles the male. I can therefore only conclude that we have still another black *Bledius* of this group, in addition to the species I have been able to point out in this paper.

Brockenhurst:

December 31st, 1910.

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*BLEDIUS HINNULUS*, ER. (OR *DIOTA*, SCHIÖDTE), IN BRITAIN.

BY D. SHARP, M.A., F.R.S.

*Bledius diota*, Schiödte, Naturhist. Tidskr., 1866, p. 146.

A species very closely allied to *B. bicornis*, but quite distinct, being of a paler colour about the elytra, which are more obsoletely and sparingly punctured. The two are also distinguished in the male sex by the form of the cephalic elevations. These, when seen laterally, have in *bicornis* almost the form of short compressed horns; whereas in *diota* they have a greater extension in the longitudinal axis, so that they are only elevated laminae. In the female sex the cephalic laminae are less elevated, and the distinctions greatly reduced, but in *bicornis* the elevation in front is a little greater and more abrupt. The development of the horns varies, however, so much in individuals of

the male sex of the two species, that the student may be advised to determine his specimens to begin with by the colour and punctuation of the elytra.

*B. diota* was taken in abundance by Brewer, in 1867, at Wells, Norfolk. A record of this capture is to be found in the Entomologist's Annual for 1868, where, however, the insect is called *B. bicornis*. The specimens of *B. bicornis* in the collection at the British Museum are, I believe, of this origin, and are *B. diota*. I have also seen it from Cleethorpes, Lincolnshire (*J. K. Taylor*).

Thanks to the kindness of Dr. Bøving, of the Copenhagen Museum, I have been able to examine a series of Schiödte's specimens taken at Amagerfaelled, in Denmark, in July, 1849, being part of those alluded to by the author in his description (*l. c.*). These are quite the same as our Norfolk examples. I have, however, great doubts whether the insect is not the same as the Russian *B. hinnulus*, Er. It agrees with Erichson's description, and was originally considered by Schiödte himself to be Erichson's species, and the larva was described by him as that of *B. hinnulus* [*Naturhist. Tidskr.* (3), iii, p. 212, pl. xii, figs. 16-19]. Subsequently he changed his opinion, and described the Danish insect as *B. diota*, sp. n.

By some inexplicable misconception, *B. diota* stands in the European Catalogue as a synonym of *B. tricornis*—a species with which it has no relation.

As Schiödte's description is entirely in the Danish language, the following translation of his remarks will be useful in settling the question as to whether *B. diota* and *B. hinnulus* are really two species. It has been prepared for me by Dr. Adam Bøving, and may be relied on.

"In June, 1849, this *Bledius* was to be found in great numbers on the southern part of the commons at Amager, where the ground was gravelly or clayey, containing salts, and where the vegetation was sparse. When describing the larvæ of *Bledius* in the third vol. of *Naturhist. Tidskr.*, I supposed this species to be identical with Erichson's *B. hinnulus*, but remarked that the Danish examples differed from the description, especially by having the frontal prominences more strongly developed. I now treat it as a distinct species, in consequence of some information from Dr. Gerstaecker, who has been so good as to compare both forms at the Museum in Berlin. According to this information there is a difference in the sculpture of the elytra. As in this respect *B. hinnulus* (according to Dr. Gerstaecker) is very like *B. bicornis*, and not—as Erichson says—with a more scanty punctuation."

It may be worth while to add Erichson's note as to *B. hinuulus*, which is (Gen. et spec. Staph., p. 763), "A præcedente [*B. bicornis*] præcipue statura graciliore, frontis margine laterali in utroque sexu haud in cornu formam elevato, elytris minus dense punctatis etc. distinctus."

I think, if we bear in mind the variation of the cephalic elevations I have previously recorded, that it is probable that *B. diota* will be found the same as *B. hinuulus*, Er.

Brockenhurst:

December 20th, 1910.

A CONTRIBUTION TOWARDS THE LIFE-HISTORY OF  
*MIRIS LÆVIGATUS*, L.

BY E. A. BUTLER, B.A., B.Sc., F.E.S.

So little is known about the early stages of the *Hemiptera*, that I have no hesitation in recording the following details, though they refer merely to a very common species. On May 28th, 1910, I found a green ♀ of *Miris lævigatus* in Epping Forest. As it seemed to be gravid, I brought it home, hoping to obtain some eggs. I placed it in a glass tube, and kept it supplied with blades and stems of grass, on which it frequently fed. In feeding, the rostrum, which is too long to be placed at right angles to the body, is inclined backwards, and thus slopes beneath the body; in this position it would appear that the insect cannot obtain more than a very imperfect view of the point of attack. The setæ are driven some distance into the grass blade, so that the labial trough in its basal part is bent at an angle away from them, while its apical part acts as a guide to them. The position, in fact, is much the same as is observable in the Dipterous *Culex* when feeding. A use is thus shown for the joints in the rostrum.

I examined the tube and its contents carefully, as often as possible, but could find no trace of eggs till June 8th, when I noticed, attached to a blade of grass, a long glassy-looking object, which had certainly not been there when I examined the tube the previous day. Subsequent events showed that this was the egg of the *Miris*, although unfortunately I had not witnessed the actual oviposition. The egg was  $1\frac{1}{4}$  mm. long, of a cylindrical shape, truncated at its distal extremity, and at its proximal partly imbedded in a longitudinal slit in the tissues of the grass. It was placed, not upright, but sloping at an angle of about  $45^\circ$  with the grass blade. In colour it was creamy white, and its surface was smooth and shining. In the course of

time the distal extremity assumed the form of a sort of cap, constricted from side to side.

The egg hatched on June 22nd, thus giving a fortnight as the duration of the egg-stage; but in the two or three days before hatching, it became rather darker in colour, and showed a reddish-brown streak at the base, and a reddish stain near the apex. Unfortunately, again, I did not see the actual disclosure of the larva, but it was evidently accomplished by the thrusting up of the apical cap, which had, however, after the emergence, fallen back into position. The rest of the egg-shell was entire, so that the whole egg was very little altered in appearance by the disclosure of the larva, save for its obvious emptiness. In this condition the cap is completely hyaline, but the rest of the shell milk-white.

The newly-hatched larva has an almost cylindrical body, slightly swollen at the head, and gently tapering to the end of the abdomen; the antennæ are long, much longer than the body, and the apical joint is stouter than the rest, thus contrasting strongly with the imago, in which this joint is the thinnest. The antennæ were continually in motion, in the manner characteristic of the imago, viz., the right and left alternately up and down. They were frequently cleaned by being stroked with the front tarsi, and then these were rubbed against one another. The head is yellowish, the abdomen greenish, and the antennæ reddish at the apex. On the dorsal surface of the second abdominal segment there is a distinct yellow spot. The head is rounded in front, broader than the rest of the body, and with a furrow down the middle of the vertex, specially strongly marked behind. Dorsally, the three thoracic segments are similar to one another, the pronotum being the largest. Of the two tarsal joints, the first is very small and the second large; the claws also are large. The four-jointed rostrum is long, and in use, the setæ, when fully thrust into the grass, were guided by the apex of the fourth joint, and the junction of the second and third, so that the labial trough separated from the setæ in two angles, one at the junction of the first and second joints, and the other at that of the third and fourth; this may be contrasted with what is said above as to the position in the imago. The legs are comparatively stout and slightly dusky. The cast skin shows that this duskiess lies in the epidermis; the true colour of the insect is situated beneath this, and does not appear in the exuviae; the only exception to this statement is that there is a yellow streak in the exuviae where the yellow spot appears at the base of the abdomen in the larva.

The first ecdysis occurred on June 26th, four days after hatching. Just previously to this the insect had deepened in colour, the head becoming ochreous, and the body green. The length of the larva in its second instar was 2 mm. Traces of the connexivum now appear. The head is still ochreous and the body green. Down the whole length of the larva on each side runs a dark streak, which is reddish-brown as far as the hinder part of the thorax, and yellowish the rest of the way. The dorsal yellow spot on the second abdominal segment is still distinct. The abdomen is now broader than the thorax, and the terminal joint of the antennæ is not so stout as before. The sulcation of the head is not so distinct. A white line runs down the middle of the dorsal surface; this, however, does not appear to be due to any pigmentation of the skin, but to represent some underlying structure, possibly the dorsal vessel. The excrement in this, as in the other instars, consists of a single drop of thick yellow fluid.

The second ecdysis occurred on July 1st, and the insect then measured  $3\frac{1}{2}$  mm. In the third instar a distinct pale and foliaceous margin appears down each side of the body. On the abdomen this is the rudimentary condition of the connexivum, but it appears on the thorax as well, though it is widest in the abdomen. Within this is a dark streak down each side. No trace of the rudimentary wings appears as yet. The legs are pale, but still with a rather smoky skin. In this instar the antennæ assume their final proportions, with the terminal joint thinnest, and the basal thickest. The colours of the body are now more opaque than hitherto.

The third ecdysis occurred on July 7th, and the insect then measured  $4\frac{1}{2}$  mm. In this fourth instar the rudiments of the wings distinctly appear.

The fourth ecdysis occurred on July 14th, when the nymph measured 7 mm. The rudimentary wings are now much elongated, covering three abdominal segments. A thin red stripe now takes the place of the broader, darker stripe hitherto existing down each side of the body. The yellow spot at the base of the abdomen is very distinct, and the connexivum is plainly marked. A dark stain also appears in the abdomen during the later part of this instar.

The fifth and last ecdysis occurred on July 23rd, when the imago, a ♂, appeared, measuring  $7\frac{1}{2}$  mm. This is a trifle under the normal size for the species, and the reduction no doubt resulted from the confinement and somewhat artificial conditions in which the insect had grown up. At first the body of this imago was green, and the hemelytra were pale ochreous. Subsequently the green colouring



disappeared, and the whole insect became pale ochreous. Thus, a green mother produced an ochreous offspring. According to Reuter, however (Hem. Gym. Scand. et Fenn.), a green form of the ♂ is not known.

From these observations the scheme of the transformations will be seen to be as follows:—

Oviposition .....	June	8th.			
Egg hatched.....	„	22nd.....	Duration of egg stage...	14 days.	
1st ecdysis.....	„	26th.....	„ „ 1st instar...	4 „	
2nd „ .....	July	1st.....	„ „ 2nd „ ...	5 „	
3rd „ .....	„	7th.....	„ „ 3rd „ ...	6 „	
4th „ .....	„	14th.....	„ „ 4th „ ...	7 „	
5th „ ... ..	„	23rd.....	„ „ 5th „ ...	9 „	

Total time from oviposition to appearance of imago, 45 days, nearly a third of which is spent in the egg. The gradual increase of time in the duration of the successive instars are noteworthy.

During the fourth instar an accident happened to the terminal joint of the right antenna, which caused it to shrivel up. This was not repaired at the next ecdysis, but the shrivelled part was cast off, and the imago appeared without any other alteration than a joint too few on that antenna. Mr. Douglas once propounded a theory that the oligomery in the antennal joints which frequently occurs in the adult *Lygæidæ*, and is accompanied by the excessive development of one of the remaining joints, may be due to damage received by the antenna in the larval stage. Whether this really holds in the case of the *Lygæidæ* I do not know; but certainly in that of the present Capsid the loss of a joint in the larva was not followed by any increase in the size of either of the remaining joints in the adult.

Through all the larval stages the tarsi are two-jointed, though the first joint gradually increases in proportionate length. The imago, on the other hand, has three-jointed tarsi. No puncturation appears in the larva, though the puncturation of pronotum and scutellum is a generic characteristic in the imago.

As I had to leave home shortly after the above history was completed, I could not continue the observations beyond the beginning of August. There is thus a considerable part of the year still to be accounted for, viz., from the beginning of August to the middle of the following May. If the above date of oviposition represents approximately what usually happens, it is evident that the insect hibernates in the imago form. Of this there is also independent evidence, as I have records of the imago occurring in March and April. As the spring specimens are green, and these appear to be

♀ ♀ only, it will follow that impregnation must take place in the autumn. At that time, however, most, if not all, of the specimens are ochreous, and thus it would appear that a change of colour must occur during the winter. This is a matter, however, upon which further observations are much needed.

56, Cecil Park, Crouch End, N. :

January 4th, 1911.

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A NEW SPECIES OF *ANTHOMYZA* (*A. BIFASCIATA*).

BY JOHN H. WOOD, M.B.

A very elegant and distinct species, with banded wings:—Thorax dullish yellow, usually margined on each side of the back with a narrow black line; pleuræ with two conspicuous black bands, the upper one broad and running the whole length, the under narrower and abbreviated in front; scutellum dusky yellow. Abdomen of male brown, at the base more or less yellow above; of female yellow, with broad brown bands on the hind margins. Frons yellow, bordered narrowly with white, jowls silvery white, two pairs of vibrissæ. Antennæ yellow, 3rd joint sometimes darkened on upper-side, arista sub-pectinate. Wings milky-white, crossed by two dark grey bands; the first, nearly in the centre, is narrow at the two ends and wide in the middle, reaching as far inwards as the small cross-vein, the second covers the whole outer fifth of the wing, there is also a dusky spot at the base of the basal cells. Legs yellow, the outer half of the femora more or less distinctly blackened, especially in the two hind pairs, and the tibiæ of these same pairs somewhat dusky at the base; terminal joint of tarsi black. Front femora without the usual short black spine beneath.

The subpectinate arista, prettily banded wings, and partially darkened legs give it an appearance totally unlike the ordinary run of an *Anthomyza*, and in these days of dividing and subdividing some might perhaps advocate erecting it into a separate genus. But in all essential points of form, structure, and chaetotaxy this species is an *Anthomyza*, and there I would place it.

I have only met with *A. bifasciata* at one restricted spot. This is a small pool, which was drained some years ago, but still remains swampy, and is now overgrown with a rank and varied vegetation. Running through it is a little boggy stream, which has its rise about 100 yards off. For years this has been a favourite locality of mine, for it lies within half an hour's walk, and has given me at one time or another many a good thing. Yet all the while the existence of this striking little insect remained unsuspected, and it was not until August 8th, 1910, that at last it made itself known. On that occasion I took three specimens.

The discovery could not have happened at a more opportune time, for the same afternoon I was expecting Mr. Collin to look me up on his way to join his uncle and Col. Yerbury at Abergavenny, and I felt sure that my little insect could not fail to interest him. The next morning, therefore, we were early at the place, and between us bagged 15 or 16 examples, much the larger share, as was meet, falling to my friend. They were all obtained by sweeping over and over again the path we had trodden out in the tall herbage, the first sweeping or so being less productive than subsequent ones, as if the habit of the insect were to keep close below, and needed some waking up to bring it to light. A few more were taken afterwards, the last capture being 24/8/10.

I may add that, my own sources of information being inadequate for ascertaining whether it had already been described or not, Mr. Collin kindly searched the authorities and could find nothing answering to it.

Tarrington, Hereford:

December 3rd, 1910.

*Revision of the British species of Haliphus: a correction.*—There are certain errata in my paper, *ante*, pp. 1—10, which I should like to correct. Page 7, line 6, for “in Ranworth,” read “at Ranworth;” line 12, for “very similar,” read “similar.” Page 9, line 6 from bottom, erase the word “form,” and for “*immaculatus*,” read “*immaculatus*.”—J. EDWARDS, Colesborne, Cheltenham: January 10th, 1911.

*Occurrence of Leptinus testaceus, Müll., in Carnarvonshire.*—Mr. Geo. Ellison, of Liverpool, presented to the Warrington Municipal Museum a number of fleas, &c., which he took from the bodies of *Mus sylvaticus* trapped by him at Trefriw on June 10th last. Among these I found three examples of *Leptinus testaceus*, Müll., an insect usually found in association with mammals and their nests.—G. A. DUNLOP, Warrington Museum: December 23rd, 1910.

*Records of Lepidoptera from N.W. Surrey.*—Since the publication of my previous notes (Ent. Mo. Mag., 1907, p. 254) on captures of *Lepidoptera* in this district, a number of species have been taken in one way or another by my brother, R. J. Champion, or myself, which are of interest from point of view of locality or rarity.

In the small reed-beds and marshes near Woking, \**Leucania straminea*, Tr., was not uncommon in the latter half of July this year (1910), in company with swarms of *Cynobia rufa*, Haw., an occasional \**Leucania impudens*, Hb., *Nonagria arundinis*, F., *Epione apiciaria*, Schiff., *Gonoptera libatrix*, L., &c., and only too

many of most of the species usually common in such places. Several specimens each of *\*Tholomiges turfosalis*, Wk., and *Hyphenodes costarstrigalis*, St., were taken in a similar habitat, as also was a single example of *\*Collix sparsata*, Hb. At Woking also, in culms of *Arundo phragmites* were found a number of pupæ of *\*Nonagria geminipuncta*, Hatch. (not without the expenditure of much time and patience), from which the imagines subsequently emerged; we did not take this species on the wing. The pupæ of *N. arundinis*, F., were, as usual, abundant in stems of *Typha latifolia* and *T. angustifolia*, and from those collected we bred a fine dark form referable to the var. *fraterna* (emerged Sept. 10th, 1909).

At light we have taken one or few specimens each of *\*Galleria mellonella*, L., *Apamea ophiogramma*, Esp., *Calymnia pyralina*, View., *Noctua glaucosa*, Esp., *Xanthia fulvago* var. *flavescens*, Esp., and *Calligenia miniata*, Forst., all at Woking, and *Asphalia ridens*, F., at Guildford, in addition to most of the insects recorded in my previous paper.

A number of species have been bred from larvæ beaten from young birches, &c., in a copse near Chobham. Amongst these are, *\*Cymatophora octogesima*, Hb., *\*†Lophopteryx carmelita*, Esp., *Dicranura furcula*, L., *D. bifida*, Hb., and *Hadena contigua*, Vill., the last mentioned being not uncommon. The usual Notodontids, *Lophopteryx camelina*, L., *Notodonta dictæa*, L., *N. dictæoides*, Esp., *N. dromedarius*, L., *N. ziczac*, L., and *Pygæra pigra*, Hufn., were all seen. It is interesting to note that the larvæ of *N. dictæoides* and *N. dromedarius* were both more easily obtained by beating after dark. *Tethia retusa*, L. (one), and *Noctua stigmatica*, Hb. (one), in the perfect state, were found on the beating-tray whilst we were working for the above larvæ.

A few examples of *Agrotis agathina*, Dup., were taken at the bloom of *Calluna vulgaris*, on cold moonlight nights in early September, 1910, in company with *A. tritici*, L., *A. strigula* being absent, fortunately for us. The larvæ of the first of these insects were procured not uncommonly by sweeping the heather at sunset in early May. On the heaths four noteworthy species of the genus *Crambus* have been netted, viz., *\*C. hamellus*, Thunb. (common), *C. uliginosellus*, Zell. (taken in company with *Trichoptilus paludum*, Zell., cf. Ent. Mo. Mag., 1910, p. 241), *C. latistrius*, Haw., and *C. pinellus*, L. *Crambus falsellus*, Schiff., occurred in July, 1908, in our garden here.

We have always thought *\*Limacodes testudo*, Schiff., ought to occur in the district, and I am sure I saw a specimen (which I could not capture) on July 28th, 1907, flying in the daytime in some woods near Milford. This conviction was turned into certainty when, whilst on a day's "hunting" with me in the same locality on July 23rd, 1910, Mr. E. G. R. Waters beat out a fine ♀ from an old oak. Many hours were spent by my brother last September beating for the larvæ, but without success; the only capture was a fair number of larvæ of *Guophria rubricollis*, L. In consequence of this it was a surprise all the more agreeable to us, when a full-grown larva of *L. testudo* was beaten from an oak on the outskirts of the only mixed wood, and that quite a small one, near Woking. Unfortunately our capture proved later to be but the skin

† On the occurrence of this species in Surrey, cf. Vict. Hist. of the County, p. 127, note.

of a larva enclosing a large Ichneumon grub. We have also taken *Lithosia deplana*, Esp., in the perfect state at rest on tree trunks, and as the unhibernated larva, near Milford.

Finally, I may mention the capture of *Xylina semibrunnea*, Haw., at rest on a telegraph pole at Guildford, and the rearing of several *Halias bicolorana*, Fuess., from larvæ taken on oak in company with imagines of *H. prasinana*, L., and *Sarothripus undulatus*, Hb., at Woking.

The species marked \* are not recorded in Mr. H. Goss's list for Surrey in the Victoria History, pp. 110—136 (1902), but *Tholomiges turfosalis*, *Lophopteryx carmelita*, and *Cymatophora octogesima* are referred to as occurring in the county in the more recent publications I have seen.—H. G. CHAMPION, Horsell, Woking: December, 1910.

*Microdon eggeri*, Mik, in nests of *Formica sanguinea*, Latr., in the Luxemburg.—Dr. Sharp, when recording this interesting addition to the British list (*Ent. Mo. Mag.*, vol. xlvi, p. 274), mentions that Wasmann has found the larvæ with *F. sanguinea* in the Luxemburg, but is unable to remember in what publication it is mentioned. The reference may be found in Wasmann's "Zur Kenntniss der Ameisen u. Ameisengäste von Luxemburg" (*Archiv. trimestr. d. Institut. Royal. Grand-Dukal. Luxemburg*, 1909, T. IV, Fascie. III, p. 50). Wasmann states that he found the ripe pupæ of these flies under the bark and in the "runs" of stumps inhabited by *sanguinea* towards the end of April and in May. From the middle to the end of May the imagines hatched and flew away to pair. The females returned to lay their eggs in the early part of June. He found the young larvæ in the nests from the middle to the end of June. In the *Journal of the New York Ent. Soc.* (xvi, 4, 1908, pp. 202—213) a very interesting and valuable paper by Wheeler on "*Microdon*" is to be found. In the *Ent. Record*, 1909, pp. 18 and 19, I wrote a short account of the habits of *Microdon mutabilis*, L., and gave a photograph of the larva, pupa, and imago. *Microdon eggeri* may live with other ants besides *F. sanguinea*, and it is possible that this species occurs at Ramoch, as I discovered it both at Aviemore and Nethy Bridge.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: January, 1911.

*Ancylus-like Mycetophilid larvæ in Epping Forest.*—With reference to the *Ancylus-like Mycetophilid larvæ* described by the Rev. E. N. Bloomfield (*Ent. Mo. Mag.*, March, 1910), I should like to record the finding of similar larvæ under a fallen beech branch in Epping Forest (Chingford) on November 5th, 1910. Their diameters varied from 1—4 mm. Unfortunately I did not breed them.—KEPPEL H. BARNARD, Etwas, Farnham, Surrey: December 17th, 1910.

*Halesus guttatipennis in Scotland in October.*—Referring to Mr. K. J. Morton's note (*antæa*, p. 19) recording the occurrence of this Trichopteron on the Tyne at Ormiston on the 4th of this month, I find I have a specimen which I captured some thirteen miles further down the same river, at East Linton, on October 15th. When we met with the species at Ormiston I mentioned to

Mr. Morton that I had taken some *Trichoptera* on the Tyne, not far from where it enters the estuary, about three weeks before, and believed there was a *Halesus* among them. I have to-day shown the specimen, which is a male, to him.—  
WILLIAM EVANS, Morningside Park, Edinburgh: November 24th, 1910.

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## Obituary.

*James W. Tutt*—It is with sincere regret that we announce the decease of this eminent Lepidopterist at his residence at Westcombe Hill, Blackheath, on January 10th last. A detailed notice of his life and work will appear in the next forthcoming number of this Magazine.

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## Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquitt Street, Liverpool, November 21st, 1910.—Dr. P. F. TINNE in the Chair.

Mr. H. R. Sweeting read a paper on "Collecting in the North of Ireland during August, 1910." In consequence of unfavourable weather the results were much below what one might reasonably expect under good conditions. The outstanding feature of the holiday was the capture of a long series of *Hydræcia crinanensis*; the moth was identified by Mr. F. N. Pierce, who examined all the specimens while the bodies were yet soft enough to permit an inspection of the genitalia. A series of *Cidaria truncata* included a very fine melanic variety of the *centum-notata* form wholly suffused with fuscous, the hind-wings being nearly as dark as the primaries; other specimens also had a strong melanic tendency. A series of *Noctua dahlii* contained some almost black examples. The butterflies were noteworthy as showing distinctly brighter colouring than is usually found in England. *Lycæna icarus*, in which the females from this locality have very bright blue coloration, unfortunately was not met with. The paper was illustrated by a large scale map of the district coloured to indicate the collecting areas, a feature which added greatly to the interest of the descriptions. A discussion ensued in which several of the Members gave their experiences in the North of Ireland.

Mr. B. H. Crabtree exhibited two aberrations of *Nemeophila plantaginis*, male and female, in which all the black markings were replaced by orange, the ground-colour of the fore-wings being pale straw colour, while the hind-wings were unicolorous orange; they were taken on a mountain near Helvellyn; also a variety of *Euchelia jacobææ*, in which the usual red markings were smoky black sparingly intermixed with crimson; this very striking specimen was bred from a larva found at St. Anne's-on-Sea. Mr. A. W. Boyd, a large number of *Micro-Lepidoptera* taken in various parts of Cheshire during 1910.—H. R. SWEETING and W. M. MANSBRIDGE, *Hon. Secretaries*.

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THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.  
 Thursday, November 10th, 1910.—Mr. W. J. KAYE, F.E.S., President, in the  
 Chair.

Mr. W. G. Sheldon, F.E.S., of Croydon; Lieut. H. F. Stoneham, of  
 Streatham; Mr. A. J. Lawrence, of New Oxford Street; and Mr. B. S. Curwen,  
 of Richmond; were elected Members.

Dr. Hodgson exhibited selected examples of *Agriades coridon*, mainly ♀s,  
 to show the prevalent slightly blue-scaled form from Dover and Clandon in  
 1906 and 1904 respectively, and from Sussex, Surrey, and Herts in 1910. Mr.  
 Platt Barrett, bred specimens of *Vanessa io*, of a curious greasy looking appear-  
 ance, from mal-development of the scales. Mr. R. Adkin, a bred series of  
*Lithosia caniola* from Devonshire, and read notes on the larval habits. They  
 fed mainly on lichen and lettuce. Mr. Newman, a curious specimen of "blue,"  
 which it was suggested might be a natural hybrid between *A. coridon* and  
*P. icarus*, or *A. thetis* and *P. icarus*, and also a ♂ *Polygonia e-album* with yellow  
 ground, of which ten others had been reared. Mr. Sich, *Limenitis populi*, taken  
 by Mr. E. Sich in Austria. Mr. Moore, *Perrhybis pyrrrha*, from Callao, Peru.  
 Mr. Turner, a teratological specimen of *Danaïd limniace*, with a long indenta-  
 tion in the dwarfed left fore-wing. Mr. Buxton, a box of teratological  
 specimens, including a number of species with the left hind-wing dwarfed or  
 missing. Mr. Barnett, a series of *Acidalia rusticata* from Erith. Mr. R. Adkin  
 read the Report of the Conference of Delegates of the Corresponding Societies  
 of the British Association. The remainder of the evening was devoted to the  
 exhibition of lantern slides by Messrs. Lucas, Dennis, West, Tonge, and Main.

Thursday, November 24th.—The President in the Chair.

The Annual Exhibition of Varieties.

Mr. Platt Barrett exhibited a very long series of *Melanargia pherusa* from  
 Sicily, also of *M. galathea* to show various Sicilian local forms. Mr. Sich,  
 some of the more local species of the genus *Tinea*, including *T. fulvimitrella*,  
*T. picarella*, *T. confusella*, &c. Mr. R. Adkin, a series of Eastbourne *Polyom-  
 matus icarus*, contrasting the spring and autumn ♀s, showing strong develop-  
 ment of the red markings, and including a fine under-side aberration; also  
 a short series of hybrid *Nyssia zonaria* and *Biston hirtaria*, ♂s and ♀s. Mr.  
 Tonge, some extremely dark smoky *Cosmotriche potatoaria* bred from Deal larvæ,  
 a *Brenthis euphrosync* with pale chocolate-brown ground, from Polegate, several  
*Agrotis exclamationis* in which a large black blotch replaced the usual discal  
 markings, and some excellent enlarged photographs of eggs of *Lepidoptera*.  
 Dr. T. A. Chapman, a long series of *Pararge egeria* to show the great range of  
 variation in Western and South-Western Europe. Messrs. A. Harrison and  
 H. Main, several series of mainly bred *Boarmia repandata* to show the local  
 variation in the North, South, and West of England and the West of Ireland.  
 Mr. Main, on behalf of Mr. Göttmann, various forms of *Vanessa io*, *Euvanessa  
 antiopa*, and *Aglais urticae* from the Province of Yenesei, Siberia, extremely like  
 the forms so frequently produced of late in temperature experiments, and of  
 which Mr. W. Schmassmann exhibited a considerable number for comparison.

Mr. W. J. Lucas, the English trap-door spider, *Atypus affinis*, and several of its silken tubes, with a *Pterostichus madidus* discovered in one of them, and a small collection of butterflies taken by Patrol Leader S. F. Irwin on his visit to Canada with Sir F. Baden Powell, including *E. antiopa*, *Anosia plexippus*, &c. Mr. H. M. Edelsten, a fine bred series of *Dianthæcia luteago* var. *barrettii* from Devon, *Tapinostola extrema* bred from Northampton, and a specimen of *Leucania l-album*. Dr. Hodgson, groups of varieties of British *Rhopalocera* and Anthrocerids to show somewhat extreme divergence of variation in each of several species and also to show convergence of species in their variation. Mr. A. E. Gibbs, the various Palearctic forms of *Papilio machaon*, including a fine large *britannicus*, an *aurantiaca*, and spring and summer forms of the Japanese *hippocrates*. Mrs. Hemming, Argynnids bred and captured in 1909-10, including melanic *Dryas paphia* and several under-sides of the same species varying from brown to green. Captain Cardew, an extremely dark specimen of the ab. *fusca* of *Cænobia rufa* from Norfolk, *Anthrocera ricæ* ab. *confusa*, extremely light and dark forms of *Fidonia carbonaria* from Rannoch, a unicolorous ♂ of *Epione advenaria*, and a light straw *Ematurga atomaria*. Mr. Seorer, a *Euchelia jacobææ* with the costal streak and apical spot united, and a pale, salmon coloured example, specimens of *Euchloë cardamines* with very large discal spots, and a *Grammesia trilinea* with a strongly elbowed outer discal line. Mr. Percy Bright, a large number of the finest aberrations of numerous species of British *Lepidoptera*, including forty-one very striking examples of *Abraxas grossulariata* from nearly unicolorous white to almost entirely yellow and a bred small specimen without scales, a *Triphæna fimbria* with white replacing the yellow, an extreme melanic *Eubolia bipunctaria*, a gynandromorph of *Fidonia atomaria*, an adonis-like *Polyommatus icarus*, several *Polygonia c-album* with straw-yellow ground, a *Pieris napi* with blackish outer margins, an extremely blue ♀ of *Agriades thelis* with unusually large orange spots, a *Pseudoterpna pruinata* with black bands across the wings, &c. Mr. R. South, on behalf of Mr. Yates, of St. Anne's-on-Sea, a series of *Luperina guenei* taken this year and a series of very varied forms of *L. testacea*, a short series of bred *Phibalapteryx lapidata* from Glasgow ova, and three specimens of *Oria (Synia) musculosa* taken by Mr. H. Haynes near Salisbury in 1909. The Rev. F. D. Morice, a collection of about 300 of the most conspicuous and handsome European and Mediterranean species among the Sawflies, Chrysidids, Ants, Fossorial Wasps and True Wasps, and gave a very interesting short account of the habits in the various groups. Mr. H. W. Andrews, a unicolorous grey form lacking the yellow markings of the Dipteron *Prosenia sybarita* from North Kent. Mr. Edwards, numerous West African butterflies, chiefly of the genus *Cymothoë*, which show strongly marked sexual dimorphism. Mr. West (Greenwich), his collection of British *Homoptera*. Mr. Masters, a *Fanessa atalanta*, taken in Jersey, with blotched and confused markings comparable only to those produced in recent temperature experiments with the species. Mr. Blenkarn, a specimen of the genus *Ephyra*, with markings suggestive of both *E. porata* and *E. punctaria*. Rev. J. E. Tarbat, a very light form of *Nemeophila plantaginis* from South Hants, and a very dark form from Witherslack. Mr. W. G. Sheldon, a fine series of all the European species of *Neptis*, *Apatura*, and *Limenitis* taken by him in Hungary, Switzerland, and



France. Mr. H. Page, two beautiful series of *Polyommatus escheri* and *Cornynympha dorus* from Abries and Digne respectively, July, 1910. Mr. L. W. Newman, long and varied series of closely inbred *Ennomos alniaria* showing the washed out appearance produced, a fine set of the melanic form of the species, hybrid *Smerinthus ocellatus* ♂ × *Amorpha populi* ♀ (both ♂ s and a ♀), a long series of hand-painted figures of the finest aberrations bred by him; on behalf of Mr. Marshall, a *Diphthera orion* with only the orbicular spots present, *Noctua subrosea* from the Bond collection, *Melitæa artemis* with heavily marked white wedges on all the wings, &c. Mr. W. B. Pratt, ab. *coracina* of *Melitæa athalia* from West Sussex, and *M. aurinia* with under-side of hind-wings having a black base and an extremely wide white central band. Mr. W. J. Kaye, a complete transitional series between *Heliconius phyllis* form *anaercon* and *H. phyllis* form *venusta* from the same locality in East Bolivia. Mr. T. L. Barnett, a large number of species taken by him this August in Wicken Fen, including *Tapinostola hellmanni*, *Lewania straminea*, *Nudaria senex*, *Herminia cribralis*, *Bankia argentula*, *Canobia rufa*, &c., a bred specimen of *Egeria andreniformis* and its pupa case, and specimens of *E. culiciformis*, which had been somewhat common at Darenth Wood.—H. J. TURNER, *Hon. Secretary*.

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ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, November 16th, 1910.*—  
Dr. F. A. DIXEY, M.A., M.D., F.R.S., President, in the Chair.

The names of those nominated to serve as Officers and other Members of the Council were announced.

On the motion of the President, it was agreed unanimously to convey to Mr. Roland Trimen, F.R.S., the recipient of the Darwin Medal of the Royal Society, the hearty congratulations of the Entomological Society of London.

Dr. Geoffrey Douglas Hale Carpenter, M.A., M.B., Uganda Medical Service, Uganda Protectorate; Mr. William B. Gurney, Assistant, Government Entomological Department of Agriculture, Sydney, N.S.W.; and Mr. J. C. Hawkshaw, Hollycomb, Liphook, Sussex; were elected Fellows of the Society.

The Hon. N. C. Rothschild brought for exhibition some examples of a rare Noctuid moth, *Oxytrypia orbiculosa*, Esp., collected by himself and Miss Sarolta von Wertheimstein, at Puszta Peszer, in Hungary, during the first week of October of this year, where examples of both sexes were secured, and made some remarks on the curious habits of the moth, illustrated by photographs of one of the sandy spots in the wood it frequents; he also exhibited examples of two species of flea, *Ctenocephalus canis* (dog-flea) and *C. felis* (cat-flea), and stated that, though still frequently considered to be identical, they were really quite distinct species. Under the microscope it was seen that whereas the head of the dog-flea was rounded, that of the cat-flea was long and flat. Dr. G. Nicholson, the example of *Lathrobium longipenne*, Fairm., taken by him at Roydon, in May, 1910, of which a specimen was exhibited by Commander J. J. Walker at the last meeting of the Society. Professor T. Hudson Beare, specimens of three species of beetles, all taken abundantly by him at Nethy Bridge, Inverness-shire, during July and August, 1910, viz.: (a) *Eriirrhinus*

*æthiops*, F., found in great abundance in food refuse on the banks of the Spey; (b) *Criocephalus rusticus*, Dej., taken in numbers in the stumps of, and in small standing Scots fir trees in pine woods, swept over by a forest fire some few years ago; and (c) *Zeuqophora turneri*, Pow., beaten in great profusion from aspens growing near Loch-an-Eilan. Mr. W. C. Crawley, a colony of the ant *Lasius niger* which had accepted as queen a ♀ of *Lasius umbratus* in 1908. Up to this autumn the only ants which had come to maturity in the nest were pure *Lasius niger*, thus confirming Reichenbaeh's experiments that *Lasius niger* ♂s are able to produce ♀s parthenogenetically. In connection with Mr. Crawley's exhibit Mr. H. St. J. Donisthorpe exhibited ♂♂, winged and wingless ♀♀ and ♂♂ of *Lasius niger* and *L. umbratus* for comparison. He remarked that *umbratus* was a scarce but widely distributed ant of considerable interest. Mr. Donisthorpe also exhibited ♂♂, winged and wingless ♀♀, and ♂♂ of *Lasius fuliginosus*, and pointed out that it was now proved that the ♀♀ of this ant often founded their colonies with *umbratus*. Mr. W. J. Kaye, specimens of *Eueides pavana* (*Heliconidæ*), *Actinote thalia* (*Acræidæ*), and *Dismorphia actinote* from S. Brazil. Comment was made as to the very close resemblance between the first two. The resemblance was greatest on the under-side, but the upper-side also showed considerable convergence of colouring. The specimen of *E. pavana* exhibited had been caught and papered by Mr. Kaye as an example of the common *Actinote thalia*. The specimen of *Dismorphia actinote* caught on the Corcovado at Rio de Janeiro, was shown principally as a mimetic species, for which a sharp look-out was kept, while the much more convergent *Heliconidæ* had been passed over, because unsuspected. The *Dismorphia*, while only a partial approach to the *Actinote* on the upper-side, was extremely close on the under-side, with the hind-wing brought well over the forewing in an attitude of rest. Mr. L. W. Newman, examples of *Abraxas grossulariata*, bred October, 1910, as a second brood, including two fine ab. *varleyata* ♂♂; also an interesting *Lycæna* supposed to be a natural hybrid between *Agriades thetis* (*bellargus*) ♂ × *Polyommatus icarus*, ♀, taken wild near Folkestone, on September 10th last, with specimens of *A. coridon*, *A. thetis*, and *P. icarus* for comparison. Mr. G. T. Bethune-Baker having examined this exhibit, gave it as his opinion that the butterfly was merely an aberrant form of *Polyommatus icarus*. Mr. Philip J. Barraud, a case containing several series of a large form of *Satyrus statilius* from the Aurunci Mts., Southern-Central Italy; series of *Parnassius mnemosyne* var. *frühstoferi*, from Mt. Petrella, Aurunci Mts., 9000 ft.; series of *Colias edusa* and ab. *helice*, from Formia; a very small specimen of *Gonopteryx cleopatra*, measuring 37 mm., from Formia; and four examples of a large form of *Pamphila comma* from Southern-Central Italy.

The following papers were read:—"On the early stages of *Lotiorina* (*Lycæna*) *orbitulus*, Prun., an myrmecophilous Plebeiid butterfly," and "On the larva of *Orygia splendida*, Rbr. (*dubia*)," by Dr. T. A. Chapman. "Notes on Insect Enemies in the Tropics, and their Influence on Mimicry," by Edward A. Cockayne. "New Genera and Species of *Striphnopterygidæ* and *Lasiocampidæ*," by Professor Christopher Aurivillius, Hon. F.E.S.—H. ROWLAND-BROWN, Hon. Secretary.

**NOTE.**—Subscriptions for 1911 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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[VOL. XLVII.]

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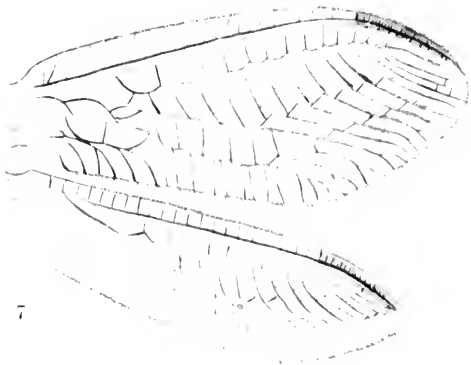
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LIFE-HISTORY OF CHRYSOPA DORSALES.



NOTES ON *CHRYSOPA DORSALIS*, BURM.

BY E. MAUDE ALDERSON, F.E.S.

## PLATE I.

On July 28th, 1909, I received through the kindness of Mr. Atmore, of King's Lynn, three living examples of *Chrysopa dorsalis*, Burm., one ♂ and two ♀♀. In the letter accompanying the insects, Mr. Atmore informed me that the species was attached to Scotch fir, so my first care was to provide them with a sprig of this tree, on which to oviposit. The stem of the shoot was passed through a hole bored in the bottom of a large chip box, resting on a vessel containing water, and a glass jar, inverted over the top, formed a makeshift vivarium, highly suitable for observation.

The insects on being liberated from the chip boxes, in which they had travelled, became extremely active, fluttering up and down the sides of the glass jar. One of the females, however, quickly settled down amongst the fir "needles," and I had hopes, by the careful way in which she examined them, that she was selecting a suitable position for her eggs. In this I was not disappointed, as by the next morning, July 29th, a single glistening green egg had been laid, whilst a careful scrutiny with the lens revealed several abortive attempts at oviposition, the stalks of the eggs being present, but no more ova. I removed the "needle" on which the single ovum was laid, for fear of accidents, and awaited results, hoping for more ova next morning. To my intense disappointment, however, the next day found the ovipositing female dead, and also the only male.

All my hopes were now centred in the one tiny green atom, and it was with considerable relief that I saw it begin to change colour on the second day, and not shrivel up, as I half dreaded it would do.

A new anxiety, however, now arose—the question of food. Mr. Atmore had distinctly stated that *C. dorsalis* was attached to Scotch fir, and therefore presumably to those Aphides affecting the genus *Pinus*. With these I was quite unacquainted, and, moreover, the nearest fir trees were a mile or more away. The larva hatched out on August 6th, and in some trepidation I offered the common Rose aphid, *Siphonophora rosæ*, Réaumur, but my doubts were soon set at rest, for the aphides were accepted without any hesitation, and I subsequently found such distinct species as *Chaitophorus salicivorus*, Walker, *Rhopalosiphum nymphææ*, Linn., *Callipterus coryli*, Goetze, and *Phyllaphis fagi*, Linn., equally relished. The young larva continued to flourish, and on August 10th apparently effected its first change of skin. The

second change took place on the 14th. I observed no more before it commenced to spin, on the 20th, in the folds of a leaf. The cocoon was completed by the next day, and the perfect insect emerged the following year, on May 30th, 1910.

It will now perhaps be interesting to follow the fortunes of the other female. After the death of the other pair, I was undecided whether to kill her off, and so make sure of a good specimen for the cabinet, or to keep her alive for a few days longer. I had not observed that any pairing had taken place during the two days that the three had been together, and when a week passed and no ova were laid, I quite gave up hopes of any more, as my experience with wild imagines has always gone to prove that, unless ova are deposited immediately after capture they are very seldom laid afterwards. She was such a beautiful example, however, and seemed so active and vigorous, that I thought I would experiment and see how long I could keep her alive. Accordingly, after some ten days' confinement, I thought I would try her with a little sugar and water. I introduced a drop into the glass, and to my intense surprise she at once fed from it, lapping the sweet liquid quite greedily. After this, I fed her at intervals of a few days, always with the same result, and by this means I kept her alive for just a month. I found her dead on August 28th, and even then she made a very fair cabinet specimen.

This small experiment was very interesting to me, as I did not think the imaginal existence of a Chrysopid in a wild state extended to so long a period; and it also suggested to me, that possibly Aphides may play an important part in the food of the imagines, as well as of the larvæ, by providing them with honey dew. But the most interesting feature of my second female's existence was that she provided me with seventeen more ova. I suppose she must have paired with the odd male when I put them all together on July 28th. On August 12th I found eight ova on the fir "needles." By the 14th two more had been laid. Another on the 15th, yet another on the 16th, and five more on the 18th.

The first laid ova hatched on the 16th and 17th, and others followed on August 24th, 25th, and 28th. These larvæ took longer to feed up than the first one, the larval period lasting nearly a month. This I think was owing to the colder weather. The fortnight of the first larva's existence comprised the only hot spell of weather which we experienced during the very wet and cold summer of 1909, and I have always found that the larvæ of the *Chrysopidæ* develop much more rapidly in heat than in a cold temperature, when they seem to become sluggish, and to show a reluctance to feed.

Only four of these larvæ emerged successfully on the following dates, May 30th, June 7th, June 10th, June 11th, of 1910. Of the rest, I preserved three in formalin at different periods of growth; several of the ova were destroyed by the emerging larvæ, which are most dangerous in this respect, frequently attacking the ova near them before one has had time to realise they are clear of their egg shells. One larva was attacked when full grown and on the point of spinning and eaten by another and larger individual. One or two also got disturbed in spinning, and attempted to pupate without covering, a proceeding I have always found fatal to successful emergence. One other imago emerged successfully, but was unable to cast its pupal covering, and died in a crippled condition.

*C. dorsalis* is, to my thinking, quite the handsomest British representative of the family. The brilliant "apple-green" of the body parts contrasts most vividly with the deep, almost velvety blackness of the various markings. The *eyes* are a brilliant bronzy-green, with a coppery sheen on them. The *head* parts are yellow. A dark ring runs round the *eyes*, and there are two other distinct dark markings. The *antennæ* are yellowish, darker ringed. The first joint is yellow, the rings becoming closer together towards the apex, which gives the antennæ the appearance of gradually deepening in colour. The *palypi* are dark madder ringed with straw-colour. The *wings* are very iridescent and somewhat thickly clothed with hairs posteriorly. The coloration of the venation is peculiar, and as far as I have observed constant. It is somewhat complicated and best explained by the Plate. The stigma is of a lovely soft shade of quiet olive, which gives the finishing touch to an exquisite combination of colour. Most of the imagines have a peculiar diamond-shaped mark, black, on the throat, round which is a suffusion of faint turquoise blue. The legs are green, black haired, the joints of the tarsi being much darkened with brown. A point of distinction, and of great structural importance, between *C. dorsalis* and *C. perla* (which species it most resembles in Britain) is that the tarsal claws are simple in *dorsalis*, and much dilated in *perla*. This point of difference is shown in the Plate, by a drawing taken from a photograph, for which I am much indebted to Mr. A. E. Tonge, and also to Dr. Chapman, who kindly prepared the slides from which the photographs were taken. Mr. Tonge has also kindly "manipulated" a very imperfect negative of the larva of *C. dorsalis*, which now gives some idea of the general appearance and markings, and for this I also owe him many thanks, as otherwise my paper would have had to appear without any representation of the larva.

The ova of *C. dorsalis* are 0.8 mm. in length, ovoid in form, and of a beautiful shade of full, rich green. They are attached to the footstalks by the smaller end, and are laid singly and not in a cluster, as in the case of some other species. The footstalks measure about  $3\frac{1}{2}$  mm. Emergence takes place from the apex of the ovum. I do not think the shells are eaten by the young larvæ, the actual egress being made by the rupture of the shell through the struggles of the young larva within. By the second day a change of colour begins to take place. The ovum darkens at one side, the apex and remaining portion showing a light yellowish shade of green. On the fifth day, the ovum appeared greyish to the naked eye, but through a lens the embryo could plainly be seen showing through the transparent shell, the rings of the body appearing as transverse bars. The first ovum hatched on the eighth day, but others emerged on the ninth, and some on the tenth day after oviposition.

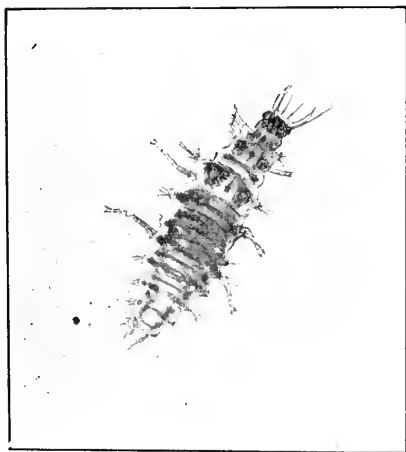
The larvæ, when newly hatched, measure just under 2 mm. in length. Colour, transparent whitish. Head with characteristic markings, and eyes a faint brown. Sucking spears and antennæ white, transparent; legs ditto. Thorax pale yellowish-green. Abdomen ringed with reddish-brown. Warts with two whitish hairs, which are long in this species, giving it in general appearance a very hairy look. With reference to the head markings, I may remark here, that I have found these constant and also distinct in every species of *Chrysopa* which I have yet bred; indeed, I think it should be quite easy to identify different species in the larval stage from these markings alone. I am trying to collect drawings or photographs of each of our British species, and should be very glad to receive larvæ of any I have not yet been able to meet with.

The newly hatched larvæ remained motionless for nearly four hours after emergence, and some of them, as I found to my cost when too late, attacked other ova lying near them, if not removed as soon as activity commenced. I could not discover more than two ecdyses, though it seems difficult to believe that the larva can attain its full size, 8 to 9 mm., with only two changes. The first change seems to take place about the fourth or fifth day, the second from four days to a week or so afterwards, the period varying with the rapidity or otherwise of the feeding up. When full grown the larvæ become much more sluggish. In general appearance they strike one as very hairy, but I do not think they show any real disposition to cover themselves with Aphis skins, though these frequently got entangled in the long hairs, and were involuntarily carried about. When a change of skin is effected the larva attaches itself to some convenient spot by its tail, hanging head downwards. The change is complete, even to the sucking spears.

The most striking feature in the general appearance of the larvæ is the conspicuous marking of the meso- and meta-thorax. These segments, including the conspicuous warts on the sides, are wholly dark brown, with the exception of a quadrate-shaped spot in the middle of each of a lighter shade. The rest of the markings are of the complicated order general to the Chrysopids, and after one or two attempts, I quite failed to get anything like a life-like drawing, which

I much regret. A few details, noted down at the time, are perhaps better than nothing; but the larvæ of all Chrysopids are most difficult to describe in such a way as to give any real idea of them.

The length of the larvæ at the second change is 5 mm. When fully grown they increase to about 8 mm.



In the last skin the head is shining whitish. Characteristic markings and eyes very dark brown, almost black, a dark line running through the eyes. Sucking spears, pale madder-brown, crimson at the tips. Palpi transparent whitish shading to madder at the tips. Legs transparent whitish. Tarsi brownish, ringed with dark fuscous, knees brown. Thorax whitish-yellow, with dark madder markings. A large wart at the angle of each segment from which

springs from 6—9 black hairs. Abdomen pale green with dark madder-markings. The first six segments have warts at the sides, whitish, with 5—10 long black and white hairs mixed. Two second middle rows of smaller warts run down the back of these segments, one on each side of the dividing line, and pale greenish in colour. The central line is dark madder and runs down the whole length of the back, from the prothorax to the tail. The underneath parts are pale green, fading to whitish at the sides, which shows up as a conspicuous white line against the dark upper parts when the larva is viewed sideways. Two broad madder stripes run down the underneath part of the abdomen.

The cocoons were spun in the folds of a leaf or in any convenient place. They measure about 4 mm. in length, and are longer than broad. They do not differ from the ordinary Chrysopid pattern. Emergence takes place from the apex, the cocoons opening by means of a small lid. The pupal covering is cast very quickly, the imago escaping by a slit in the thorax. In all cases where emergence took place successfully, it did not occur until the following spring.

The accompanying table gives the complete dates of the life-history of two of the larvæ. The first one completed its larval existence in a fortnight, owing to the high temperature prevailing at the time; the second, hatching later, took almost twice as long.

Ovum laid.	Hatched.	1st Change.	2nd Change.	Spin up.	Emerged.
July 29th ...	Aug. 6th ...	Aug. 10th ...	Aug. 14th ...	Aug. 20th ...	May 20th
Aug. 18th ...	Aug. 28th...	Sept. 3rd ...	Sept. 10th ...	Sept. 24th ...	June 10th

*Chrysopa dorsalis* was first discovered in England by the late Mr. Alfred Beaumont, at Oxshott, in Surrey, on July 7th, 1900. It was subsequently described by the late Mr. McLachlan in the Ent. Mo. Mag., vol. xxxvii, p. 39. Since then I am not aware of its having occurred in any other British locality, with the exception of the one in Norfolk, from which the specimens I received were sent.

Before bringing this paper to a close, I should like to place on record my indebtedness to Mr. Atmore for his kindness in enabling me to breed this handsome and rare British species. I had long cherished a wish to work out its life-history, but it was a desire I never expected to see realised, so my pleasure was all the greater; and more particularly, as the insects were sent in response to a casually expressed wish, contained in some correspondence which I had had with Mr. Atmore a year previously. I only wish I had been better qualified to reap to the full the advantage of an experience which falls to the lot of few, the delight of watching and recording for the first time the metamorphoses of a hitherto unobserved British insect. I trust Mr. Atmore may be able to supplement these few notes, at some future date, with further observations taken in the field, in his unique position of being able to study the insects in their natural habitat and surroundings.

Worksop, Notts.:

December 2nd, 1910.

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FURTHER NOTES ON *CHRYSOPA DORSALIS*, BURM.

BY E. A. ATMORE, F.E.S.

Miss Alderson has very kindly forwarded to me her manuscript "Notes on *C. dorsalis*" prior to their publication in this Magazine, thus giving me an opportunity of supplementing them with observations of my own. And first of all, I heartily congratulate Miss Alderson upon the success she has achieved in rearing this interesting insect from the egg. Moreover, I willingly accede to her request that I should put on record a little of my experience of this Chrysopid. It is quite true that it has been my good fortune to be able to watch

the habits of this beautiful insect in its restricted Norfolk haunts for the last few years, and I trust that these additional notes may not be without interest to some of your readers.

In some seasons *C. dorsalis* puts in an appearance here at the end of June, but as a rule it is not to be met with until about July 3rd to the 7th or 8th, and perhaps about the middle of July is the best time to search for it in normal seasons, although I have met with stragglers in the first few days of August, which, however, is quite the exception. The live specimens I sent to my correspondent were three out of sixteen which I captured on July 27th, 1909, which goes to show that the insect was fairly plentiful at that late date of the month. Looking up my notes, I find that *C. dorsalis* was by no means uncommon in 1906; that it occurred in greater numbers in 1907 and 1908; that it was not so plentiful in 1909, and was comparatively scarce in 1910, when a very few only were observed. I suspect that the general scarcity of many insects in this district in the last two years, doubtless caused by the prevalence of abnormally wet and cold weather with very little sunshine, would also account in a great measure for the noticeable scarcity of *Chrysopidae*. I quite endorse Miss Alderson's remark that *C. dorsalis* is a very handsome species, and the points of distinction between *C. dorsalis* and *C. perla* are so fully given by her, that it is not necessary for me to enumerate them here. But, I may say further, from a careful examination of scores of specimens, that the markings and points by which the subject of these notes should be readily distinguished from the common *C. perla*, its closest British ally, are fairly constant and reliable. The black subcosta is alone sufficient to separate it at a glance from *C. perla*, and of course the important structural differences in the tarsal claws of the two species as shown in the Plate should not be omitted.

And now for the habits of the two species:—The wings of *C. dorsalis* are stronger than those of *C. perla*, and from this circumstance, as might be expected, the former has a much more powerful flight, and is in every way more restless and active. *C. dorsalis* is never seen on the wing in the day time, unless disturbed from the Scotch fir trees to which it must be exclusively attached, since I have never beaten out a specimen from any other tree. When disturbed by the beating stick or otherwise, it generally flies out vigorously to a considerable distance, unless other fir trees are near, in which case it makes at once for them, settles in the branches, and quickly hides therein. Nor does it fly out therefrom at one's approach, unless the branches are again disturbed. But so active is *C. dorsalis* on the

wing (the most active of all the species with which I am acquainted), that it is not always easily captured.

The flight of *C. perla*, on the other hand, is heavy, or perhaps would be best described as weak in comparison, and when disturbed it flies along very slowly, and is therefore far more readily netted. *C. perla* seems also to be much attached to Scotch fir and other fir trees, but not exclusively so, for I have disturbed many specimens from other trees, particularly from birch and willow. Sometimes both species are dislodged at the same time from Scotch fir, but I have never found any difficulty in recognising *C. dorsalis* on the wing, so conspicuous is it by its darker colour and more rapid flight.

Both species when disturbed resemble each other in one respect, viz., that they will sometimes fly at once to the ground. Moreover, both species fly naturally at dusk, and then it is that the slower flight of *C. perla* is most marked, and of course nearly all the specimens captured at twilight or dusk will be *C. perla*, the rapid flight and darker colour of the other species making it more difficult to see, and thus enabling it to get away.

In common with the *Chrysopidae* generally, *C. dorsalis*, when handled, emits a peculiarly disgusting odour: but even in this respect the principal subject of these notes compares favourably with *C. perla*, which probably may well be considered to be the most "odoriferous" of all the British Chrysopids.

King's Lynn, Norfolk:

December, 1910.

#### EXPLANATION OF PLATE I.

Ova of *Chrysopa dorsalis*  $\times 10$ .

- |   |                  |
|---|------------------|
| 1 —1st day .....  | } ...Coloration. |
| 2 —2nd day .....  |                  |
| 3 —3rd day .....  |                  |
| 4 —Body markings of <i>C. dorsalis</i> $\times 3\frac{1}{2}$ .              |                  |
| 5 —Ova on Scotch Fir—natural size.  |                  |
| 6 —Head markings of <i>C. dorsalis</i> —larva.                              |                  |
| 7 —Wings of <i>C. dorsalis</i> $\times 4$ , showing coloration of venation. |                  |
| 8 —Tarsal claws of <i>C. dorsalis</i> (simple).                             |                  |
| 8a— „ „ <i>C. perla</i> (much dilated).                                     |                  |

(From a photograph by Mr. A. Tonge, magnification 72 diameters).



A NEW BRITISH *QUEDIUS*.

BY D. SHARP, M.A., F.R.S.

*QUEDIUS HAMMIANUS*, *sp. n.*

*Q.* (s. str. Ganglb.). *Elongatus, subparallelus, niger, elytris rufis, antennis pedibusque pallide rufis, tibiis femoribus plus minusve infuscatis; elytris thorace parum brevioribus.* *Long. corp., 15 mm., lat., 2 $\frac{1}{3}$  mm.*

*Hab.* : ANGLIA.

This species is very closely allied to *Q. molochinus*, but is perfectly distinct; it is a little larger, perceptibly broader, brighter in colour, the elytra are just a little longer, the wings are 7 mm. long and pointed (in *molochinus* they are 4 $\frac{1}{2}$  mm. long and very obtuse), and subtruncate at the extremity. If the wings are cut off so as to exhibit the full length, then  $\frac{1}{2}$  mm. should be added to the above measurements. The ædeagus shows good distinctions; but the external abdominal characters of the two are very much alike.

I have named this insect in honour of Mr. A. H. Hamm, of the Oxford University Museum, an excellent Naturalist and a kind friend. The species was pointed out to me as distinct by the late G. R. Crotch quite forty years ago, but I have not specially investigated it until now. Apparently it is rather rare, and is probably a coast insect, as I have found it only at Deal, Strood, Lymington and Hayling Island.

Brockenhurst:

February 10th, 1911.

*BLEDIUS FRACTICORNIS* AND ITS BRITISH ALLIES.

BY D. SHARP, M.A., F.R.S.

This group of species is distinguished by there being no open chink on the side of the prothorax, by the pronotum possessing a channel on the middle, and by the existence of a rather large delicate membrane on the hind part of the fifth ventral segment in the male. *B. fracticornis* is the type of the genus *Tadunus* of Schiödte. In his genus *Baryus* (of which *pallipes* is the type) there is an open chink, over the coxæ, on the prothorax, and the males do not have a membrane on the fifth ventral plate.

(1)—*BLEDIUS FRACTICORNIS*, Er.

The species standing under this name in our collections in this country is, I think, really the *B. fracticornis* of Erichson, but it can scarcely be the *Staphylinus fracticornis* of Paykull, who says "thorax subtilissime punctatus . . . elytra subtilissime punctata . . . pedes fusco-brunnei." Erichson quoted Paykull as the originator of the name, but he does not appear to have seen the specimens in

Paykull's collection. Paykull cites Gyllenhal as the captor of his species, and Erichson appears to have received many specimens from him. The probability therefore is that as no other *Bledii* were described by Paykull,\* though he wrote a Monograph of the Swedish *Staphylinidae*, that he mixed more than one species under the name of *fracticornis*, and that Gyllenhal subsequently sent an exponent of our *fracticornis* to Erichson as an example of Paykull's species. However that may be, I think we ought to accept Erichson's decision.

*B. fracticornis* appears to be far from abundant in this country. I have myself found only one specimen at Hammersmith Marshes, April 16th, 1863; but Mr. de la Garde finds it at Braunton, and Mr. Champion at Woking. Large examples of *B. femoralis* are apt to be confounded with it, but *fracticornis* is rather larger and broader, has clear yellow legs and antennæ, and the sexual characters of the two are different. In *fracticornis* the hind margin of the fifth ventral plate terminates in the middle as a delicate white transparent membrane; in front this membrane joins the body of the plate in a very evident curvilinear manner, and at the point of junction on the hind margin of the two tissues there is thus formed a very obtuse, but distinct, angle, which does not project as a tooth.

(2)—*BLEDIUS LÆTIOR*, Muls. & Rey.

We have in England a *Bledius* considered to be a variety of *fracticornis* with red elytra. Though it appears to be very rare, I have no doubt that it is a distinct species, and I believe that it will prove to be the *B. lætior* of Mulsant & Rey. All that is known about the species is a remark made by the French authors at the end of their description of *B. fracticornis* (Col. Fr., Oxytéliens, p. 151), "La couleur des élytres passe du noir au roux de poix et même au roux vif à région scutellaire à peine rembrunie. Dans cette dernière variété, on trouve une forme un peu moindre, à angles postérieurs du prothorax un peu moins arrondis, et qui a tout l'air d'une espèce particulière (*Bledius lætior*, nobis)."

This applies perfectly to the insect under consideration, except as to size. The British insect is almost the same length as *B. fracticornis*, but is slightly broader; it has thicker legs, the elytra are bright red, more or less blackish about the base and suture, the thorax is broader, so as to be distinctly transverse, and the hind angles have not so completely disappeared. In the male the membrane on the margin of the fifth ventral segment is less extensive, and there is no angle formed on the hind margin at its junction with the harder tissue.

In the European Catalogue *B. lætior* is placed as a synonym of *B. fracticornis* var. *elongatus*, Mannh. This, however, is certainly

\* Paykull described, it is true, *Staphylinus tricornis*, but he says it was found in dung, and he says nothing about its geniculate antennæ, though he considered that feature the important diagnostic of his *S. fracticornis*.

erroneous. The Russian Author gives *elongatus* as a distinct species (Précis &c., 1830, p. 45) "*B. elongatus* mihi. *Elongatus*, niger, subnitidus, profunde punctatus, elytrorum macula oblonga rufa, pedibus pallidis, thorace orbiculato, obsolete canaliculato. Petropoli in terra argillacea semel captus. Medius quasi inter *Bl. tricoruem* et *fracticornem*, illo parum brevior, sed fere duplo angustior, thorace convexiore mutico et colore præterea facile dignoscitur."

Mannerheim received his "*fracticornis*" from Gyllenhal (as I suppose Erichson to have done), and as I think whatever his *elongatus* may be, it is not *lætiior*, Muls. We shall do well to apply the name *lætiior* to our British insect till further information shall be produced.

*B. lætiior* was found in Yorkshire (Scarborough or neighbourhood) by W. Lawson, and four specimens from this source are extant in Mr. Champion's collection, 3 & 1 ♀ (one of which he has kindly given me). There are 2 ♀ in my own collection, one of which I found at Hammersmith Marshes, May 2nd, 1868, while the other has no label; and in Mr. de la Garde's collection a male, originally from the Crotch collection.

(3)—*B. sp. n. ?*

In Mr. Champion's collection there is a male I cannot reconcile with any description. It is slightly larger than *B. fracticornis*, and has the elytra of a dark red colour. The 5th ventral is abruptly and deeply emarginate, the emargination being longer and narrower than in *fracticornis* or *lætiior*. This individual came originally from the Power collection.\* I myself possess a female which I have little doubt is of the same species. If the number "1224" it bears be in my handwriting, this specimen was found in flood refuse on the banks of the Nith below Thornhill, September 4th, 1875. But I doubt whether it is my handwriting, and if not the specimen is from some other source; possibly from Dr. Power,

(4)—*B. FEMORALIS*, Gyll.

This species is extremely close to *B. fracticornis*, but is on the average a little smaller, with somewhat darker legs and base of the antennæ, and the male characters are more pronounced, there being a very distinct tooth on each side of the 5th ventral segment at the junction of the membranous part with the harder part. This is doubtless the *Oxytelus femoralis* of Gyllenhal; he gave this name to the species to distinguish it from the paler legged *fracticornis*. Erichson did not know the sexes.

*B. femoralis* in the south of England is much commoner than *fracticornis*, but I have not seen it from the north, I have known large specimens to be named *fracticornis* in collections. Both the species vary a good deal, and *femoralis* often has the elytra of a brown or brown-red colour.

I may here correct an error in my note as to *Bledius terebrans*, *antè* p. 34: "Closely," the last word of line 7, is a mistake for "coarsely."

Brockenhurst: Jan. 30th, 1911

\*Similar specimens in the Power collection are labelled as having been taken at Brentford.—G. C. C.

DESCRIPTIONS OF THREE NEW SCANDINAVIAN  
*THYSANOPTERA (TUBULIFERA)*.

BY RICHARD S. BAGNALL, F.L.S.

In June, 1909, I had occasion to journey to Norway on certain business matters, and returning by Sweden and Denmark I was able to do a little collecting in each of these countries, devoting my attention chiefly to the *Thysanoptera* and a section of the *Collembola*. In these groups I was fortunate enough to discover several new species, of which three, belonging to the *Tubulifera*, are here described.

I was greatly impressed by the large variety of thrips that were to be seen in the greatest profusion on the hills and in the beautiful forests and fields of southern Norway, and believe that many species yet remain to be discovered in that country, whilst a number of those described by Reuter from Finland will undoubtedly be met with.

SUB-ORDER TUBULIFERA.

CRYPTOTHRIPS MAJOR, *sp. nov.*

♀. Length, 3·4 mm.

Blackish-brown, segmentation of abdomen lighter, third antennal joint yellow tinged with light brown towards apex.

Closely related to *C. latus*, Uzel, and *C. nigripes*, Rent. Head with cheeks straight, widening from eyes to base, where it is widest; space between eyes equal to twice the breadth of an eye; ocelli small, posterior pair very widely separated and placed above a line drawn through posterior third of eyes and close to their inner margins. Antennæ more than one and a half times as long as the head; relative length of joints, 5 : 7 : 11 : 10 : 10 : 8·5 : 5·5 : 5.

Prothorax transverse, only slightly more than one-half as long as the head and more than twice as broad as long. Spine at anterior angle moderately long, and pair at posterior angles very long (one-half the length of prothorax), and slightly curved. A minute seta on each side of the median line near posterior margin.

Pterothorax transverse; wings absent. Legs as in *C. latus*, tarsi only slightly lighter in colour than the tibiæ. Abdomen oblong-ovate, one and one half times as broad as prothorax, sides subparallel to the sixth segment and thence gradually converging to base of tube. Tube two-thirds the length of head, sides straight, converging from base to tip; twice as broad at base as at tip and two and three-quarters as long as broad at base. Terminal hairs and those at apex of ninth segment two-thirds the length of tube; other abdominal hairs short, moderately strong and light coloured.

*Habitat*: NORWAY, a single example taken by beating the leaves of a lime tree. Bygdø, near Christiania, June 27th, 1909.

From *C. nigripes* this species may be separated by its larger size, its shorter and broader head (twice as long as broad in *C. nigripes*) and relatively longer antennæ. *C. major* also closely approaches

*C. latus*, but it is much larger, has the abdomen distinctly oblong-ovate (instead of broadly oviform), and possesses much shorter abdominal bristles.

From the Nearectic form *C. rectangularis*, Hood, the present species differs in having a longer bristle at each anterior angle of the prothorax, and in the apparent absence of the posterior marginal pair.

GENUS HINDSIANA, *Karuy*, 1910.

*Hindsiana flavicincta*, an *Anthothrips*-like form, has recently been described by Karuy from Austria as the type of a new genus. I had had the same form in my possession (from Hungary) and set aside for description for some time, and recently recording it I then accepted Karuy's genus with some hesitation.\* Whilst very distinct from *H. flavicincta* the following species possesses certain features which serve to show its affinities with that insect, and I would point out an important character common to both of them—namely, the forms and positions of the abdominal bristles. In some recent memoirs I have suggested that taxonomically the chaetotaxy is of considerable importance in the study of the *Thysanoptera*, and I fully believe that this will be amply proved by further research.

HINDSIANA MELALEUCA, *sp. nov.*

♀. Length, 1.6 mm.; breadth of mesothorax 0.22 mm. Exceptionally long and narrow, being seven times as long as its breadth across the middle of the abdomen.

Colour light lemon-yellow, almost white, head and prothorax uniform dark brown, pterothorax a lighter shade of brown and yellowish towards the base of abdomen; tube same colour as the head, darkest across basal-third and at sides; ninth abdominal segment light brown shaded to yellowish towards base. Antennæ with the first joint of a rather deeper yellow, and the seventh and eighth joints brown. Fore-coxæ brown and fore-femur basally brown, but shaded distally to yellow; intermediate coxæ light yellowish-brown.

Head one and one-quarter times as long as broad through centre, cheeks very slightly and gently widened behind eyes and thence parallel to base; eyes small, occupying laterally a little more than one-fifth the total length of head, interocular space twice the breadth of one of them; ocelli small, the space between hind pair about three times the diameter of one of them; front ocellus overhanging, posterior pair above a line drawn across centre of eyes and near their inner margins; postocular bristles knobbed, erect, and placed well back and rather near lateral margins. Mouth-cone only reaching one-third of the distance across prosternum, broadly rounded at tip, and two-fifths as long as broad at base. Maxillary palpi long and stout, with an exceptionally long sense-bristle and a short one at tip. Antennæ one and two-thirds as long as

\* Bagnall, *Ann. Mus. Nat. Hung.*, 1910.

head; relative lengths of joints 8: 14: 14: 16: 14: 12: 14: 8.5; second joint constricted at base and truncate at apex, three-fifths as broad as long; third obconical, fourth and fifth broadly claviform, sixth oviform and constricted near base, seventh elongated, more than twice as long as broad and truncate at apex, the apical joint narrowed to tip; joints 2—4 equally broad and 6 and 7 two-thirds as broad as either of them. A pair of light-coloured and indistinct sense-cones on each of the segments 3—6.

Prothorax three-quarters the length of head, and one and two-fifths as broad across hind angles as long, or one and three-quarters as wide across fore-coxæ as long; fore-margin narrowly emarginate, hind margin arcuate. Bristles at posterior and anterior angles and the mid-lateral pair present, erect and knobbed, others apparently obsolete; the pair at posterior angles the longest, being about one-third as long as the prothorax and half as long again as the fore-coxal spine, which is similarly knobbed. Pterothorax about as broad as the prothorax, narrower than width across the fore-coxæ, longer than broad, the metathorax being exceptionally long. Wings reaching to about the fifth abdominal segment, fore-wing apparently constricted near middle, cilia long and widely separated; median vein absent. Legs stout, fore-femur long and less than one-half as broad as long; all the tarsi dark brown on the chitinous part of the second segment on the inner side; fore-tarsal tooth apparently absent. Two exceptionally long and slender bristles at apical third of intermediate tibiae and a similar bristle on hind tibia, which has a short spine at apex without.

Abdomen occupying two-thirds the total length of the insect; very gently and slightly widened to fifth segment and narrowing from seventh to base of tube. Tube slightly more than one-half as long as head, twice as long as broad at base and one-half as wide at tip as at base; terminal bristles exceptionally long, tapering and colourless towards tips, almost twice as long as the tube; those at apex of ninth abdominal segment similar to, and as long as, the terminal ones. Bristles on eighth segment knobbed, lateral bristle of seventh segment rather long and tapering, and apparently not knobbed, all other abdominal hairs shorter, straight and knobbed.

*Habitat*: DENMARK, a single example taken on a cruciferous flower in the Palm House of the Botanical Gardens, Copenhagen, June 30th, 1909.

PHLEOTHRIPS BREVICOLLIS, *sp. nov.*

♀. Length, 2.5 mm.; breadth of mesothorax 0.48 mm.

Like *Phleothrips coriaceus*; differing in having the third antennal joint much shorter, subequal in length to the fourth and having the distal half shaded with brown, whilst all the antennal joints are relatively shorter and broader.

The head is one-fifth longer than broad and has the cheeks set with fewer and much more minute spine-set warts, whilst the surface of the head is less strongly coriaceous, and the fore-femora are almost smooth. The mouth-cone is rather pointed and reaches to the base of the prosternum.

The fore-tibia is shaded with brown, darkest at the outer edge, and is clear

yellow at apex; the intermediate and hind-tibiæ are yellow at knees, but only slightly tinged with yellowish-brown at apices; and the rows of short, stout spines so conspicuous in the hind-tibiæ of *P. coriaceus* are apparently obsolete in this species. The wings are broad and lightly shaded with brown to the apical third.

The prothorax is strongly transverse, only two-thirds as long as the head and one-half as long as broad; the bristles are short and knobbed, the pair at posterior angles being the longest; and the spines on the fore-coxæ are short and stout. The tube is five-sixths as long as the head and about three and one-half times as long as broad at basal third, thus being slightly shorter and stouter than in *P. coriaceus*. The rather long lateral abdominal bristles seen in *P. coriaceus* are replaced by quite short ones in the present species.

*Habitat*: NORWAY, one female taken by beating lime trees at Bygdo, near Christiania, June 27th, 1909, together with *Dendrothrips tilix*, Uzel, numerous examples of an apparently new species of *Æolothrips* and larvæ, *Cephalothrips monilicornis* (Reut.), and *Cryptothrips major*, sp. n.

Easily recognised by the form of antennæ, smoother cheeks, the shorter and more transverse prothorax, with shorter and more noticeably clubbed setæ, and the shorter abdominal bristles, which are also differently arranged.

Penshaw Lodge,

Penshaw, Co. Durham:

November 7th, 1910.

## ON THE OCCURRENCE IN NORTH AMERICA OF THE EUROPEAN *ERISTALIS ÆSTRACEUS*, L.

BY ERNEST E. AUSTEN.

More than sixty years ago, under the name *Syrphus æstriformis*, the species mentioned in the title of this note was re-described by Walker\* from a single female collected by Mr. Barnston at Martin's Falls, Albany River, Ontario, Canada, about the year 1843. Since then the insect appears never to have been met with again in North America, and its true designation has remained entirely unsuspected. Osten Sacken, who examined Walker's type in the British Museum, pointed out that it is "a rather peculiar *Eristalis*,"† and Williston,‡ in his "Synopsis," merely reproduced Walker's original description and Osten Sacken's note without further comment.

\* F. Walker, List of the Specimens of Dipterous Insects in the Collection of the British Museum. Part 111, p. 573 (1849).

† C. R. Osten Sacken, Catalogue of the described Diptera of North America, p. 249, note 227 (1878).

‡ S. W. Williston, Synopsis of the North American Syrphidæ (Bulletin of the United States National Museum, No. 31), pp. 176, 177 (1886).

In July, 1910, a beautiful female of *Eristalis ostraceus*, L., was taken by Herr Quednau, Königlichcr Förster, in the vicinity of Pait, near Gross Krauleiden, East Prussia, on the blossoms of either wild radish (*Raphanus raphanistrum*, L.) or purple loosestrife (*Lythrum salicaria*, L.). This specimen was acquired by the Hon. N. C. Rothschild, who most generously presented it to the British Museum (Natural History), and it was while determining it with a view to its incorporation into the National Collection that the writer made the discovery that *Eristalis* (*Syrphus*) *œstriformis*, Walk., is a synonym of *E. œstraceus* (*Musca œstracea*), L. Thus one more species is added to the already fairly lengthy list of *Syrphidæ* known to be common to Europe and North America.

*Eristalis œstraceus*, which measures some 1.4 mm. (rather more than half an inch) in length, exhibits, in the case of the male at any rate, a general resemblance to *E. intricarius*, L., but is distinguishable at once owing to the presence of a large, quadrate, dark brown blotch (wanting or indistinct in the male) on each wing; a further distinctive character is that in *E. œstraceus* the first three joints of the middle and hind tarsi are ochraceous-buff or ochraceous-rufous. The head and body of the female *E. œstraceus* are black, except the scutellum, which is straw-yellow; the face is clothed on each side with whitish-yellow pollen and hair, there is a broad band of similarly coloured hair occupying the scutellum and hind margin of the main portion of the dorsum of the thorax, the first abdominal segment is greyish-pollinose and bears whitish-yellow hair, and the hairy covering of the distal extremity of the abdomen is orange-ochraceous or ochre-yellow.

British Museum (Natural History):  
January 26th, 1911.

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*The collections, &c., of the late Mr. Edward Saunders.*—We are indebted to the Rev. F. D. Morice for the following information as to the disposal of the collections, &c., formed by the late Mr. Edward Saunders, F.R.S., which may be useful to those interested in the Orders of Insects that formed the chief objects of the study and work of our late esteemed colleague.

The entire collections of British and exotic *Hymenoptera*, the Palæartic *Hemiptera*, and all the Microscopic preparations, including the originals figured by or for him in his various illustrated publications, have been acquired by, or presented to, the nation, and are now in the Natural History Museum at South Kensington. The important series of British *Hemiptera* was purchased by Dr. G. B. Longstaff, and generously given by him to the Hope Department of the Oxford University Museum. Dr. Malcolm Burr has acquired the *Orthoptera*, and the Collection of British *Coleoptera* has been purchased by Mr T. G. Bishop, of Beattock, N.B. Mr. Saunders's fine library of Entomological works was recently dispersed by auction at Messrs. Stevens's rooms, and his few unpublished papers are in the hands of Mr. Morice.



*Re-capture of Colon microps, Czwal.*—Since publishing my table of the British species of *Colon* (Ent. Mo. Mag., vol. xlvi, p. 268), Mr. Champion has kindly sent me a few specimens of the genus to examine. One of these I have no doubt is the ♂ of the long lost *C. microps*, Czwal., which I had excluded from my table on the ground that it had been described twenty-nine years ago from a single ♀ example, and had not occurred since. The specimen answers very accurately in all essential details to Czwalina's description. It is a very distinct species, being perhaps most closely related to *C. brunneum*. The following alteration to my table will have to be made to admit it:—

*a\**. Form parallel-sided; sides of thorax slightly sinuate before posterior angles.

*a†*. Size larger; thorax finely punctured, only slightly more so than elytra .....*C. dentipes*, Sahlb.

*b†*. Size smaller; thorax moderately strongly punctured, much more so than elytra .....*C. microps*, Czwal.

*C. microps* is of about the average size of *C. brunneum*, and resembles it in colour, and the shape of the club of the antennæ and of the anterior tibia, but is much narrower and more parallel-sided. The thorax is not so transverse, being more narrowed in front, and is slightly narrower at the base than the elytra. The sides of the thorax are rather strongly narrowed towards the base, just before which they are slightly sinuate, and the posterior angles are sharp right angles. The thorax is shining, as in *C. brunneum*, but the punctuation is rather finer and closer. The elytra are very finely punctured, much more so than the thorax and than in *C. brunneum*.

In general shape it most closely resembles *C. dentipes*, but is much smaller, the sides of the elytra are less sinuate towards the base, the thorax is more strongly and not so closely punctured. The punctuation of the elytra, although as fine, is more diffuse, and the pubescence is longer and not so dense. The ♂ has a small tooth in the middle of the posterior femur, in this respect resembling *C. brunneum*. Mr. Champion's specimen was taken at Cobham, Kent, many years ago.—NORMAN H. JOY, Bradfield, Berks.: February 12th, 1911.

*Further records of Bledius annex, ♂c.*—Dr Sharp has kindly examined all the specimens of black *Bledii* in my collection, and has identified the following species:—*B. filipes*; Sherringham, Aug., 1904. These were taken in much the same situation as those recorded from Overstrand. *B. terebrans*; Southport, May, 1902; given to me by Dr. Chaster. It will probably prove to be a common species there. *B. annex*; Pitlochry, Sept., 1909; one specimen taken in company with *B. pallipes* on the banks of the River Tummel.

I also have specimens of *B. bicornis*, as well as *B. hirtulus*, taken at Wells, Norfolk, in Aug., 1904. Besides these there is a small form of *B. fuscipes* (as well as the type form), from Wells, Norfolk; and an interesting small form of *B. unicornis* from Seilly, April, 1908, the three males of which have the thoracic horn much shorter than usual, and the anterior angles more marked, and the elytra much narrower and shorter.—ID.

*Anisotoma davidiana*, Joy, not synonymous with *A. dubia* v. *bicolor*, Schaum.—I have had the opportunity of comparing my specimens of *A. davidiana* with two examples of *A. dubia* v. *bicolor* named by Dr. Fleischer, and find they are quite distinct. Dr. Fleischer has examined a specimen of *A. davidiana* and declares he has not seen the form before.—1D.

*Colcoptera in Devonshire*.—In continuation of my notes in Ent. Mo. Mag., xlv, pp. 115–117, the following list is, with the exception of *Arena*, restricted to insects that I can record from fresh localities, and includes various species which have previously been overlooked.

SHALDON (1910). *Trechus subnotatus* and *Lesteva fontinalis* (brought forward in Ent. Mo. Mag., xlv, pp. 131 and 109 respectively), *Homalota laevana*, *Crepilodera ventralis* (one on sallow), and \**Otiorrhynchus fuscipes*. BOVEY TRACEY (1909). \**Homalota humeralis*, *H. gagatina*, and *Gymnetron antirrhini*. DAWLISH WARREN (1910). One \**Homalota imbecilla* in old tide rubbish, two *Arena octavii* under seaweed in March, and one *Anisotoma dubia* on the sand-hillocks. SOUTH BRENT (1908). One *Homalota intermedia* from fungus. CHRISTOW (1907). One *Hydroporus celatus* in R. Teign, one \**Orthoperus kluki* from fungus, and an *Orthochætes setiger* by sweeping. EXMINSTER (1910). *Acupalpus erigius*, *Callicerus obscurus*, *Lathrobium longulum*, and (1909) one \**Haliphus heydeni*, in the marshes. BELSTONE, near OKEHAMPTON (1901). One *Hister stercorarius*. LYDFORD (1891). One *Carabus arvensis*, *Taphria nivalis*. BUCKFASTLEIGH (1905). Three *Aleochara mœrens*. KINGSBRIDGE (Christmas, 1907). *Homalota cuspidata* under poplar bark. BRAUNTON (1908) *Hydroporus angustatus*, *H. discretus*, *Homalota humeralis*, \**Stenus ineanus*, and *Ceuthorrhynchus rugulosus*.

During the last fortnight of 1910.—*Aleochara spadicca* (1), *Quedius attenuatus* (1), and *Philonthus albipes* (3), from flood rubbish; *Quedius scintillans*, *Ephistenus globosus* (1), *Apion filirostre* (1), *Ceuthorrhynchus punctiger* (1), and *C. litura*, from rush roots; *Bythinus curtisi* in moss. The record of *Ceuth. triangulum* from here (xlv, p. 87) is erroneous and should be deleted.

In March, 1892, I found a *Strangalia 4-fasciata* (under bark) near Dulverton, but I am unable to say on which side of the Devon-Somerset county border it was.

I am again greatly indebted to Mr. E. A. Newbery for his kindness in verifying difficult species.—PHILIP DE LA GARDE, "Abbottsfield," Braunton, N. Devon: January 20th, 1911.

*Colcoptera at Cheltenham, 1910*.—Although I was able to do very little collecting during a few months' stay at Leckhampton, near Cheltenham, some of the species then obtained may be worthy of note, especially as there appears to be no published list of Gloucestershire *Colcoptera* beyond the few records given in the Rev. W. W. Fowler's work.

\* Not previously recorded for the county, I believe.

*Homalota occulta* (?), *H. fungivora*, *H. subsinuata* (commonly), *Quedius maurus* (1), *Philonthus proximus*, *P. addendus* (1), *P. albipes*, and a *Rhizophagus parallelocollis*, were taken in garden rubbish heaps; one *Scopæus sulcicollis* on a withered cabbage leaf; one *Homalota divisa* among bones; *Pteryx suturalis* from mouldy bark; one *Quedius lateralis* in fungus, in company with a swarm of *Tachinus humeralis*; one *Cryptophagus populi* on door post of house, and one in the scullery window; and *Ptinus sexpunctatus* in an outhouse; several *Mycetæa hirta*, *Cryptophagus bicolor*, and *Atomaria munda*, under boards in an old fowl-shed; and, taken variously, *Amara ovata*, *Oxyypoda annularis*, *Sericoderus lateralis*, *Helocerus claviger*, *Callidium violaceum*, *Tetrops præusta*, *Maydalis pruni*, and *Scolytus multistriatus*.—*Id.*: January 20th, 1911.

*Trichonyx sulcicollis*, Reich., and *Amauronyx* (*Trichonyx*) *märkeli*, Aubé, as myrmecophilous insects.—In the Ent. Mo. Mag., 1910, p. 213, Commander Walker records the capture of these two species, but not in company with ants. As this might give the impression that they only occur with ants by chance, I have written the following short notes:—

*Trichonyx sulcicollis*, Reich.—Reitter says that the species of this genus are generally found with ants (Naturz. Inst. Deutschl. iii, 2, 1885, p. 136), and he records *T. sulcicollis* with *Lasius brunneus* (*l.c.*). Bedell captured it with *Ponera contracta* in the environs of Paris (Ann. Soc. Ent. Fr. 1872, p. 41). Ganglbauer states that *Trichonyx* lives with ants (Käfer von Mitteleuropæ ii, 1895, p. 799), and that *T. sulcicollis* occurs in old trees and tree stumps with *Lasius brunneus* and *Ponera contracta*. It is true, however, that there is only one record of the myrmecophilous habits of this species in this country, when Douglas and Scott took it under bark of old elm stumps in some numbers, in company with ants, at Lee, Kent. Commander Walker kindly indicated the position of the tree in the New Forest in which he and Dr. Sharp took *T. sulcicollis*, and I went down to look for it on July 8th. I must admit that the tree showed no evidence whatever of the presence of ants, past or present, and most of the specimens I took were found in the rotten wood of the tree itself. A fungoid growth was present on, and in, the wood which contained the beetles. Judging by the Continental records, I think this species must be considered in part myrmecophilous.

*Amauronyx märkeli*, Aubé.—Forel records this species as found rarely with *Ponera contracta* at Sion, Valais (Fourmis de la Suisse, 1873, p. 426); Skalitzky found it with red ants (*Myrmica lavinodis*?) in Bohemia (B. E. Z. 1874, p. 127); Wasmann says it occurs frequently with *Tetramorium cæspitum*, near Prague. Ganglbauer writes: The species of this genus are likewise ant-guests. He gives "Central Europe, with *Tetramorium cæspitum* and *Ponera contracta* (*l.c.*)."

In this country it is generally found with ants. The following captures are recorded: Matthews and Crotch, "with *Lasius fuliginosus*" in a tree near Cambridge; F. H. and E. S. Waterhouse, "with a small yellow *Myrmica*" (*Lasius flavus*?) on Seaford Downs; Fowler, "under a stone with ants" at Sandown, I. W. (in his Col. Brit. Isles., vol. ii, p. 98, he writes: "usually in company with ants"); F. O. Pickard-Cambridge, "in a nest of *Lasius flavus*"

at Portland; Beare, "under a stone over a nest of *L. flavus*" on the Chesil Beach; Elliman, "with *Formica fusca*, and *L. flavus*" at Chesham, Bucks; Dollman, "every year since 1905, at Ditchling, generally with *L. flavus*, or a species of *Myrmica*." He has found one or two away from ants, these no doubt were seeking a new nest.

Mr. Collins was good enough to take me to the sand-pit at Cumnor, near Oxford, where he had found this beetle, and I was fortunate enough to capture a specimen. I think the finding of *A. märkeli* in a sand-pit away from ants, only means that it has fallen in. I did, it is true, find an ant's nest under a stone above the sand-pit, and the beetles might easily have come from the place. In any case, I think this insect can only be regarded as a true myrmecophilous species.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: December, 1910.

*Mycetophagus quadriguttatus*, Müll., in Scotland.—In a stable here, amongst the waste grain from the horses' mangers, *Mycetophagus quadriguttatus* occurs in profusion. How long the species has been established there it is impossible to say, but I first observed it some three years ago when I began collecting *Coleoptera*. It is to be found all the year round, though in less abundance during the winter months. Mr. Anderson Fergusson, of Glasgow, informs me that the beetle has not been recorded for Scotland, so that I now have the pleasure of doing so. The following species have been taken in company with it:—*Enicmus minutus*, L., *Cryptophagus dentatus*, Hbst., and *bicolor*, Stm., *Atomaria nigripennis*, Pk., *Ptinus tectus*, Boield., *Niptus crenatus*, F., *Tenebrio obscurus*, F., *Alphitobius piceus*, Ol., *Gnathocerus cornutus*, F., and *Anthicus floralis*, L.—GEORGE A. BROWN, Sunnyside Road, Coatbridge: January 5th, 1911.

*Helophorus tuberculatus*, Gyll., near Coatbridge, N.B.—Two specimens of this rare species of *Helophorus* were taken here last July. They occurred in bare patches of moorland which, except during very dry weather, are saturated with water and very soft. No permanent water, either stagnant or running, occurs within several hundred yards of the place of capture. On the Continent the species is said to occur on peaty ground, and this record is in agreement with that statement.—ID.: January 5th, 1911.

*Xenopsylla cheopis*, Rothsch., in London.—Two specimens of this flea, which is associated with the spread of plague in India, were captured on Brown Rats, *Mus norvegicus*, on February 3rd and 7th of this year, in Guy's Hospital, by Dr. Boycott. As far as we know only one other example of this insect has been taken in this country. Cf. Ent. Mo. Mag., ser. ii, vol. xiv, p. 85 (1903).—N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, W.

*Ellampus truncatus*, Dhb., in the London district.—On July 2nd last year (1910) I took in the garden here at Herne Hill a specimen of the above uncommon Chrysid. Mr. Morice kindly confirmed the determination I made from his Synoptic Table.—RUPERT STENTON, Southwell, Notts.: Jan. 17th, 1911.

*Is Leaf Mining one of the Larval Habits of Aphiochæta?*.—In the January Number of this Magazine for 1910, Mr. Malloch records the breeding, as he believed, of *Phora (Aphiochæta) rufipes* from blotch mines in the leaves of the common turnip. On reading this announcement I was reminded of an old experience of my own, about the time I began seriously to work at the *Diptera*. I had collected one autumn, in what year I forget, the gallery mines of a Dipteron in the root leaves of the carline thistle (*Carlina vulgaris*). They were placed in a pot that had been used in previous years for rearing *Nepticula*, and which had for many months been out of doors, uncovered, and fully exposed to the weather. In it was a layer of half decayed leaves, which I did not remove, thinking it would be just the thing for the grubs to pupate in. Early the following summer, 7 or 8 *Aphiochæta rata* appeared, bred, as I naturally concluded, from the thistle leaves. But when I came to consider the matter more carefully, it seemed possible, indeed probable, that the pabulum had really been the old half-decayed vegetable matter, and that it was this that had tempted a female *rata* to enter and lay her eggs during the time that the pot was open and exposed out of doors. That this was the true explanation, a recent observation seems to show.

Last summer the seedling onions in the garden were badly attacked by *Phorbia citicrura*, and as I had not before met with the insect, I gathered a good supply of the plants and placed them in a covered glass vessel. Very soon the plants rolled into so soft and wet a mass, that the cover had occasionally to be removed to give ventilation. One day as I was taking out a recently emerged *Phorbia*, I noticed in a moist corner a colony of little whitish grubs, living in the semi-liquid stuff. They pupated in good time and produced quite a host of *Aphiochæta rufipes*, the very same species that Mr. Malloch believed he had bred from the blotch-miner of the turnip. The fly is one of the most constant inmates of our houses, and there can be no reasonable doubt that the parent insect in this case had entered the vessel at a time when the cover glass was removed in order to oviposit in the rotting onion plants. If, then, leaf-mining be indeed one of the modes of life of *Aphiochæta*, it has yet to be proved.—JOHN H. WOOD, Tarrington, Hereford: February, 1911.

*Diptera in Perthshire*.—In the volume of this Magazine for 1909, pp. 65—66, I gave a short list of *Diptera* taken in the Blairgowrie district of Perthshire during 1908. The following notes refer to species identified since, most of them having been captured during the last two seasons. Those marked with an asterisk have not, I think, been hitherto recorded from the county.

Passing over the *Nematocera*, a good many species of which have been identified, I may mention *Chrysops relictæ*, Mg., in June resting on shrubs &c., round a small pond, only once seen on the wing; *Tabanus sudeticus*, Zlr., ♀, 11.7.10; \**Dysmachus trigonus*, Mg., several, in June; *Bombylius canescens*, Mik., in some numbers over sandy banks in June and July; *Thereva nobilitata*, F., both sexes, 16.6.10; \**Gloma fuscipennis*, Mg., ♂, 9.7.10; \**Hilara matrona*, Hal., in July and August; \**Dolichopus simplex*, Mg., ♂, 10.7.10; \**D. longitarsis*, Stan., in July; \**Hypophyllus crinipes*, Staeg., ♂, 13.6.10, at Clunie Loch—I

think the third Scottish record for this species; \**Syntormon tarsatus*, Fln., ♂, 18.7.10; \**Chalarus spurius*, Fln., ♂, 26.6.10; \**Pipunculus strobli*, Verr., ♂, 22.6.10, ♀, 17.9.10 in my garden; \**P. sylvaticus*, Mg., ♀, 10.7.10; *Orthoneura elegans*, Mg., ♂, 8.6.10—I have already recorded the ♀; *O. nobilis*, Fln., ♂, 12.7.08; \**O. brevicornis*, Lw., ♂, 8.6.10—I was glad to get this specimen as it enables me to record our three British species. All were taken near the same spot; *Platycheirus discimanus*, Lw., ♂, 30.4.10—my first capture of this early fly; \**Didea intermedia*, Lw., ♀, 4.9.09—I think my specimen belongs to this species; *Syrphus tricinctus*, Fln., in July; *S. compositarum*, Verr., common in July; *S. arcticus*, Ztt., May and June, 1908; *Helophilus hybridus*, Lw., ♂, 1.8.08, my first capture; *Aretophila mussitans*, F., in some numbers at Clunie Loch in September; *Conops quadrifasciata*, Deg., ♂, 4.9.09; \**Lucilia sylvarum*, Mg., ♂, 1.6.09; \**L. splendida*, Mg., ♂, 5.6.08; \**Hyetodesia variabilis*, Fln., fairly common here, but I have not found it elsewhere; *Mydwa nigritella*, Ztt., in June, also new to me; \**Fannia (Homalomyia) sociella*, Ztt., ♂, 5.6.08; \**F. fuscata*, Fln., ♂, 19.7.10; \**Calomyia mollissima*, Hal., in May; \**Spilogaster uliginosa*, Fln., ♂, 9.10.10, on window; \**Cordylura pudica*, Mg., two ♂♂, 27.6.10; \**Gymnometopa tarsea*, Fln., fairly common in June; *Pogonota hircus*, Ztt., I was glad to find this curious fly among *Carex*, &c., at the side of a pond, in June of this year, when sweeping produced a long series; \**Pherbina (Tetunocera) coryleti*, Scop., ♂, 25.6.10; *Loxocera aristata*, Pz., ♀, 16.6.10; *Psilosoma lefebvrei*, Ztt., ♂, 19.7.10; \**Scoptera vibrans*, L., in July; \**Notiphila uliginosa*, Hal., \**N. riparia*, Mg., *N. cinerea*, Fln., and \**N. annulipes*, Stnh., all occur in June.

All the foregoing species are from the immediate neighbourhood of Blairgowrie, and in addition I should like to record the following taken at Kirkmichael, fourteen miles to the north:—*Syrphus grossulariæ*, Mg., the ♂ common, but only one ♀, in July, 1909, along the banks of the Ardlie—in August, 1910, the ♀♀ were in numbers, but I found no ♂♂; *Eristalis rufum*, F., several of both sexes with the last in July; *Chrysochlamys cuprea*, Scop., ♂, 20.8.10; *Sargus flavipes*, Mg., ♀ as prey of ♂ *Empis tessellata*, F., 20.8.10.

*Dryomyza senilis*, Ztt., recently added to the British List (Ent. Mo. Mag., 1910, p. 125), has occurred to me at Blairgowrie in June, and at Kirkmichael in August. I have also examples from Aberfoyle and Comrie, and I believe I found it at Callander in September, 1904, but unfortunately do not appear to have kept any specimens. [There are also specimens in my collection from Polton, Midlothian]. Mr. Collin has kindly confirmed my identification of this species. *Sapromyza affinis*, Ztt., mentioned in the same Paper by Mr. Collin, at p. 170, has been recorded by me from Comrie (Ent. Mo. Mag., 1909, p. 65).—A. E. J. CARTER, Blairgowrie: December, 1910.

## Obituaries.

*James William Tutt*, whose decease on January 10th was briefly announced in the last number of this Magazine, was born at Strood, Kent, on April 26th, 1858, and was educated at the St. Nicholas Schools in that town, and sub-

sequently at St Mark's Training College, Chelsea, in preparation for the scholastic profession. Passing out of this College with great distinction in 1877, we find him rising steadily in his adopted career, and occupying important posts in London schools, until, within less than a year of his untimely death, he received the responsible appointment of Head Master of the New Higher Grade Central School at Morpeth Street, E.

As Mr. Tutt informs us in his Vice-Presidential Address to the City of London Entomological Society (published in the *Entomologist's Record*, vol. vi, pp. 59, *et seq.*), he began the study of *Lepidoptera* in early boyhood, and at that time he had the great good fortune to reside within easy walking distance of such splendid collecting-grounds—as they were then—as Chattenden Roughts, the Cuxton and Halling Downs, Cobham Park, and the Medway and Thames marshes. His meeting, we believe in 1881, at the place first named, with the late Mr. G. Coverdale, a young Lepidopterist of extraordinary energy and ability, whose premature death soon afterwards was a very serious loss to Entomology, may be said to have determined the direction of Mr. Tutt's career as a scientific worker. From about that time, while he communicated occasional notes to our own pages, his articles not seldom of a highly controversial character, but full of power and suggestion—in the "*Entomologist*," became quite a feature of that Magazine. Early in the year 1890, when it was thought that the "*Entomologist*" was to be largely given over to descriptions of exotic insects, he conceived the idea of a new mid-monthly magazine specially devoted to the British insect-fauna, and the "*Entomologist's Record and Journal of Variation*," was conducted by him up to the time of his decease. There is no doubt that the appearance of this periodical, imbued throughout as it was with the strenuous personality of its Editor, gave a very marked stimulus to the scientific study of our native *Lepidoptera*; and when, in more recent years, Mr. Tutt's summer holidays were spent for the most part on the Continent, his attractive notes on the rich and most interesting Alpine insect-fauna were the means of making the "*Record*" the chief repository of the work of the now numerous students of European *Lepidoptera* in our own country.

We can only allude very briefly to a few of the results of Mr. Tutt's enormous industry in Entomological science. Without doubt his monument will be the great unfinished work on "*British Lepidoptera*," of which ten volumes, two of which are devoted to the Butterflies, have up to the present been issued, and have been duly noticed in our pages as they have appeared. Another volume, dealing with the remainder of the Lycaenid butterflies, was left by him in an advanced stage, and its publication may ere long be looked for. We sincerely trust also that the large amount of material accumulated by him for subsequent volumes of this great work will in the near future be made available by his literary executors. The "*British Noctuae and their Varieties*," and the "*Practical Hints for the Field Lepidopterist*," both most valuable contributions to the subjects on which they treat, represent an enormous amount of concentrated effort and study, and his books "in lighter vein," notably the "*Rambles in Alpine Valleys*" exhibit no small literary skill and power of graphic description.

In 1885 Mr. Tutt was elected a Fellow of the Entomological Society, and served on the Council in 1897-9 and again from 1908-11. As one of the most constant attendants at the Society's meetings, he took a prominent part in its discussions, and his breezy and stimulating addresses will be greatly missed by the Fellows. On the Council and the Publication Committee, his large experience gained in the production of his books have recently proved of the utmost value in re-organising the procedure of publication of the Society's memoirs, and the results of his energetic labours in this matter are already evident. The recognition of his scientific work culminated in the fulfilment of his highest ambition, and he was nominated to the Presidential Chair for the forthcoming session of the Society, but to the regret of all he passed away before the Chair became vacant.

A serious illness about two years ago left its evident mark on him, but up to the very last his industry and keenness in scientific work were unabated. No one can doubt, however, that he habitually overworked himself, mentally and physically, especially of late years, and that his end, at apparently the climax of his powers, was materially hastened by this cause. At his burial in Lewisham Cemetery on January 14th, there were present, besides a host of friends and colleagues, representatives of the Entomological Society of London, and other kindred Societies in which, in years past, he had held a prominent place; and the esteem in which he was regarded was marked by several beautiful wreaths sent as a last tribute by these associations.

Mr. Tutt leaves a widow, two sons, and three daughters, (two of whom are married), and to them we tender our very sincere sympathy in their bereavement. We understand that his extensive and valuable collections of British and Continental *Lepidoptera* are to be disposed of by auction at intervals within the next two years.

*Sir Francis Galton, D.C.L., F.R.S.*—The decease on January 17th, at an advanced age, of this distinguished traveller and fellow-worker with his great relative, Charles Darwin, has called forth full and appreciative notices of his life-long scientific career. We have not, however, seen any mention of the fact that from 1887 to 1903 he was a Fellow of the Entomological Society of London, and that in the first-named year he contributed to its Transactions a very valuable paper entitled "Pedigree Moth Breeding as a means of verifying certain important Constants in the General Theory of Heredity." The immediate result of this most suggestive memoir was the classic series of researches carried out by Mr. F. Merrifield at his suggestion, of which the results are recorded at length in subsequent volumes of the Society's Transactions.

*Gerald George Hodgson*, better known as Dr. Hodgson, was removed from amongst us by sudden death, on Friday, February 3rd. We venture to say that had he lived longer he would soon have been one of our leading men, as he had the enthusiasm for work, and the grasp of necessary details, not often met with. The exigencies of his profession prevented his prosecuting his natural history studies so fully as he would have liked to do in early life, but his maturer years bore testimony to his innate thoroughness and the correct-



ness of his views. Although of retiring demeanour, and comparatively little known until quite recently in the Entomological world, he very quickly made his mark among our London Societies, and his presence will be missed by all, as well as his critical remarks, on the markings and variations of the *Rhopalocera*, of which the *Lycænidæ* were his especial favourites.

## Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Annual Meeting held at the Royal Institution, Colquitt Street, Liverpool, *December 19th*, 1910.—Mr. R. NEWSTEAD, M.Sc., F.E.S., Vice-President, in the Chair.

The Reports of the Council and Hon. Treasurer were read and adopted, and the following Members were elected as Officers and Council for the ensuing year, viz. :—

President: S. J. Capper, F.E.S. Vice-Presidents: W. J. Lucas B.A.; C. E. Stott; Claude Morley, F.Z.S.; P. F. Tinne, M.A., M.B.; Geo. Arnold, M.Sc. Treasurer: Dr. J. Cotton. Secretaries: H. R. Sweeting; Wm. Mansbridge. Librarian: F. N. Pearce. Council: E. J. B. Sopp, F.R.Met.S.; Wm. Webster, M.R.S.A.I.; Wm. Mallinson; W. T. Mellows; L. H. Lister; G. M. Taylor, M.A.; C. B. Williams; R. T. Cassal, M.R.C.S., L.S.A.; O. Whittaker; R. Wilding; L. West, M.I.M.E.

Mr. Robert Newstead, the retiring Vice-President, delivered the Address, which was entitled, "The Taxonomic value of the Genital Armature in the Tsetse Flies (Genus *Glossina*). He stated that he had made a careful examination of all the hitherto described species of the genus *Glossina* which had not only revealed some very striking morphological characters, but had led to the discovery of three hitherto undescribed species: *Glossina submorsitans*, Newst., *G. brevipalpis*, Newst., and *G. fuscipes*, Newst., and also to the re-establishment of Bigot's *G. grossa*. The scheme of classification adopted was based entirely upon the taxonomic characters of the male armature which are the true and almost only natural anatomical elements that can at present be found in these insects. He had found that the species fall into three very striking and distinct groups, each being separated by very trenchant characters. These are: Group I (the *Fusca* Group). This division includes the four largest species of the genus: *G. fusca*, Walker, and *G. grossa*, Bigot, which have a Western distribution; *G. longipennis*, Corti, and *G. brevipalpis*, Newst., occurring chiefly on the Eastern side of the Continent (Africa). In all of these species the claspers are quite free, there being no membrane stretching between them; the distal extremities of these appendages have either a single large and bluntly pointed tooth-like extension or they are bluntly bidentate; the harpes in all cases being markedly different in their morphological characters. Group II (the *Palpalis* Group). To this division belong the following species: *G. palpalis*, Rob.-Desv., *G. tachinoides*, Westwood, *G. fuscipes*, Newst., and *G. pallicera*, Bigot. In all of these species the claspers of the males are connected by a thin and finely spinose membrane which is deeply divided medially, but in all cases

the distal extremities of the claspers are quite free and widely separated. Group III (The *Morsitans* Group). This group comprises *G. morsitans*, Westwood, *G. submorsitans*, Newst., and *G. longipalpis*, Wiedemann. In these the claspers are completely united by a spinose membrane and they are also fused medially. They are of a very remarkable form, their shape somewhat resembling the scapula of a mammal in miniature, and are altogether much more highly complicated structures than those in either of the preceding groups. Thus we see in these three groups forms which are so widely different as to lead one to assume, without taking other external features into consideration, that they represent three distinct genera. Certain it is that these insects illustrate one fundamental principle of evolution, namely, that they have attained great development of one set of morphological characters, and have retained others apparently of an ancestral type.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, December 7th, 1910.*—Mr. H. ROWLAND-BROWN, M.A., Vice-President in the Chair.

Mr. R. Stewart McDougall, M.A., D.Sc., F.R.S.E., of Edinburgh University, and Mr. Hugh Frederick Stoncham, Lieutenant, East Surrey Regiment, of "Kingswear," Streatham Park, S.W., were elected Fellows of the Society.

The Vice-President exhibited and read the letter of congratulation to Mr. Roland Trimen, M.A., F.R.S., to be sent on the occasion of the award to him of the Royal Society's Darwin Medal.

The Vice-President announced that he had received from Dr. A. Fenyes, F.E.S., of California, and exhibited in his behalf four boxes containing an admirable collection of North American Aleocharine *Coleoptera*, which the donor had offered most kindly to the Society. In the absence of any collections belonging exclusively to the Entomological Society of London, however, he had asked Dr. Fenyes to authorize a transfer of the gift to the British Museum (Natural History), and he therefore, with the consent of the meeting, handed it over to Mr. G. J. Arrow for that purpose.

Mr. H. W. Andrews exhibited a short series of *Carphotricha guttularis*, Mg., a scarce Trypetid, taken at Milford Haven in July last, and a specimen of a unicolorous form of *Prosenia sybarita*, F., from North Kent, July 30th, 1910. Commander J. J. Walker, specimens of *Syagrius intrudens*, Wat., an Australian weevil, introduced into a fernery at Glasnevin, co. Dublin, where it had done considerable damage, and communicated by Mr. J. N. Halbert; also, on behalf of the captor, Mr. Joseph Collins, of the Oxford University Museum, *Conops signata*, Wiedemann, ♂ and ♀, a Dipteron new to Britain, taken at Tulmery, Berks., September 11th, 1910. Mr. E. C. Bedwell, examples of *Bruchus pectinicornis*, L., a beetle usually looked upon as introduced into this country in granaries, but in this case swept on an open hillside at Chipstead, Surrey; also a variety of *Badister bipustulatus*, F., the usual black patches on the elytra being reduced to two small black dots, from Chipstead, May 8th, 1910. Mr. W. C. Crawley, with normal examples, a brachypterous ♀ of the ant *Lasius flavus*, found at Oddington, near Oxford, in August, 1900, at which locality

about the same time were observed ♀ ♀ of *L. niger* with short wings. Mr. H. St. J. Donisthorpe remarked that Mrázek had recently shown that the short wings in ♀ ♀ of *Lasius alienus* were caused by the ant being infested by a nematode worm of the genus *Mermis*, and that Professor Wheeler had found this to be the case with short-winged ♀ ♀ of *L. neoniger* in America. He now exhibited a short-winged ♂ of *Technomyrmex albipes*, Smith, together with an ordinary winged ♂ which he had recently taken at Kew, and suggested that the former might be caused in the same way; also ergatoid ♂ ♂ of the same species taken at the same time, and two forms of *Prenolepis braueri*, sub. sp. *donisthorpei*, Forel, taken at Kew; a black form ♀ ♀ and ♂ taken in the Fern House, and a red form ♀ ♀ from the Palm House. Mr. H. M. Edelsten, series of the following rare British *Heterocera*:—*Dianthæcia luteago* var. *barrettii*, bred 1910, from Devon larvæ; *Tapinostola extrema*, from Northamptonshire larvæ, July, 1910; *T. hellmanni*, from larvæ taken in Wicken Fen, June, 1910; and a pale variety of *Meliana flammea*, from larvæ collected in the Norfolk Broads. Mr. H. Rowland-Brown, together with typical examples for comparison, two fine melanic aberrations of *Melitæa parthenie*, Bork., one of which resembled ab. *rhoio*, Oberthür, from Clelles, Isère; also two very remarkable black aberrations of *Melitæa varia*, taken by him in company with Mr. C. J. Johnson, at the top of the Simplon Pass in 1907. Mr. Hamilton H. Druce, a remarkable Nymphaline butterfly from the Himalayas, *Parhestina jermyni*, n. sp., with *Aporia agathon* var. *phryxæ*, the Pierid it mimics closely, and read a paper entitled, "Description of a new Nymphaline Butterfly from British India."

Mr. H. St. J. Donisthorpe read a paper entitled, "Further Observations on Temporary Social Parasitism and Slavery in Ants." Dr. T. A. Chapman, "Two new species of *Lycænopsis* from Sarawak, Borneo." M. Ernest Olivier, "Description of two new species of *Luciola* in the Collection of Mr. H. E. Andrewes."

Wednesday, January 18th, 1911

The Annual Meeting of this Society was held at 11, Chandos Street, Cavendish Square, when the Officers and Council for the forthcoming session, 1911-1912, were elected. Owing, however, to the death of Mr. J. W. Tutt, the President-nominate, no successor to the outgoing President, Dr. F. A. Dixey, M.A., M.D., F.R.S., was chosen, and a Special General Meeting will be held later in the year for that purpose. Meanwhile, the following Fellows were elected to act as Officers and Members of the Council:—

Treasurer: Mr. A. H. Jones; Secretaries: Commander J. J. Walker, M.A., R.N., F.L.S., and (in place of Mr. H. Rowland-Brown, M.A., who declined re-election after eleven years' service), the Rev. G. Wheeler, M.A., F.Z.S.; Librarian: Mr. G. C. Champion, F.Z.S.; other Members of the Council: Mr. R. Adkin, Mr. G. T. Bethune-Baker, F.Z.S., Professor T. Hudson Beare, B.Sc., F.R.S.E., Dr. M. Burr, D.Sc., F.L.S., F.Z.S., Dr. F. A. Dixey, M.A., M.D., F.R.S., Mr. H. St. J. Donisthorpe, F.Z.S., Mr. J. H. Durrant, Professor Selwyn Image, M.A., Dr. K. Jordan, Ph.D., Mr. A. Sich, Mr. J. R. le B. Tomlin, M.A., and Mr. H. J. Turner.

The President, in the course of his Address, after referring to the losses by death sustained during the preceding year, went on to speak of various events of special interest to Entomologists, among these being the appointment of Professor Meldola, F.R.S., as Herbert Spencer Lecturer, and Mr. Selwyn Image as Slade Professor of Fine Art at Oxford; the award of the Royal Society's Darwin Medal to Mr. Roland Trimen, F.R.S.; and the meeting of the first International Congress of Entomology at Brussels. He then proceeded to deal with certain problems of general biology on which special light had been thrown by Entomological study, notably the demonstration that permanent races, differing from the parent stock, could be produced by artificial interference with the germ-plasm. This had been surmised from early experiments of Weismann, followed by Standfuss and Fischer, and had now been placed beyond doubt by the careful work of Tower in America, who had also shown that the new form might stand in Mendelian relation with the stock from which it sprang. Other topics touched upon in the Address were the psychophysical character of the material presented to the operation of natural selection—a point particularly emphasized by Professor Mark Baldwin; and, in connection with this, the special interest attaching to the communities of the social *Hymenoptera*, where the group, rather than the individual, appeared as the unit of selection.—H. ROWLAND-BROWN, *Hon. Secretary*.

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#### CHIRONOMID LARVÆ AND WATERSNAILS.

BY K. H. BARNARD.

It is well known that the fountains at Trafalgar Square, London, contain a small (the largest measure  $\frac{1}{2}$  inch), and thin-shelled variety of *Limnæa peregra*. On March 4th, 1910, I brought home in a pillbox two of these snails, and was surprised to find, on reaching home, two larvæ as well as the snails. They were 10 mm. long, mottled with red and green, and proved, on examination, to be Chironomid larvæ. When placed in water they spun silken tubes open at both ends.

A large number of snails, of all sizes, each being examined to see that no larvæ were attached to the exterior, was then collected and brought home in pillboxes. Larvæ of various sizes were again found amongst the snails; three full-grown ones spun silken tubes and changed to pupæ on March 25th; these, however, died. The small larvæ, although supplied with green *Algæ* and kept with the snails, soon died.

Another lot of snails was collected, and brought home in water. This time no larvæ were found, but several of the snails shortly died. These I examined, and in every case (9) a small larva,

## EXCHANGE.

*Desiderata*: Psyche retiella.—HON. N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, London, W.

**NOTE.**—Subscriptions for 1911 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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[VOL. XLVII.]  
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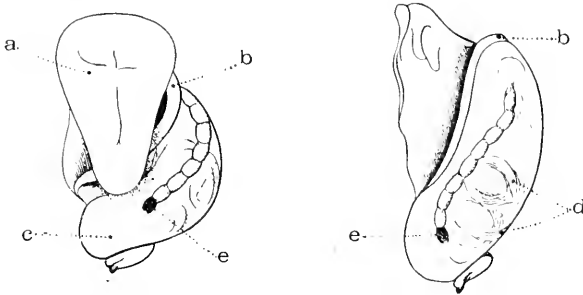
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3-4 mm., was found in the mantle and the mantle cavity. Three snails, collected from the sides above the level of the water were also examined, and each contained a larva (see figures below).



a—foot. b—mantle edge. c—liver. d—intestine. e—head of larva.

On April 25th I performed the following experiment: "A small larva, 4 mm. long, and a small snail, about 6 mm. were isolated in a jar and brought in contact with one another. The larva immediately fastened on to the snail, crawling round and trying most persistently to get under the edge of the mantle, making for the pulmonary orifice in particular. The snail at once became very lively, twisting its shell about as if trying to rub off the larva against the side of the jar. The larva, however, succeeded in penetrating the pulmonary orifice, and soon was not visible externally (except, being red, it shows through the thin shell). The snail appeared inconvenienced, and soon crawled about two inches out of water, and remained there. An hour later I dropped it to the bottom of the jar. Next morning the snail was in the same place, expanded and dying; the larva had left it, and had spun a tube close by."

I repeated this experiment several times, and succeeded often in observing the larva enter the snail. They attacked the small snails more readily than the large ones. A large 9 mm. larva tried to attach itself to a large snail, but unsuccessfully, and then began gathering vegetation around itself and spinning a tube. This larva changed to a pupa about the middle of May (I was absent at the time, so cannot give exact date), and on May 25th I found a dead imago on the surface of the water. On April 12th I had found two imagines on the water in Trafalgar Square, but injured them so much in the capture as to render them incapable of identification. All I can say is, that the three specimens were green-bodied Chironomids. Neither can I say whether they appear continuously from April, or even March (the two larvæ found on March 4th

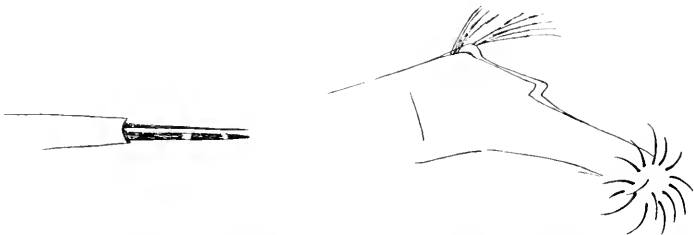
were full-grown), until the end of May, or in two generations, though the latter seems improbable.

The above notes have been abbreviated from my diary, and the following conclusions may be drawn from them: The young larvæ enter the pulmonary orifice, and burrow in the mantle, eventually reaching the liver (*v.* figure).

They inconvenience the host, but to what extent I do not fully know. Possibly, if they enter when very young, and grow with the snail, the latter would not notice them so much as when a half-grown larva penetrates the mantle cavity. In the latter case the snail promptly leaves the water. All those snails which I have collected from above the water were infected, but infected snails can also be found below the surface. A careful examination will reveal the red larva through the shell. Whether the snail is necessary to the growth of the larva, either throughout life, or at particular periods, or at all, can only be determined by breeding. The snail does not appear to be deformed or dwarfed.

This case of parasitism has not, I believe, been noticed before; why, it is difficult to see, perhaps because dipterologists have overlooked such an unlikely habitat for larvæ, and also because the majority of conchologists are not also malacologists and dissectors. Still it is surprising; and it is to be hoped that during the coming spring some London entomologist will thoroughly work out the life history of this interesting Chironomid.

Finally, I may mention that the larva is characterised by red blood, green granules in special cavities (*v.* Miall and Hammond), first joint of the antennæ bearing a setiform process equal in length to the remaining three joints, no ventral tubules, two dorsal papillæ bearing bunches of hairs, and two papillæ below them at the anal end (*v.* figures).



The pupa has a fringed tail-plate and respiratory bunches. In these points this species seems to agree with *Chironomus niveipennis* (*v.* Miall and Hammond, p. 11).

Etwas, Farnham, Surrey:  
January 31st, 1911.

## ANOTHER HUNDRED NEW BRITISH SPECIES OF DIPTERA.

BY G. H. VERRALL, F.E.S.

- |  |   |
|--|---|
| 1. <i>Sciara longiventris</i> , Zett.          | 51. <i>Thrypticus lætus</i> , n. sp.          |
| 2. <i>Leia terminalis</i> , Meig.              | 52. <i>pollinosus</i> , n. sp.                |
| 3. <i>Boletina basalis</i> , Meig.             | 53. <i>Medeterus infumatus</i> , Lw           |
| 4. <i>Platyura nigricauda</i> , Strobl         | 54. <i>nitidus</i> , Macq.                    |
| 5. <i>modesta</i> , Winn.                      | 55. <i>excellens</i> , Frey                   |
| 6. <i>humeralis</i> , Winn.                    | 56. <i>Telmaturgus tumidulus</i> , Radcl.     |
| 7. <i>Scatopse talpæ</i> , n. sp.              | 57. <i>Campsicnemus compeditus</i> , Lw.      |
| 8. <i>coxendix</i> , n. sp.                    | 58. <i>marginatus</i> , Lw.                   |
| 9. <i>Cricotopus pulchripes</i> , n. sp.       | 59. <i>Teuchophorus calcaratus</i> , Macq.    |
| 10. <i>Ceratopogon pallidus</i> , Winn.        | 60. <i>Aphrosylus mitis</i> , n. sp.          |
| 11. <i>nubeculosus</i> , Meig.                 | 61. <i>Pipunculus incognitus</i> , Verr.      |
| 12. <i>forcipatus</i> , Winn.                  | 62. <i>Sphærophoria loewii</i> , Zett.        |
| 13. <i>versicolor</i> , Winn.                  | 63. <i>Eudoromyia magnicornis</i> , Zett.     |
| 14. <i>nobilis</i> , Winn.                     | 64. <i>Sturmia ligniperdæ</i> , Br. and Berg. |
| 15. <i>Dixa nigra</i> , Stæg.                  | 65. <i>Vibrissina turrita</i> , Meig.         |
| 16. <i>Limnobia decemmaculata</i> , Lw.        | 66. <i>Ptychomyia selecta</i> , Meig.         |
| 17. <i>Psiloeonopa pusilla</i> , Schin.        | 67. <i>Germaria angustata</i> , Zett.         |
| 18. <i>Rhamphomyia culicina</i> , Fall.        | 68. <i>Onesia gentilis</i> , Desv.            |
| 19. <i>Pachymeria erberi</i> , Now.            | 69. <i>Syntomogaster exigua</i> , Meig.       |
| 20. <i>Hilara æronetha</i> , Mik               | 70. <i>Syntomogaster (?) fasciata</i> , Meig. |
| 21. <i>lugubris</i> , Zett.                    | 71. <i>Cinochira atra</i> , Zett.             |
| 22. <i>diversipes</i> , Strobl                 | 72. <i>Sarcophaga sinuata</i> , Meig.         |
| 23. <i>pubipes</i> , Lw.                       | 73. <i>pumila</i> , Meig.                     |
| 24. <i>beckeri</i> , Strobl                    | 74. <i>halterata</i> , Stein                  |
| 25. <i>carinthiaca</i> , Strobl                | 75. <i>Limnophora maritima</i> , v. Röd.      |
| 26. <i>braueri</i> , Strobl                    | 76. <i>Homalomyia fucivorax</i> , Kieff.      |
| 27. <i>cinereomicans</i> , Strobl              | 77. <i>lineata</i> , Stein                    |
| 28. <i>heterogastra</i> , Now.                 | 78. <i>Pegomyia rufina</i> , Fall.            |
| 29. <i>cingulata</i> , Dahlb.                  | 79. <i>squamifera</i> , Stein                 |
| 30. <i>Edalea apicalis</i> , Lw.               | 80. <i>interruptella</i> , Zett.              |
| 31. <i>Trichina opaca</i> , Lw.                | 81. <i>Anthomyia procellaris</i> , Rond.      |
| 32. <i>Leptopeza sphenoptera</i> , Lw.         | 82. <i>imbrida</i> , Rond.                    |
| 33. <i>Clinocera wesmaelii</i> , Macq.         | 83. <i>Chortophila lutipennis</i> , Zett.     |
| 34. <i>Ardoptera ocellata</i> , Costa          | 84. <i>Chirosia crassisetæ</i> , Stein        |
| 35. <i>Tachista tuberculata</i> , Lw.          | 85. <i>parvicornis</i> , Zett.                |
| 36. <i>Psilopa loewi</i> , Beck.               | 86. <i>Lispe pygmaea</i> , Fall.              |
| 37. <i>Dolichopus ciliferoratus</i> , Macq.    | 87. <i>hydromyzina</i> , Fall.                |
| 38. <i>Pæcilobothrus comitialis</i> , Kow.     | 88. <i>Caricea erythroceræ</i> , Desv.        |
| 39. <i>Hercostomus subsimpliripes</i> , n. sp. | 89. <i>brachialis</i> , Rond.                 |
| 40. <i>Gymnopternus brevicornis</i> , Stæg.    | 90. <i>Limnospila albifrons</i> , Zett.       |
| 41. <i>angustifrons</i> , Stæg.                | 91. <i>Cenosia dorsalis</i> , v. Roser        |
| 42. <i>Chrysotus suavis</i> , Lw.              | 92. <i>albatella</i> , Zett.                  |
| 43. <i>melampodius</i> , Lw.                   | 93. <i>atra</i> , Meig.                       |
| 44. <i>varians</i> , Kow.                      | 94. <i>biliniella</i> , Zett.                 |
| 45. <i>Argyra grata</i> , Lw.                  | 95. <i>lineatipes</i> , Zett.                 |
| 46. <i>Porphyrops fracta</i> , Lw.             | 96. <i>pumila</i> , Fall.                     |
| 47. <i>Syntormon spicatus</i> , Lw.            | 97. <i>pygmaea</i> , Zett.                    |
| 48. <i>fliger</i> , nov. nom.                  | 98. <i>salinarum</i> , Stein                  |
| 49. <i>Achalus melanotrichus</i> , Mik         | 99. <i>trilineella</i> , Zett.                |
| 50. <i>Thrypticus divisis</i> , Strobl         | 100. <i>longicauda</i> , Zett.                |

(To be continued).

Sussex Lodge, Newmarket :  
March 15th, 1911.

A NOTE ON DR. SHARP'S NEW SPECIES OF *GABRIUS*.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

Knowing that I had been working at Dr. Sharp's most interesting new species of *Gabrius*, and that Dr. Sharp was too busy discovering additional new forms in other groups, The Rev. W. W. Fowler asked me to make out a table of the *Gabrii* for a supplement to his "British Coleoptera" shortly to be published. This has been an easier task than one would have at first supposed, and I have been able to draw up a table by which I hope even ♀ specimens of seven out of the eight species (including *G. trossulus* and *G. nigritulus*) may be identified. Dr. Sharp kindly looked over my original table, and I have adopted his suggestions in the present one.

Size and colour are not usually good characters on which to base the main divisions of a table, but they seem to be remarkably constant in this group. The colour of the legs varies very little, but that of the base of the antennæ and palpi does so rather more, the species with light coloured legs having these parts sometimes considerably darker. The three species, *G. velox*, *G. pennatus*, and *G. appendiculatus* are distinctly smaller than the others, and can as a rule be at once distinguished from them by this character alone. *G. nigritulus* is the largest species; *G. bishopi* is hardly so large as the remaining three, but is obviously larger than *G. pennatus*. The punctuation of the elytra varies a good deal in each individual species, and is of little help for identification purposes.

The following table should be used in conjunction with the short descriptions given below:—

- I. Elytra shorter and scarcely broader than thorax; legs testaceous...  
*G. trossulus*, Nordm.
- II. Elytra longer and broader than thorax.
- i. Penultimate joints of antennæ strongly transverse, first joint black; head very broad; femora dirty testaceous, tibiae pitchy...  
*G. stipes*, Sharp.
- ii. Penultimate joints of antennæ not strongly transverse.
1. Legs testaceous, tibiae at most a little darker; first two joints of antennæ and palpi testaceous or pitchy-testaceous; elytra generally brownish.
- A. Size larger; form broader; head even in ♀ scarcely longer than broad .....*G. nigritulus*, Grav.
- B. Size smaller; form narrower; head in ♂ distinctly longer than broad.
- a. Form slightly longer in proportion to width; ædeagus exposed in ♂ .....*G. velox*, Sharp.
- b. Form shorter in proportion to width; ædeagus not exposed in ♂ ..... *G. pennatus*, Sharp.

2. Legs and palpi pitchy-testaceous or pitchy ; elytra black.

A. Size larger.

a. Form narrower and more elongate (like that of *G. pennatus* and *G. velox*) ; antennæ longer and not thickened towards apex .....*G. bishopi*, Sharp.

b. Form broader ; antennæ shorter and distinctly thickened towards apex .....*G. keysianus*, Sharp.

B. Size considerably smaller ; first joint of antennæ black ; head about as broad as thorax, somewhat rounded at sides...

*G. appendiculatus*, Sharp.

*G. trossulus* can hardly be mistaken for any of the other species, the short and narrow elytra giving it quite a characteristic appearance. The head is large and broad, and the antennæ rather short, with the penultimate joints slightly transverse. The thorax is often pitchy. It does not appear to be by any means a common species, and is very local. In Berkshire I have only taken it in flood rubbish from one limited locality.

*G. nigrifulus* is recognised by its large size, broad head, long antennæ, of which the penultimate joints sometimes appear to be longer than broad, and light palpi, legs and base of antennæ. The elytra are nearly always brownish. It is the most abundant species in England.

*G. stipes* is another species with a large broad head. It is of about the size of *G. trossulus*, but is broader, and the elytra are exceptionally broad in proportion to the thorax. It is distinguished from all its allies by the distinctly transverse penultimate joints of the entirely black antennæ. The legs are rather intermediate in colour between those of the light and dark legged species. I have obtained a good series of it by carefully searching among many hundreds of *G. nigrifulus* and *G. pennatus* from flood rubbish. *G. pennatus* is much smaller and narrower than the three foregoing species, and has a proportionately narrower head. The penultimate joints of the antennæ are about as long as broad. It is almost as common as *G. nigrifulus* in the south of England.

*G. velox*. This is the most difficult member of the group, and I am doubtful whether the ♀ can always be distinguished from the same sex of *G. pennatus*. It appears to be a somewhat rare species.

*G. keysianus* is one of the larger species, and somewhat resembles the ♀ of *G. stipes*. It is, however, distinctly narrower ; the head is narrower in proportion to the thorax ; the penultimate joints of the antennæ are much less transverse, although they are slightly so ; and

the femora and elytra are darker. It could hardly be mistaken for *G. nigritulus* on account of its darker and thicker antennæ, narrower form, and darker legs. I have seen specimens from Cornwall, Southport, and Ireland (Kerry).

*G. bishopi* is the most narrow and elongate species, and is in size a little shorter than *G. keysianus*. The antennæ are long, with the penultimate joints slightly longer than broad; the elytra are exceptionally long in proportion to the thorax. It most closely resembles *G. pennatus*, but is distinctly larger and darker (with darker base of antennæ and legs), and Dr. Sharp tells me that he could distinguish this species by these characters in life when he found it in company with *G. pennatus*. It also has longer antennæ. I took a single ♂ from flood rubbish sent to me from Bungay, Suffolk, in Dec., 1910.

*G. appendiculatus* is even slightly smaller on the average than *G. pennatus*, and is easily distinguished from that species by its much darker colour, broader head, and shorter legs and antennæ. The legs are usually almost black. It does not appear to be a common species in the south, but I have found it by far the commonest member of the group in flood rubbish from Blair Athol and Dalwhinnie.

Bradfield, Reading:

February 7th, 1911.

## A NEW CRAMBUS FROM NEW ZEALAND.

BY E. MEYRICK, B.A., F.R.S.

### CRAMBUS OBSTRUCTUS, *n. sp.*

♂ ♀. 22–26 mm. Head and thorax light greyish-ochreous. Antennæ in ♂ minutely ciliated. Palpi 4, fuscous, white towards base beneath. Forewings elongate, narrow, somewhat dilated posteriorly, costa gently arched, apex obtuse, termen in ♂ slightly rounded, rather oblique, in ♀ straight and more oblique; pale brownish-ochreous, more or less strongly infuscated posteriorly; a rather broad irregular-edged white median streak from base to termen beneath apex, interrupted at  $\frac{3}{4}$  by an irregular spot of the infuscated ground colour; sometimes some whitish suffusion along costa towards apex; cilia pale greyish-ochreous, sometimes partially infuscated, on extremity of streak mixed with white. Hind-wings pale whitish-ochreous-grey; cilia ochreous-whitish.

Three specimens taken near Lumsden, Otago, by Dr. G. B. Longstaff, who states that they flew into the train, on March 8th, 1910. This would imply that the species was locally abundant; it is an odd accidental discovery, but specimens might be easily overlooked

amongst the common and variable *C. vittellus*, to which it is generally similar. I have collected at Lumsden myself, but not so late in the season. Type in Oxford University Museum; Dr. Longstaff very kindly gave me one of the other examples. This makes the 38th New Zealand *Crambus*, all endemic, besides an endemic genus developed from *Crambus* (*Orocrambus*) with six species; whilst in Australia there are only two species of *Crambus*, both immigrants.

Thornhanger, Marlborough, Wilts.:

February 21st, 1911.

---

*HILARA AËRONETHA*, MIK: A DIPTERON NEW TO THE BRITISH LIST.

BY A. E. J. CARTER.

The publication of the third part of Dr. Lundbeck's excellent "Diptera Danica" enables me to identify a specimen belonging to the genus *Hilara* which I have had unnamed in my collection for some time. The specimen in question is a ♂, taken July 7th, 1907, at Comrie, Perthshire, and, I may add, is in beautiful condition. At the time I failed to make it agree with any species in our List, but what it might be I was unable to tell. Working now with the key given by Lundbeck, my insect runs down to *aëronetha*, Mik, and it agrees with the detailed description given, but the apex of the second antennal joint is distinctly reddish, while Lundbeck says "antennæ black."

The species is near *interstincta*, Flm., and *maura*, F. (both of which occurred at Comrie), but is quite distinct. Frons narrow. Thorax dark brownish-grey, with a dark median stripe and sides. Dorso-central bristles in one row, acrostichal bristles in four rows, one humeral, two post-humeral, three notopleural, and two alar bristles. Scutellum with four bristles. Humeri with a red spot. Abdomen grey, with a median stripe, and hind margin of the segments ash-grey in certain lights. Legs dark, knees reddish. Front metatarsus slightly thickened, shorter than tibia. Leg bristles not strong. Wings yellowtinged. Exp., 6 mm.

Dr. Lundbeck points out that Mik's description is not quite in accordance with that given by Strobl, who apparently described the species in the same year. In my specimen the acrostichal bristles are regularly quadriserial, the fork of the cubitus is nearly straight, branches off almost regularly, and ends *very* slightly nearer the radial than to the cubital vein. The halteres are yellow, base of the knob darker. It thus agrees, as do the Danish examples, with Strobl's description.

According to Dr. Lundbeck, only two specimens, both ♂♂, have been taken in Denmark (June, 1910), and it is only known elsewhere from Styria and Hungary, so that its occurrence in Scotland is interesting.

Perhaps I may be allowed to point out that in the figure of the front leg of *H. aronetha* (Dipt. Danica, 3, p. 162), the tarsus is represented as consisting of *six* joints.

Blairstown, Perthshire:  
February 4th, 1911.

[This species also occurs in England, specimens having been taken by Mr. Verrall near Leith Hill (Surrey) in June, 1868, and at Tunbridge Wells (Kent) in June, 1886.—J. E. C.]

NOTE ON JOHN CURTIS' BRITISH ENTOMOLOGY,  
1824-1839: 1829-1840: and 1862.

BY C. DAVIES SHERBORN AND J. HARTLEY DURRANT.  
(By permission of the Trustees of the British Museum).

The book consisted of sixteen volumes of twelve parts each, = 192 parts. There were 770 plates (1-769 and 205\* duplicated for *Hipparchia arcanius*) each (first edition) with two pages of text.

Parts one and two had five plates each (plates 1-10): parts 3-59 four plates each (plates 11-238): part 60 had four plates (plates 239-241 and an extra plate and text 205\* for *Hipparchia arcanius*); parts 61-192 four plates each (plates 242-769): total 770 plates. The break in part 60 of three consecutively numbered plates, instead of four, throws out one's calculations, but the total number of plates is re-adjusted by the additional plate 205\*.

One number a month was issued with great regularity, commencing January 1824, and finishing December 1839, so the dates on the plates may be accepted with certainty. In the Entomological Magazine, i, 1833, p. 303, it was announced that the British Entomology would appear in alternate months in double parts, and this arrangement seems to have begun with parts 109-110, and is noticed to continue to parts 117 and 118. We have also wrappers for 159 and 160, and 169 and 170, but one may conjecture this to have been an irregular proceeding, for the Linnean Society of London received most of the parts separately from Curtis himself, as seen by the Donation Book of that Society, itself a most valuable record for many works. We do not therefore think that there is any need to disturb the dates given on the plates, at this distance of time, for the sake of a few odd



bi-monthly issues, which it would be most difficult now to date with accuracy.

In 1829 Curtis apparently found his stock of back numbers running short, for he began to bring out a second edition. Parts one to eight were re-written and enlarged, some from two to ten pages, with alterations of nomenclature and additions; parts nine to thirty were reset and reprinted without alteration or addition; and parts 31 to 192 were all of the first edition, *i.e.*, one setting and one printing.

The dates and contents of the first eight parts of the second edition are as follows:—

1.	...	...	1829	contains	4, 2, 4, 2, 2	pp.
2.	<i>post</i>	July,	1830	..	2, 4, 6, 4, 2	pp.
3.	...	March,	1834	..	2, 10, 2, 2	pp.
4.	...	<i>post</i>	1834	..	4, 8, 2, 2	pp.
5.	...	<i>post</i>	1835	..	2, 2, 2, 2	pp.
6.	...	...	1839	..	2, 2, 2, 2	pp.
7.	...	...	? 1840	..	2, 2, 2, 2	pp.
8.	...	...	? 1840	..	2, 2, 2, 2	pp.

The only complete copy of original first editions we have handled is that belonging to the Linnean Society; the Entomological Society's copy (Curtis' own) is "made up" by the replacement of second editions of the early parts as more up-to-date: so is the copy in the British Museum (Nat. Hist.) which was the Earl of Sheffield's, but having a fine copy of the first edition of volume one separately, the British Museum (Nat. Hist.) does now possess the entire first edition. A very fine copy of the complete second edition in the original boards with all the replacing title pages, &c., which are dated "1823-1840" is also in the British Museum (Nat. Hist.) as is also Lovell Reeves' reprint of the second edition issued in 1862 (to the best of our knowledge).

As clues to the recognition of the second edition of parts one to eight may be mentioned:—

- Part 1, plate 4. *Peltastes pini* becomes in ed. 2...*P. dentatus*.  
 ,, 2, ,, 7. *Odenesis pini* ,, ,, 2...*Dendrolimus pini*, and 2 pp. on *O. potatoaria* are added.  
 ,, 3, ,, 11. *Molorchus minor* becomes in ed. 2...*Necydalis minor*.  
 ,, ,, ,, 12. *Lycaena dispar*—figures of larva and pupa added on plate; text extended to 10 pp.  
 ,, 4, ,, 16. *Peranea* is enlarged to 8 pp.  
 ,, 5-8. Although the 2 pp. are adhered to, the material is altered and increased, with consequently a crowded second page, as compared with the second page in edition one.

It is interesting to note that at this present moment (Jan., 1911) the 770 original drawings for this beautiful work are being offered for sale by a well-known London bookseller.

March 1st, 1911.

*The African Entomological Research Committee.*—With a view to furthering the work of this Committee, Mr. Andrew Carnegie has been good enough to place at its disposal a sum of £1000 a year for three years, to defray the cost of sending a few suitably qualified young men to the United States to study the practical applications of Entomology which have received so much attention in that country. Three of these Carnegie Scholars, as they are to be called, have been selected, and two of them are already at work in the States. The fact that Dr. L. O. Howard, Chief of the Bureau of Entomology at Washington, is personally interesting himself in the matter is a sufficient guarantee that all possible facilities will be given to the scholars, and it may be confidently expected that the scheme will be of great value to British administration in Africa and elsewhere by providing a body of well-trained Entomologists available for employment in the services of the different Colonial Governments. It may be mentioned that the Research Committee was appointed in June, 1909, by Lord Crewe, the then Secretary of State for the Colonies, with the object of promoting the study of the insects which play so prominent a part in the spread of disease among men, animals, and plants in Africa; that Lord Cromer is its President: and that it includes some of the most eminent authorities on Entomology and tropical medicine in this country. During the short period of the Committee's existence satisfactory progress has been made. The scheme has been energetically taken up by the African Colonies and Protectorates, and the large quantity of material already received at the Committee's Office in the Natural History Museum at South Kensington has very materially increased our knowledge of the insect pests of Africa. The collections of insects, after being properly identified and recorded, are being distributed to the Schools of Tropical Medicine, Universities, Museums, or other institutions where they are likely to be of value for the purpose of teaching or scientific study. Two skilled Entomologists are being employed under the direction of the Committee in East and West Africa respectively, for the purpose of interesting and instructing the local officials in the work, and also of carrying out special investigations. The Committee has issued quarterly a scientific journal, entitled the "Bulletin of Entomological Research," of which the first volume is just completed. It contains many important articles by well-known authorities, and is obtaining a wide circulation. Further particulars may be obtained from the Secretary of the Committee, Mr. Guy Marshall, British Museum (Natural History), South Kensington, London.—Eds.

*A preliminary note on the so-called carrion-feeding Coleoptera.*—The majority of the following observations were made on several warm sunny days in June whilst watching small carcasses (rat, mole, young rabbit) placed in a field on the open ground. The grass was close and short and the earth below rather hard. There was a slight S.W. breeze hardly felt near the ground, but plainly perceptible a few feet above it. The observer lay close to the carcasses so that the arrival of the various species of *Coleoptera* could easily be seen, and even heard in the case of the larger species, and these were also often visible against the sky whilst still in flight some distance away. The proximity of the observer, however, did not appear to disconcert the beetles, as they occasionally

crawled unconcernedly over him on the way to the bait. The majority, as might have been expected, flew up from the N.E.—in the opposite direction to the wind—and of those which finally reached the bait from other points of the compass, many were seen in the first place to approach from the N.E., but, having overshot the mark, circled round and came back. Unlike the various species of *Diptera*, however, which alighted freely upon the carcasses, no *Coleoptera* were seen actually to settle upon the baits. The beetles whose arrival was watched whilst still in flight all dropped to the ground some 2 or 3 feet from the objective and then made their way thither on foot as much as possible under cover of the grass, forcing their way through the close-set blades with greedy haste until they finally scuttled under cover of the carcass. One specimen of *Necrophorus rufipator* was seen in flight, whilst still some 20 or 30 feet away approaching up-wind in a zig-zag manner and rather slowly. When about 3 feet from a dead rat, it settled upon a tall flowering grass, hastily folded its wings away, dropped clumsily upon the short grass below and, righting itself, travelled the remaining distance under cover of the short grass. In most cases, however, the beetles were first observed during their journey on foot. The arrivals grew more numerous as decomposition advanced, but fell off rapidly when the baits began to dry up. Many of the *Coleoptera* identified, (but these were only the larger species) were definitely seen to feed upon the fly larvæ which swarmed to such an extent that, at their maximum development, the carcasses had a tremulous movement due to the wriggling of the mass of larvæ within. The following species of *Coleoptera* were seen actually bearing away a fly larva held in their jaws: *Aleochara lata*, Gr., *Creophilus maxillosus*, L., *Leistotrophus murinus*, L., *Silpha rugosa*, L., and *sinuata*, F., *Hister cadaverinus*, Hoffm., and *Saprinus nitidulus*, Pk., and *æacus*, F. An individual *Silpha rugosa* with the apex of the left elytron badly mutilated was seen twice in an hour with a larva in its jaws, and was still about the carcass on the two following days. A specimen of *Leistotrophus murinus* also, distinguishable by its unusually small size, returned to one bait at least three times within the hour, emerging with a captured larva. The behaviour of the beetles after the capture of their prey varied. The larger species, such as *Creophilus*, *Leistotrophus*, and some of the *Silphæ* and *Saprinini* mentioned, carried their food away into the surrounding grass to eat at leisure. Of these the *Leistotrophini* were remarkable by reason of the freedom with which they exposed themselves. Unlike the others, which seemed to move over the surface of the carcass only when compelled to do so and plunged into the short grass as soon as possible after capturing their prey, the *Leistotrophini* coursed gaily over the body when the fancy seized them, and when approaching the bait or after a successful capture, ran with a very rapid, though jerky motion, over the surface of the grass. Many of the beetles, however, appeared to make burrows into the earth, radiating outwards from the carcass, into which they retreated with their food. In one of these a specimen of *Gnathoncus nannetensis*, Mars., was found together with its prey, a small fly larva.

As regards the *Necrophori*, during these observations the earth was too hard for them to burrow into, but some notes were made on their habits several years before in the New Forest. The bait (a magpie and several vipers) was

placed beneath some pine trees at the entrance of a "ride." The ground was ideal for burrowing, being a loose humus of decaying pine-needles neither too damp nor too dry. At first the take of *Necrophori* was disappointing, as only those seen on turning over the bait or those in the mould immediately beneath it were captured. It was soon seen, however, that much larger numbers could be found by turning over the mould in a circle two or three feet in diameter round the carcasses as the beetles evidently burrowed outwards into the surrounding earth. All the British species of *Necrophorus*, with the exception of *N. interruptus*, were taken in this manner, but this was subsequently obtained, in an identical fashion, in the mould round a dead kitten placed on a soft flower-bed at Broadstairs.

The consideration of some of the foregoing observations is of interest. It appears obvious that the beetles find their way to carrion by some sense akin to our own sense of smell. This is particularly shown by the fact that they drop to the ground some distance away from the source of the odour, as this would diffuse in greatest strength for a short distance along the ground in the still air amongst the vegetation before rising sufficiently to be carried along by the breeze. The beetles then, following the line of maximum odour, would find it dip down towards the ground a short distance before the actual site of the carcass. This argues, however, that their power of vision must be small and reliance placed entirely on the sense of smell or its equivalent.

It is obvious from some facts recorded above that many of the so-called carrion feeding beetles are not true carrion feeders, but take their toll from the rich harvest of larvæ which appears so rapidly in any carcass. The list given only includes those which, without disturbance of the baits, could be identified when seen carrying off larvæ, and I feel sure that it will be very greatly extended. I am not convinced that the *Necrophori* themselves even are true carrion feeders. Were this the case one would expect them to remain in the carcasses for some time to feed on the decomposing flesh, but in my experience they seem to pay only short visits and then to retire into the surrounding mould, or grass if the mould be too hard for burrowing, in exactly the same manner as those species seen actually to feed upon larvæ. They are, however, particularly shy of exposing themselves once the carcass is reached, and I have not been lucky enough to see one with its prey. Possibly they feed upon the smaller *Coleoptera* as well as, or instead of, the fly larvæ.

Lastly, I am by no means convinced that the "burying" of the carcass is due only to the *Necrophori*, or that it is a purposive act. The burial of a carcass is partly apparent and partly real. As decomposition advances the corpse, after a preliminary expansion due to the gases liberated by the bacteria within, becomes much flatter than at first owing to the dispersal of the gases through the various rents formed and to actual loss of substance due to the voracious onslaughts of the larvæ. At the same time the vegetation beneath is killed by the deleterious juices which soak down into it. This dead vegetation is soon disintegrated and carried away by the action of the beetles scrambling to and from their food supply, provided of course that it be not too dense. Should the ground be firm the same action causes a dusty hollow to appear in the earth itself beneath the carcass, but the real amount of burial is

much less than the apparent, owing to the flattening of the corpse and the fact that it lies below the level of the upright uninjured vegetation around. In loose earth, of course, the burial may be very much more complete, as the mould is easily pushed outwards from beneath the body, and because the larger *Necrophori* then also assist in the work. It appears to me possible that some of the *Coleoptera* found in moles' nests really feed upon the fly and flea larvæ also present, and these beetles might be expected to be more numerous in the mould round than in the nest itself.

The value of knowledge of the insects which prey upon the larvæ of *Diptera* has only been recognised since the accumulation of evidence that the spread of certain diseases, such as enteric fever and the summer diarrhœa of infants, is due to a large extent to adult flies. Further observations, therefore, upon these insects, both in carcasses and manure heaps, is of decided interest and importance.—C. F. SELOUS, Barton-on-Sea, Hants: December, 1910.

*Coleoptera from underground wasps' nests.*—Having opened the underground nests of wasps for several successive years in search of *Colcoptera*, a short account of the species found may prove interesting to other Naturalists. The first nest was opened on 12.11.07, and contained a pair each of *Oxyptoda spectabilis*, Märk., and *Quedius puncticollis*, Th., and several examples of *Homalota ravilla*, Er. A second nest contained another pair of *Q. puncticollis*, Th., several *Homalota occulta*, Er., *Choleva tristis*, Pz., *chrysomeloides*, Pz., with large numbers of *Cryptophagus pubescens*, Stm. A third nest was opened on 14.11.07, and contained several examples of *Q. puncticollis*, Th., *C. tristis*, Pz., *chrysomeloides*, Pz., and *H. ravilla*, Er.

The following season, 1908, only one nest was marked down, and it was opened early in November, when it contained two *Oxyptoda spectabilis*, Märk., three *O. vittata*, Märk., a pair of *Q. puncticollis*, Th., a number of *H. ravilla*, Er., and *C. pubescens*, Stm.

In 1909 the wasps vacated their nests earlier in the season, and the first nest was opened on 16.10.09, and contained a pair of *O. spectabilis*, Märk., several *O. vittata*, Märk., and one *Proteinus ovalis*, Steph. A second nest yielded several *Q. puncticollis*, Th., and *O. vittata*, Märk. A third nest was explored 1.11.09 and contained several *O. vittata*, Märk., and a few *H. ravilla*, Er. A fourth nest opened 30.12.09 contained *H. ravilla*, Er., in numbers, but no other species.

In 1910 only one nest was located, and owing to the mild weather the wasps did not finish work until the first week in December, the nest was opened within a few days and contained several *O. vittata*, Märk., and *H. ravilla*, Er., in numbers.

Of the beetles found *Quedius puncticollis*, Th., has only occurred on three occasions away from the nests, one being dug out of a rabbit burrow and two beaten from the growing branches of Scotch pine. *Oxyptoda spectabilis*, Märk., was taken once in a dead rabbit; *O. vittata*, Märk., has been taken several times amongst haystack refuse. *H. ravilla*, Er., is a regular inhabitant of underground nests, and has been taken in the nests of moles, rabbits, and field voles. *Cryptophagus pubescens*, Stm., though not always present, appears to make its home in these nests; in the two nests where it was present it was in

large numbers, and larvæ swarmed and subsequently hatched out in hundreds from the refuse of these nests. *Q. puncticollis*, Th., was also bred from larvæ taken from several nests, but as yet I have been unable to breed either of the *Oxypodas*, though *H. ravilla*, Er., emerged in numbers. The remaining species found are no doubt only casual inhabitants of these nests.

I usually locate the wasps' nests near here while the wasps are still strong on the wing, jotting down details as to precise locality so as to be able to find them when there are no wasps flying to guide one to the entrance, and then await the time when the early frosts kill off all the workers, and find the nests most productive of good species within about ten days after the wasps have finally left them.—H. BRITTON, Prospect House, Salkeld Dykes, Penrith: *March 10th*, 1911.

*Cassida nobilis*, L., in *Dumbartonshire*.—There being, so far as I am aware, no record of *Cassida nobilis* from Scotland, it may be of interest to readers of this Magazine to know that on June 27th last I took five specimens among stones under *Silene maritima*, on the shore of Loch Long, near Peaton, Dumbartonshire. The presence of numerous *Cassida* larvæ on the plants first attracted my attention and led to the discovery of the beetles. Dr. D. Sharp has seen one of the specimens and confirmed the identification.—WILLIAM EVANS, Morningside Park, Edinburgh: *February 9th*, 1911.

*Ova of Xanthia ocellaris taken in the field*.—I have succeeded this year in finding four batches of ova of *X. ocellaris*, and as this is, I believe, the first time that they have been taken in the field in England, the record may be of interest. All the ova were laid between the catkin buds and the twig on black poplar, and in three cases they were on the under-side, and therefore least exposed to the sun. The numbers were respectively 11, 7, 5, and 2.—H. O. MILLS, Hurst Cottage, Hampton-on-Thames: *March 1st*, 1911.

~ *Hymenoptera Aculeata in Cornwall in 1910*.—The climatic conditions throughout the year were extremely unfavourable for Entomology, embracing as they did low temperature, lack of sunshine, continued gales of wind, and an abnormal rainfall. The scarcity of *Lepidoptera* was especially noticeable, though not surprising, when one considers that similar conditions prevailed during the season of 1909. With *Hymenoptera*, however, the results were more satisfactory, and I have to record having captured 101 species of Aculeates, amongst which are a few very rare ones. In my contribution to the February number (1909) of this Magazine I had the pleasure of saying that all the species had been determined by the late Mr. Edward Saunders, whose untimely death took place in that very month; may I therefore be permitted to express how deeply, in common with all Hymenopterists, I deplore this great loss to the Entomological world. His co-worker, the Rev. F. D. Morice, has generously come to my aid and determined all my captures for 1910, and to him I tender grateful thanks for this valuable assistance and encouragement.

The following is my list, giving all the data possible, which information

appears to be so frequently wanting in the works on Aculeates, that I have so far been able to study. The Classification is that of Saunders's "Hymenoptera Aculeata of the British Islands."

I.—Three species new to Cornwall: *Astutus stigma*, Panz., five ♂♂ June 11th, on North Coast; (a very rare insect, of which Saunders says "A. *stigma* is so rare that nothing is known of its habits"). *Andrena apicata*, Smith, eight ♂♂ and one ♀ March 30th, Truro district, at rest in sunshine on telegraph post; one ♀ April 1st, Truro district, on wing about gorse flowers ("a rare insect," Saunders). *Megachile ligniseca*, Kirb., two ♂♂ July 2nd, near Idless ("not common," Saunders).

II.—Other species to those recorded in last year's Ent. Mo. Mag., p. 38. *Tiphia minuta*, V. d. L., one ♀ July 2nd, near Idless, at rest on alder leaves. *Pompilus gibbus*, Fab., one ♀ July 2nd, near Seawater, on *Heracleum* flower; three ♀♀ September 8th, 10th and 13th, Lizard district. *P. pectinipes*, V. d. L., one ♀ September 2nd, North coast. *Salix affinis*, V. d. L., one ♀ September 5th, Carnon Croft ("rare," Saunders). *Trypoxylon figulus*, Linn., one ♀ July 23rd, Calenick. *Ammophila hirsuta*, Scop., numerous ♀♀ from April 13th to June 18th, on North Coast. *Pemphredon lugubris*, Latr., seven ♀♀ September 14th, Lizard district, found flying in and out of a rotten stump of tree of which I broke off a piece and found nests in galleries which were abundantly provisioned with green *Aphides*; flying in and out of same tree stump I took at same time four ♀♀ *Crabro clavipes*, Linn. *Crabro elaripes*, Linn., four ♀♀ September 14th, Lizard District (see note with preceding species). *C. leucostomus*, Linn., two ♀♀ September 14th, Lizard district. *C. varius*, Lep., one ♂ July 2nd, near Idless, at rest on Alder leaves. *C. cavifrons*, Thoms., two ♂♂ July 1st, Devoran, on *Heracleum* flowers; four ♂♂ July 8th, near Idless, on *Heracleum* flowers. *C. vagus*, Linn., one ♂ July 8th, near Idless, on *Heracleum* flowers. *Odynerus pictus*, Curt., one ♂ June 19th, Truro; one ♀ July 1st, Devoran, about one foot above high water mark in a horizontal crevice of rock along tidal creek; the crevice was sealed with mud for about an inch in length, which attracted my attention; a single green Lepidopterous larva was found inside crevice with the insect ("not common," Saunders). *O. gracilis*, Brullé, one ♂ and one ♀ July 2nd, near Idless, on wing about marshy ground. *Halictus xanthopus*, Kirb., one ♂ September 7th, near Helston, on bramble flower (uncommon in Cornwall). *H. leucozonius*, Schr., two ♀♀ June 18th, North Coast; one ♂ September 5th, Carnon Croft, on heather flower; two ♂♂ September 14th, Lizard district. *H. quadrinotatus*, Kirb., one ♀ April 8th, near Truro; one ♀ May 16th, Truro; one ♂ September 5th, Carnon Croft, on flowers of heath and heather ("uncommon," Saunders). *Andrena pilipes*, Fab., one ♂ and seven ♀♀ September 9th, Lizard district, on flowers of *Erica vagans* ("not common," Saunders). *A. rosæ* var. *austriaca*, Panz., one ♂ July 23rd, near Truro, flying along hedgerow; the Rev. F. D. Morice remarks, "very beautiful variety, with white apical bands; cf. Panzer's *austriaca*." The only previous record for Cornwall is that of Mr. D. Marquand for Land's End district, 1881, see Penzance Natural History and Antiquarian Society Transactions, Vol. I, N.S., 1880-1884, where Mr. Marquand states that "all his Aculeates were determined by Mr. J. B. Bridgman, Norwich." *A. fulva*, Schr., one ♀ May 16th,

Carew Woods, at rest on road in sunshine. *A. clarkella*, Kirb., one ♀ April 1st, near Truro, flying about gorse flowers. *A. fulvicrus*, Kirb., three ♂♂ and three ♀♀ April 2nd, near North Coast, on gorse flowers and willow catkins. *A. proxima*, Kirb., five ♀♀ July 2nd, near Idless; two ♀♀ July 8th, near Idless; one ♀ September 9th, Lizard district ("a very rare insect," Saunders): the only previous record for Cornwall is a single ♀ taken June 7th, 1883, at Gulval, near Penzance, by Mr. E. D. Marquand; see Penzance Transactions, previously referred to. *A. afzeliella*, Kirb., one ♀ September 5th, Carnon Croft, on heath and heather flowers; one ♀ September 9th, Lizard district, on flowers of *Erica vagans*. *Cilissa ieporna*, Panz., one ♂ July 9th, Calenick, on flower of field rose ("not common," Saunders). *Panurgus calcaratus*, Scop., one ♂ July 20th, near Helston, curled up in flower of hawkweed, in heavy sea fog. *Nomada solidaginis*, Panz., four ♀♀ September 5th, Carnon Croft, on flowers of heath and heather. *N. bifida*, Thoms., one ♀ May 16th, near Truro, about gravelly bank. *Epeolus rufipes*, Thoms., one ♀ September 5th, Carnon Croft, on flowers of heath and heather. *Megachile argentata*, Fab., four ♂♂ June 18th, North Coast. *Osmia aurulenta*, Panz., three ♂♂ and one ♀ April 30th, three ♂♂ May 14th, five ♂♂ and four ♀♀ May 21st, one ♂ and four ♀♀ June 18th, all on North Coast; ♀♀ taken twice in snail shells into which I saw them creep. *Anthidium manicatum*, Linn., one ♀ July 8th, near Idless; one ♀ July 23rd, Calenick ("not common," Saunders). *Bombus jonellus*, Smith, one ♀ April 8th, near Truro, on willow catkin. Last year I recorded as "new to the county" the following species, of which I have again captured specimens this year:—*Andrena fucata*, Smith, two ♂♂ May 6th, near Truro. *Bombus soroensis*, Fab., one ♂ September 30th, near Truro ("a rare insect," Saunders, "a good thing every where," Rev. F. D. Morice).

Amongst my other captures for 1909 were the following additional species which the late Edward Saunders especially asked me to record, and of which I have further captures this year as follows:—*Oxybelus mucronatus*, Fab., ♀♀ only September 2nd, between Newquay and Perranporth ("rare," Saunders). *Odynerus trimarginatus*, Zett., one ♀ September 10th, Lizard district. *Colletes succinctus*, Linn., four ♂♂ and two ♀♀ September 5th, Carnon Croft, on flowers of heath and heather. *Andrena rosæ*, Panz., var. *spinigera*, Kirb., one ♀ March 23rd, near Feock; three ♂♂ April 1st, near Truro, flying around gorse flowers; one ♀ September 7th, near Helston, on bramble flower; six ♀♀ September 9th, Lizard district, on bramble flowers ("not common," Saunders). *A. angustior*, Kirb., one ♀ March 23rd, near Feock, on dandelion flower; one ♀ April 29th, Devoran; five ♂♂ May 16th, between Truro and Restronquet. *Osmia solskyi*, Moraw., = *leaiana*, Kirb., = *fulviventris*, Panz., one ♀ June 17th, Calenick; one ♀ June 19th, Truro. *Bombus latreillellus*, Kirb., var. *distinguendus*, Mor., one ♀ June 3rd, near Truro, climbing about tall grass stems in a somewhat lethargic condition, about 10 a.m. on a grey morning.

It may be interesting to record the following "Stylopised" insects:—*Andrena rosæ*, var. *trimmerana*, Kirb., one ♀ May 15th, 1909; *A. nigroænea*, Kirb., one ♂? May 29th, 1909; *A. rosæ*, var. *trimmerana*, Kirb., one ♂ April 24th, 1910; *A. nana*, Kirb., one ♀ July 2nd, 1910; one ♀ July 8th, 1910.

*Vespidæ* (wasps) were much less numerous than usual throughout the year.—W. A. ROLLASON, "LAMBORNE," Truro, Cornwall; *February 16th, 1911.*



*Some Hymenoptera Parasitica from the Highlands.*—In August and December last I did a little collecting on Deeside, between Banchoory and Ballater, as in the same months of 1909 (*cf.* Ent. Mo. Mag., 1910, Jan., p. 36). The two seasons were very different; this year the flowers were earlier and sooner over, there was less heavy rain in those months, and there was a plague of wasps. Every head of blossom was covered with them, and there was a corresponding scarcity of other insects. The *Ichneumonidæ* taken are worth recording, as so few records are known from Scotland; the predominance of males is due to the fact that they were mostly taken by hand from *Umbelliferæ*, only a small proportion being taken by promiscuous sweeping. *Cælichneumon fuscipes*, Gmel., ♀, all the previous records appear to be from London and the southern counties; *Cratichneumon annulator*, Fab., ♂; *C. coruscator*, L., ♂, Mr. Claude Morley (*Ichn. Brit.*, i, 66) considers this to be a southern species, and not recorded north of Suffolk; *Barichneumon vestigator*, Wesm., ♂; *Ichneumon latrator*, Fab., ♂ ♀; *I. atramentarius*, Grav., ♂, rarely taken so far north; *I. extensorius*, L., ♂; *I. confusorius*, Grav., ♂; *Chasmius molatorius*, F., ♂; *Ctenichneumon fossorius*, Grav., ♀, first recorded (*l.c.*) from Scotland by me last year; *Amblyteles oratorius*, F., ♂; *Platylabus pedatorius*, F., ♀; *Microcryptus nigrocinctus*, Grav., ♂; *M. sperator*, Müll., ♂; *Glyphicnemis profligator*, F., ♀; *G. crythrogastra*, Grav., ♀ ♂; *Phygadeuon variabilis*, Grav., ♂; *P. fumator*, Grav., ♂; *Hemiteles fulvipes*, Grav., ♀; *Stilpnus gagates*, Grav., ♀; *Attractodes bicolor*, Grav., ♀; *A. gilvipes*, Holmgr., ♂, rare; *Exolytus scrutator*, Hal., ♂, rare; *Pimpla detrita*, Holmgr., ♀; *P. examiner*, Fab., ♂; *Glypta sculpturata*, Grav., ♀, not previously recorded further north than Freshney Bog, Lincs.; *Lissonota bellator*, Grav., ♂; *L. cylindrator*, Vill., ♀ ♂; *L. sulphurifera*, Grav., ♀ ♂; *L. variabilis*, Holmgr., ♀; *Meniscus catenator*, Panz., ♀; *Bassus biguttatus*, Grav., ♀; *Bassus*, sp. n., probably undescribed; \* *Exochus prosopius*, Grav., one very small ♂; *Tryphon elongator*, Fab., ♂, I also took several ♀ ♀ of this at Nairn in 1904; *T. helophilus*, Gr., ♂; *T. vulgaris*, Holmgr., ♀; *T. bruniventris*, Grav., ♂ ♀; *Cteniscus ustulatus*, Holmgr., ♂; *C. flavilabris*, Holmgr., ♀; *C. dahlbomi*, Holmgr., † ♂; *Mesoleptus ruficornis*, Grav., ♂; several specimens of *Perilissus*, *Euryproctus*, and *Mesoleptus* as yet unidentified; *Plectiscus albipalpis*, Grav., ♀; *Mesochorus fulgurans*, Curt., ♀; and *M. vitticollis*, Holmgr., ♀. There was not anything worth noting among the few *Braconidæ*, *Aculeata*, and *Tenthredinidæ*; the latter were very scarce this year, in strong contrast to the large numbers in 1909.—E. A. ELLIOTT, Hampstead: December, 1910.

*Mycetophila ornata*,? Steph., in the New Forest.—For some time I have, without success, been trying to find the specific name of two specimens of a *Mycetophila* taken at Lyndhurst on April 13th, 1897, and November 4th, 1908, respectively. A few days back however, quite by chance, I came across the subject of this note figured and described in the Supplement to Stephens' "Illustrations of British Entomology," and whether rightly or wrongly named,

\* This interesting insect, hitherto unknown to me, will be described in the forthcoming volume (vol. iv) of my "Ichneumonids of Great Britain."—CLAUDE MORLEY.

† I have just discovered that this species is synonymous with *Tryphon lineola*, Steph. (*Illustr. Mand.*, vii, 255), the type of which is a ♀, still extant in the British Museum Collection; Holmgren's name must follow.—C. M.

it is certainly the same as my own, but unfortunately no such species as *ornata*, Steph., is mentioned in any British or foreign list that I possess, nor can I trace it as a synonym. I shall therefore be much obliged if any of your readers can inform me what species Stephens' figure really represents?—FREDK. C. ADAMS, 30, Ashley Gardens, S.W.: *January 11th, 1911.*

*Species of Epicypta and Phronia bred.*—In the May number of this Magazine for 1910, p. 119, there is a short notice on the breeding of a *Mycetophila* from some very small limpet-like larvæ found crawling on barkless sodden oak branches. Mr. Swanton has again found apparently the same kind of larvæ both near Haslemere, May 18th, and at Weston-super-Mare, June 26th, on barkless sodden fir branches; these he sent to Mr. F. Jenkinson, of Cambridge, who in each case, bred from this material specimens of *Phronia basalis*, Winn., or a very nearly allied species. On searching again at Haslemere Mr. Swanton found, on November 4th, some dark slug-like larvæ feeding on sodden barkless fir-wood, from these he bred, early in December, several flies, which he sent to Mr. Jenkinson who determined two of them as *Phronia ?basalis* ♂ and ♀, with them were a species of *Rhymosia* and of *Mycetophila*; but one or other of these was caught on a window, and perhaps had not been bred from the fir wood.

Mr. Jenkinson has also seen one of the specimens bred in 1909, and says it is certainly a species of *Epicypta*, perhaps *trinotata*, Stæg.

Thus we have species of two different genera of *Mycetophilidæ* apparently bred from these two kinds of larvæ; it remains for Entomologists to collect and breed these larvæ and discriminate between them.—E. N. BLOOMFIELD, Guestling Rectory: *February 11th, 1911.*

*Hemiptera in Surrey and Dorsetshire.*—During an excursion from Woking in the early part of August, 1910, I found *Oncoetylus viridiflavus* in abundance on the top of the Hog's Back. Within some hundred yards there must have been thousands on the *Centaurea*, for, every time I swept, there were forty or fifty in the net. I also found it on the next day in some quantities on *Centaurea* near Byfleet Station.

On another day I managed to take three specimens of *Anthocoris limbatus* on willow, but not on the same bush as I had taken it in two previous years, so that the species seems to be spreading. I may also record *Salda marginalis* from Studland, Dorset, which is a new locality for it. I have also to add the capture of *Aphanus quadratus* by myself at Swanage last July.—H. A. SAUNDERS, Brookfield House, Swanage: *February 19th, 1911.*

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## Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquhoun Street, Liverpool, *January 16th, 1911.*—MR. GEO. ARNOLD, M.Sc., Vice-President, in the Chair.

A discussion on "*Agrotis cursoria* and its Varieties" was opened by Mr. W. Mansbridge and continued by Mr. T. Baxter, of St. Anne's-on-Sea, Mr. F. N. Pierce, and other Members. Mr. Baxter brought his fine varied series of *cursoria* for exhibition, which included some very rare forms as well as the commoner vars. *brunnea*, *ochrea*, *sagitta*, *cærulea*, *costa-cærulea*, and *obsoleta*. Mr. W. Mansbridge also brought a varied series from St. Anne's. At Wallasey and Crosby *A. cursoria* is of extremely rare occurrence and, though still common on the North Lancashire sandhills, it is not nearly so abundant as was the case some twenty years ago, owing to the encroachments upon its haunts by builders and golfers. Mr. Baxter said, that having given particular attention to the matter, he had never seen the ordinary mottled form *in cop.* with the streaked form *sagitta*, and suggested that there might be two species in collections under the same name; he had seen many specimens paired during the last season, but they were always of similar varieties. Other exhibits were: by Mr. C. B. Williams, *Hesperia lineola*, *Apamea ophiogramma* and *Plusia moneta* from Cambridge; a series of *Macrogaster castaneæ* and a large number of local fen species from Wicken. Mr. Geo. Arnold brought *Pepsis formosus* from California, locally called the "Tarantula Killer" together with our largest British Pompilid, *Salix fuscus*, for comparison; also *Anomma burmeisteri* ♂ and ♀, the "Driver Ant" from Central Africa.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries.*

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THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:  
 Thursday, December 5th, 1910.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. Kidner, of Sideup, was elected a Member.

Mr. Sich exhibited, on behalf of Mr. J. W. Tutt, a pair of the beautiful Gelechiid, *Gelechia tessella* (*quadrella*), taken on August 9th, 1908, in the Lower Engadine, between Sus and Lavin, over 4600 ft. elevation. Mr. R. Adkin, a series of *Anthrocera filipendulæ*, reared from pupæ gathered at Westerham, which emerged in late July, and also specimens captured at Northwood in late June some years ago. He then discussed the form known as *A. hippocrepidis*. Mr. W. J. Kaye read a paper entitled "Collecting in Brazil," being an account of a long visit paid to that country by Mr. Dukinfield Jones and himself in the early part of 1910. Mr. Jones then showed a large number of slides, most of them original, illustrative of the paper.

Thursday, January 12th, 1911.—The President in the Chair.

The President referred to the great loss that the science of Entomology had incurred by the death of Mr. J. W. Tutt, a past President of the Society.

Mr. Phillips, of Forest Gate, was elected a Member.

Mr. Tonge exhibited photographs of the ova *in situ* of *Plebeius argus* (*ægon*), *Ruralis betula*, and *Calamia lutosæ*, and also of the early stage of a wasp's nest (*Vespa sylvestris*) found in a pig-sty. Mr. Lucas, a teratological example of *Anosisia plexippus* with right fore-wing shorter and narrower than

normally and with concave outer margin. Mr. Newman (1), extremely light and very dark forms, with unusually small and very large forms of *Malacosoma castrensis* and *M. neustria*; (2), a very red *Phlogophora meticulosa*; (3), second brood specimens of *Pericallia syringaria*, small and dark-banded; (4), second brood of *Selenia lunaria*, i.e., v. *delunaria*; and (5), living imagines, pupæ and full-fed larvæ of *Aphantopus hyperanthus* reared by Mr. Oliver. Mr. Adkin, selections of several broods, reared originally from a black ♀ ab. *nigra* of *Boarmia gemmaria* and communicated a full note on the results. Mr. Hemmings, bred and caught series of *Melitæa aurinia* from Wiltshire, where the species has been somewhat common. Mr. Hemmings, on behalf of Mr. P. A. Buxton, the same species, with the note that all emerged in the afternoon; he also showed series of *Adopæa flava* from Sussex showing two distinct forms. Mr. Coote, two very dark green examples of *Panolis piniperda*. Mr. Platt Barrett, an example of *Saturnia pavonia-major* from Sicily. Mr. Kaye, *Myelobius murana*, a Sphingid-like Pyralæ from S. America. Mr. Step, a cluster of oak galls, *Cynips kollari*, from which birds had systematically extracted the tenant larvæ. Dr. Hodgson, long series of varied forms of *M. aurinia* of many localities. Mr. West called attention to the drawer of the Society's type collection which he was exhibiting and to which, while re-arranging, he had added some 60 species of *Coleoptera* from his own collection. Mr. Priske showed a number of slides illustrative of the life-history of the glow-worm, which Mr. Main and he were observing, and read notes on what they had so far effected. Mr. Lucas read a paper, "Notes on the Natural Order Neuroptera," and showed a large number of lantern slides to illustrate his remarks.

Thursday, January 26th, 1911.—The President in the Chair.

#### ANNUAL MEETING.

The Report of the Council was adopted. It stated that the membership stood at 164, and that the average attendance at the twenty-three meetings was 33. The volume of Proceedings published consisted of 150 pages with 13 plates, and was the most attractive that the Society had produced. The following is a list of the Members elected to fill the offices of the Society for the ensuing year—*President*: W. J. Kaye, F.E.S. *Vice-Presidents*: A. Sieh, F.E.S., and A. E. Tonge, F.E.S. *Treasurer*: T. W. Hall, F.E.S. *Librarian*: A. W. Dods. *Curator*: W. West (Greenwich). *Hon. Secretaries*: Stanley Edwards, F.L.S., F.Z.S., F.E.S. (*Corresp.*), and Hy. J. Turner, F.E.S. (*Report.*). *Council*: R. Adkin, F.E.S., F. W. Cowham, E. C. Joy, F.E.S., R. A. R. Priske, F.E.S., A. Russell, F.E.S., B. H. Smith, B.A., E. Step, F.L.S. The President then read his Address. After dealing with the affairs of the Society and making suitable references to those who had passed away during the year, particularly to the irreparable loss, not only the Society, but the Entomological world, had incurred by the death of a past President, Mr. J. W. Tutt, he proceeded to the subject of his Address: "Neuration in its bearings on the Classification of *Lepidoptera*." Votes of thanks were then passed to the retiring Officers and Council. Mr. Turner, on behalf of Mr. Murray, of St. Anne's-on-Sea, exhibited a series of *Luperina guenei* taken at the above place, including the typical

form, the var. *bauxeri*, and two new and very distinct forms, one of them with a very pale, almost white, sub-marginal band, which he was naming var. *murrayi*, and the other several very dark melanic specimens which he was naming var. *fusca*. Both worn and almost bred conditioned specimens were shown. Mr. Newman, autumn bred specimens of var. *hutchinsoni*, of *Polygonia c-album* they were from the same ♀ as the yellow forms.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, February 1st, 1911.*—  
Mr. G. T. BETHUNE-BAKER, F.Z.S., in the Chair.

It was announced that the Council had nominated the Rev. F. D. Morice, M.A., as President for the current year.

Mr. W. J. Kaye exhibited several *Heliconii* from Eastern Ecuador, including the forms *H. rubripicta*, *adonides*, and *feyeri* with streaked hind-wing. He observed that it seemed now to be possible, and even likely, that *H. melpomene aglaope* would eventually be proved to be linked with *H. plesseni* through these newly discovered forms, and that this species would then have to be sunk as a sub-species of *H. melpomene*. Similarly, *H. notabilis* through *ilia* and *feyeri* was probably only a sub-species of *H. erato*, though the material was insufficient at present to form a conclusion. Dr. Nicholson exhibited and described a new species of *Tachyporus* which he has named *fuscitatus*. There were two specimens taken at Wicken Fen from under sedge-refuse, in April and August, 1910. This species is intermediate between *T. solutus*, Er., and *T. chrysomelinus*, L. It differs from the former in the shape of the antennae, which are of the same length, but are not thickened towards the apex; by its finer punctuation throughout; by the pronounced broad black band on the elytra; and by the fact that the marginal bristles of the elytra are long and stout, as in *T. chrysomelinus*, and not short and fine, as in *T. solutus*. Mr. H. J. Turner, several very interesting forms of *Luperina gueneei*, including two new aberrations: (i), ab. *murrayi* (n. ab.) which is quite typical *L. gueneei* in texture, shade of colour, and in markings, with this very marked difference, that the sub-marginal area between the dark marginal lunules and the sub-marginal line, is much paler than any other portion of the wing, throwing out by contrast these dark lunules very conspicuously; (ii), ab. *fusca* (n. ab.), of which three specimens were exhibited, are undoubted *L. gueneei* in all their characters but depth of colour; these are believed to be the first melanic specimens which have been so far obtained. All the markings are much intensified, the ground colour is much darker than in typical examples, very dark grey with, in a good light, faint flushes of a ferruginous tint. The contrast between ground colour and markings is very much stronger than in any of the other forms. Mr. Champion, on behalf of Mr. J. H. Keys, the black variety of *Athous hæmorrhoidalis*, F., from Dartmoor, recorded by the latter in the Ent. Mo. Mag., xlvii, p. 262; and also a red variety of the ♂ of *Agabus bipustulatus*, L., from the same locality. The Rev. A. T. Stiff, who was present as a visitor, exhibited some second brood specimens of *Polygonia c-album* var. *hutchinsoni*. The vars., including three intermediate, emerged on October 16th, 19th (3), 20th, 21st (2), 22nd, 23rd and 26th, 1910. It is believed that there is no record of var. *hutchinsoni* having

ever been bred in the second brood of *c-album*. Mr. Rowland-Brown and Mr. Bethune-Baker both observed that on the Continent they had taken hibernated specimens of the var. *hutchinsoni*. Dr. O. M. Reuter communicated a paper entitled "Bryocorina nonnulla Aethiopiae descripta" ab O. M. Reuter et B. Poppins. Commander Walker, one of the Secretaries, read a paper on behalf of Col. Manders, entitled, "A factor in the production of mutual resemblance in allied species of butterflies: a presumed Müllerian combination of *Euploea* in S. India and *Amauris* in S. Africa." The methods adopted in his experiments, and the conclusions drawn from them by the author were, to some extent, the subject of criticism, both by Mr. G. A. K. Marshall and Dr. Chapman. Mr. Merrifield added a few observations with regard to the comparative immunity of Pierine butterflies from the attacks of birds.

A vote of condolence with the family of the late Mr. J. W. Tutt was moved from the Chair, all the Fellows present signifying approval by rising.—  
GEORGE WHEELER, *Hon. Secretary*.

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#### A WEEK'S COLLECTING AT BERISAL.

BY G. T. BETHUNE-BAKER, F.L.S.

I arrived at Berisal from the Laquinthal on Monday, July 25th; the day was cold, but at that favoured spot the sun was shining, and the air very different to that I experienced over the Simplon, where it was necessary to walk really quickly in order to keep warm, whilst on the Kuhn itself a short cold shower of sleet greeted me. After lunch I descended to the "Pont Napoleon" to explore that part of the district, but beyond a few *Plebeius coridon* and one or two of the commoner species very little was on the wing, the day not having been warm enough to induce butterflies to fly later than usual. I took, however, a nice ♀ *P. bryoniae* and *Colias phicomone*. *Zygæna transalpina* was quite fresh, the specimens being beautifully deep red in their underwings and markings, whilst an almost typical *carniolica*, but with the abdomen all black, accepted warmer quarters in a glass-bottomed box without demur; it was, however, getting towards evening, so I returned under the hospitable roof so ably and kindly conducted by Mrs. Keating, and wondered what acquaintances I should make at the dinner table.

The following day was lovely, and was spent in the well known haunts of *Plebeius lycidas*; on my way thither much time was spent in watching and taking other species. *P. coridon* was quite the commonest "blue" present, *P. escheri* came next, and of this I took a good series, but females were not much "en evidence," and I only obtained a single specimen; *icarus* was almost over, *thetis* also being in the same condition, so that I only retained three examples. *P. hylas* was equally scarce in that part of the valley, and I took but one,

which, however, made up for its rarity by being of a quite unusually deep blue, something very near to *escheri*, but bluer and more lustrous, whilst on another occasion I took a second specimen that is the largest and most brilliantly pale lustrous blue I have yet seen. Of *P. danton* I captured under a dozen altogether, so that it also could not be considered abundant, but it may come on rather later at this altitude, for I remember finding it in very large numbers at Alvanen Bad (a lower altitude) during the first week in August; a few examples of what used to be known by the name of *argus*, quite fresh and good, also made the acquaintance of my net.

As I came to the fir trees, the *Satyridæ* soon made themselves seen, and if not secured at the first stroke generally made themselves scarce; ♀ *S. semele* were beautifully dark, with broad yellow areas, *hermione* also was fairly common, whilst *cordula*, in most beautiful condition, deep velvety black, was not uncommon, but most elusive; it is an insect that always makes me covetous, and I cannot help going after it, but it has a (to me) uncertain flight, and at the critical moment has a peculiar knack of doubling, so that when you think he is secured this time you find he has tricked you again, and is "lost to sight, though to memory dear."

At last, in spite of all the Scyllas and Charybdis, in the form of these various enticements, the "lycidas ground" is reached, but, alas, the hay is cut, nevertheless, here comes one along, which is secured, and another, and another, but evidently the time of their beauty is nearly over, the females are as common as the males, and on the whole in better condition, and, all told, only a moderate series falls to my lot: it was, however, delightful to make a first acquaintance in the flesh with the species, and also on the same ground to take *Parnassius mnemosyne*, the only one I saw during my holiday. *Melanargia galathea* was also obtained in good order, whilst *Melitæa didyma* was not uncommon, and *Argynnis lathonia* presented itself in a single example.

One species that always delights me I omitted to mention, viz., *Heodes alciphron* var. *gordius* in both sexes, its colour always gives me great satisfaction, and creates a sense of delight that no other of its genus does, though *virgaureæ* is a real jewel in the brilliant sun.

Several of the following days were spent exploring the secrets of the Bortel Alp and Glacier, and also in the Steinthal and around its large moraine. For my excursion to the latter locality I had the pleasure of having for my companion Monsieur de Beaulieu, of Cannes, who was also a keen collector, and we had, so far as I was concerned,

several very happy days together; the one spent in the Steinthal, however, was not altogether a success, from the entomological point of view, for when we got well up in the valley the sky clouded over with the natural result of quite a small list of captures. Perhaps the commonest insect of all that we encountered was *Psyche plumistrella* on the ridge of the mountain beside the Stein Moraine, and above the Moraine, where it was most plentiful, had one desired it we could have taken hundreds of specimens. Among the bilberry, so plentiful on the side of the mountain, high up opposite Berisal, *Colias pulveo* was flying as late as 5 p.m., when the sun had appeared again and was shining brightly, I took several specimens on our way back from the Stein valley. The Bortel Alp and above it was also an excellent hunting ground, whilst the valley leading to both localities abounded with the species that haunted the lower levels. *Parnassius apollo*, large fine examples, were not infrequent beside the road below the Pont Napoleon, and I noticed the spots were very deep carmine red. For the first time in my life I was able to take *Pieris callidice* in beautiful condition in the higher regions without having to bestow on them any superfluous exertion; they were quite common, especially below the Bortel Glacier, and a fair series of both sexes was obtained; *napi* was almost over, *Colias phicomone* was plentiful here as elsewhere, whilst the Argynmids were remarkable rather by their absence than their presence; *aglaia* was flying but rarely; of *euphrosyne* I only captured four, two quite fresh and two worn; *pales* in the higher regions was as plentiful as usual, but I came across no varieties, such as one sees not infrequently in the Engadine.

On the Bortel Alp *Melitaea cythia* was not uncommon, and was in very good condition, one or two of my captures having evidently emerged the same day. Here also *Anthrocera evulans* was flying most vigorously and plentifully; I do not remember to have seen this species so active elsewhere, the males flying generally about eight feet from the ground in a straight line and at a very rapid pace, I noticed it in the first instance by missing the specimen I struck at, and wondering which species it could be, as earlier in the day I had taken them on the flowers or flying from flower to flower, but this afternoon flight, between 3.30 and 4.30 p.m., was different to anything I had observed before, it appeared to be confined to the males, as I did not take any females at this time. *Parasemia plantaginis* was also much "en evidence" on the same spot, where I also took both *v. hospita* and *ab. melas*; *Setina aurita*, var. *ramosa* was likewise not infrequent, and in beautifully fresh condition.



## CHANGE OF ADDRESS.

PHILIP DE LA GARDE, to "Woodlands," Avonwick, S. Brent, S. Devon.

MALCOLM BURR, to Castle Hill House, Dover.

M. E. DATTIN, 27, Rue Bezançon à Langres (Haute Marne), France.

---

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The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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Just over the waterfall at the back of this Alp *Erebia gorge* loved to disport itself, settling in the blazing sun on the hot rocks above the stream with its wings rather more than half open and head upwards, so that the full rays would shine direct upon it; this species, though often difficult to take, was not rare, but it did not frequent the Alp to any extent, though I took it all over the district near the streams among the rocky and broken ground. On the Bortel Alp and the mountain slopes *E. lappona* was the commonest of the genus, next to this came *epiphron* in the higher altitudes, but in the lower districts *ligea* was far away the most frequent of the group; of *melampus* I only took a couple of specimens, and *tyndarus*, though in excellent condition, was not as common as I should have expected. I captured a nice series of *mnestra*, but *goante* was quite rare, but perhaps late in the season as it was, the species was just beginning to emerge, as a week and a fortnight later I found it plentifully at Macugnaga, and also at Saas Fée; *ceto* was probably going over, as only a short series fell to my net, whilst of *stygne* I only took a single specimen with an excessively black under-side.

There are one or two points of interest that I noted in the *Erebice*—there was quite a high per centage of *gorge* without any spots at all on the upper surface, and this was usually repeated below as well; *ligea* and its var. *adyte* occurred somewhat indiscriminately together; *epiphron* also had a strong tendency to develop spotless aberrations, and I took some specimens without any spots whatever; of the one species that I especially wanted, viz., *glacialis*, I did not see a single example, and I learned from other entomologists in the hotel that it had scarcely been seen at all this season.

*Ctenonympha arcania* was very common in its form *darwiniana*, the specimens being of an unusually bright fulvous. *Lithosia lurideola* I found both at rest and on the wing, evidently recently emerged, whilst *Emydia cribrum* v. *punctigera* was also taken at rest. *Macroglossa stellatarum* was busy as usual in the hot sun, whilst in the valleys I found *Anthrocera loniceræ* and *transalpina* fairly abundant, *filipendulæ* was rare, and I took a couple of examples of *carniolica* v. *hedysari*. The only species of *Ino* that I saw or took was a pair of *statices* v. *heydenreichii*.

*Anthrocera achilleæ* was not uncommon near the haunts of *P. lycidas*, whilst high on the way to the Bortel Alp some beautifully blue

v. *heydenreichii* fell to my net, and in the same place *Nemeophila sanio* (*russula*) was taken flying wildly over the bilberry; here also I took *Anarta melanopa* and both *Psodos alpinata* and *coracina*, whilst nearer the glacier *P. trepidaria* was less common; a nice pair of that interesting black Tineid *Melasina lugubris* also fell victims to my avarice. In the valley beside the main stream *Plebeius argus* (*ægon*) was very abundant, with unusually broad dark borders; *argyrognomon* was comparatively scarce, whilst *Syrichthus cacaliæ* was plentiful, *alveus* less so, and *carthami* not infrequent. Of *Adopæa lineola* I took but two, but *A. thauinus* was plentiful. Of *Lycenidæ* in the higher regions my list is small. *Plebeius argus* (*ægon*) occurred high up in the Steinthal, with a single specimen of *argyrognomon*, and the former also occurred fairly high towards the Bortel Alp, where I likewise took *semiargus* in both sexes: a single worn specimen of *eumedon* showed this species to be over; *arion* I took sparingly all over the district, a couple of rich blue, though over a very restricted area of the wings, and nicely radiated females fell to my net, and several of the males were of the spotless variety; *astrarche* now and then found its way into my boxes, as also an occasional *orbitulus*, and among the bilberry on the way up the steep zigzag to the Bortel. *Heodes hippothoe* was fairly common, but only one var. *eurybia*; *virgaureæ* at this height was just coming out, though below along the upper way of the stream near the Pont Napoleon I could have taken hundreds just emerged, but I did not see a single female at this date, evidently it was a little early, considering the lateness of the season, for a week hence at Macugnaga I took plenty of females. The only species of *Titanio* that I met with were *phrygialis* and *schränkiana*. *Crambi* were quite unusually scarce, the common *culmellus* and *dumetellus*, together with *perlillus* and its var. *warringtonellus* being the only species I saw. *Euclidia glyphica* was not an infrequent visitor, and a single *Mamestra glauca* allowed itself to be taken. I have rarely, if ever, found the *Heterocera* as a whole so remarkable for their absence.

On the whole, however, I was well satisfied with my stay. I obtained all the species but one that I went for, whilst the scenery is lovely in whichever direction one elects to go, and last, but not least, under the kind care of Mrs. Keating everything is done in the Hotel that is possible for the comfort and well being of the visitors.

19, Clarendon Road, Edgbaston :

December 6th, 1910.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH  
*TENTHREDINIDÆ*, &c. (28).

BY THE REV. F. D. MORICE, M.A., F.E.S.

*MACROPHYA*, DAHLB.

The statement in my last paper that the abdomen of *Perineura rubi*, Pz., is "fulvous-yellow (testaceous)" is correct as to the male, but requires amendment in the case of the female. In that sex the sides and the whole ventral surface of the abdomen are much infuscated and only the central portion of its dorsum distinctly reddish, somewhat as in *Thrinax macula*, Kl. (Ent. Mo. Mag., 1908, p. 193). I might have mentioned also that in this insect the thorax is prettily marked with white above in both sexes, and that the ♂ stigma is nearly unicolourous (yellow), while in the ♀ it is particoloured (the base yellow but the apex black).

Coming now to the genus *Macrophya*, I wish first to correct another inexactitude which I have only just detected in my "Table of Generic Characters" (see Ent. Mo. Mag., 1903, p. 193, line 16). There I say that in *Macrophya*, *Allantus*, and *Tenthredo* the least distance between the eyes is "less" than the width of the clypeus. This should be qualified by adding "or if not so, then with short thick antennæ and abnormally elongate hind coxæ," to meet the case of *Macrophya punctum album*, L., which, as Dr. Enslein has pointed out, differs from its congeners in having eyes lying "outside the clypeus," and separated therefore by at least the full width of the latter from each other.

The structural differences between *Macrophya* species, though not unimportant, are seldom conspicuous; and in most cases a determination can be arrived at simply from the colour-characters. Some of these, it is true, are inconstant and unreliable, but the majority of them are practically invariable—such as the colour of the stigma, and the red yellow or white markings on certain joints of the legs, which are often very characteristic and conspicuous.

Comparatively a very small proportion (less than one-sixth) of the 59 Palearctic species lately tabulated by Dr. Enslein occur in this country; but such as do occur seem to be mostly fairly common, at least in the southern counties. An exception is *albipuncta*, Fall. (not to be confounded with *punctum album*, Linn.), which I have never seen except from Germany, but which is, I doubt not, correctly recorded by Mr. Cameron as British. I include this species therefore in my Tables, but mark it with a † to show that I cannot personally vouch for its occurrence. Mr. Cameron's *hæmatopus*, however, I omit,

as I feel certain that the records of it refer (*v. infra*) to varieties of *rufipes*.

(N.B.—In the following Synoptic Tables, when abdominal segments are numbered 1, 2, 3, &c., the propodeum is *not* reckoned as one of the segments).

SYNOPTIC TABLE FOR BRITISH *MACROPHYA* SPP.

- |    |  |  |
|----|--|--|
| 1. | Hind femora bright red, at least outside .....   | 2.   |
| —  | No part of the legs red.....   | 4.   |
| 2. | Hind femora streaked longly with black inside, hind tibiæ black entirely. Abdomen with a broad red band occupying three segments. Stigma yellowish (♂. Length of body, about 9 mm.) .....  | <i>rufipes</i> , Linn. ♂.                              |
| -- | Hind femora almost immaculate red, hind tibiæ not entirely black. Abdomen never with more than two red segments, sometimes (♂) black entirely.   | 3.   |
| 3. | Stigma yellow. Hind tibiæ broadly ringed with red at their apices. Abdomen distinctly and evenly punctured, scarcely shining; segments 3—4 nearly always marked above with red; sides of segm. 6, with large creamy marks covering part of its dorsal surface; sides only of segm. 7 with similar but smaller spots hardly visible from above; apical segment entirely of the same colour. Clypeus wider than the least distance between the eyes. Length, about 11 mm.....  | <i>rufipes</i> , Linn. ♀.                              |
| —  | Stigma dusky. Hind tibiæ at their apices only streaked (not ringed) with white (not red). Abdomen smooth and shining, its puncturation very indistinct and irregular; its whole dorsum (except the apical segment) black, and only the sides ornamented with an even row of five equal subtriangular whitish spots or splashes, not visible in the direct dorsal view. Clypeus narrower—or at least not wider—than the least distance between the eyes (the inner orbits of the latter being distinctly less convergent than is usual in this genus). Smaller than <i>rufipes</i> , about 8 mm long... | <i>punctum album</i> , Linn., ♀.                       |
| 4. | Hind femora and tibiæ entirely black. Abdomen nearly always with a broad red central belt or band, but in certain cases black entirely. (Large forms, about 10—13 mm. long) .....  | 5.   |
| —  | At least the hind tibiæ marked with white or yellow. No part of abdomen ever red .....   | 6.   |
| 5. | Hind coxæ in both sexes with large whitish markings. Red abdominal band often more or less obsolete in the ♂♂, more rarely so in the ♀♀.   | <i>blanda</i> , Fabr.                                  |
| —  | Very like the preceding, but the hind coxæ are entirely black, and the red abdominal band, at least in British specimens, seems to be constant and scarcely variable in both sexes. (In South Europe, however, I have taken both sexes with the abdomen entirely black, and similar varieties may perhaps occur here also). This is a very common species almost everywhere .....  | <i>annulata</i> , Geoffr.<br>(= <i>neglecta</i> , C.). |



6. Stigma yellow. (This alone will distinguish it from any of the following species!). Legs black, more or less marked with white, these markings tending to disappear in the ♂♂. The ♂ abdomen is normally quite black, but sometimes even in this sex and regularly in the ♀ two or three of the intermediate segments are spotted on the sides with white, and the middle of the 8th segm. above is white also.  
(Length, about 10—11 mm.)..... 12 *punctata*, Linn.
- Stigma always dusky..... 7.
7. Four front femora and tibiae almost entirely yellow in front and behind. The female at once recognisable by its *Allantus*-like coloration, the black abdomen bearing several yellow fasciae, continuous on the propodeum and the apical segment, interrupted (*i. e.*, broken into pairs of large lateral spots, which however occupy much of the dorsum on segments 4—5). The hind femora have yellow bases, and the hind tibiae are spotted with yellow before their apices.  
(A large species, about 10—14 mm. long).....*rustica*, Linn.
- Front femora and tibiae always more or less lined with black behind... 8.
8. Eyes nearly parallel (scarcely convergent) and distant from each other by quite the width of the clypeus. A ♂, with dull strongly punctured vertex, and entirely black abdomen. (Except as to the eyes, much resembling *ribis*, and perhaps mixed with it in collections. *cf.* the Notes on Species following) .....*punctum album*, L., ♂.
- Convergence of eyes considerable. The least distance between them less than the width of the clypeus ..... 9.
9. Pleurae with white marks. Abdominal segments with very narrow pale apical margins, somewhat widening on the sides and beneath. In the ♂ the ventral surface may be practically white. (I have never seen a British example of this insect myself, but Mr. Cameron's records of it seem to be reliable) .....† *albipuncta*, Fall.
- Pleurae immaculate ..... 10.
10. Vertex almost impunctate and very shining; marked in the ♀ (always?) with two minute white spots. Abdomen quite black, or with variable white markings (*e. g.*, on the propodeum and the apical segment in the ♀, the sides and venter in the ♂, &c., but none of these give *constant* characters!). Generally part of the pronotum and tegulae, and often the ♀ scutellum is white. Legs black with white markings.  
(Length, about 10 mm.).....*albicincta*, Schr.
- Vertex coarsely punctured and dull, immaculate in both sexes. Thorax and abdomen both entirely black. Legs black and white, much as in the last species. (Length, about 8—10 mm.) .....*ribis*, Schr.

[Besides the above species, *haematopus*, Panz.—one of the many synonyms of *diversipes*, Schr.—has been quoted as a British species, but I have little doubt (see Ent. Mo. Mag., 1902, p. 207) erroneously). This insect and the darkest forms of *rufipes* have a somewhat similar

coloration, and the two have certainly been confounded both in collections and descriptions; but they are really very distinct. In *diversipes* the dorsum of the abdomen has an intensely fine sculpture, visible only under high magnification, while the punctures etc. of *rufipes* are comparatively quite strong and conspicuous. I have several specimens of the former from Switzerland and Austria, but never saw anything really like it from any British locality, all those recorded as *hæmatopus* which I have been able to trace being undoubtedly forms of *rufipes*].

#### NOTES ON THE SPECIES.

*Rufipes* seems fairly common on the south coast (Swanage, Worthing), and I have taken it occasionally here in Surrey (Effingham) and in the New Forest.

*Punctum album* is an exceedingly pretty little insect, which I have found in many localities both British and Continental, but only ♀ ♀, and always, I believe, on privet (*Ligustrum*). I have vainly sought for ♂ ♂ in all the collections public and private which I have examined in this country and elsewhere, but never found one, nor am I acquainted with any description of it, except that in Dr. Enslin's Revision published last year. The insect is so distinct in the ♀ by its colour characters that it is perhaps not surprising that the peculiar situation of its eyes should have been unnoticed till Dr. Enslin called attention to it, and as this seems to be the only positive character by which the ♂ can be detected, specimens of the latter may not improbably exist in collections standing under the name of *ribis*. Now that its characters are known, more specimens will probably turn up, if carefully looked for in May and June near privet hedges (the species has been said to occur also on *Fraxinus* and *Quercus*).

*12 punctata*, L., is said to be attached to *Alnus*. I have taken it occasionally, but know nothing myself of its habits or life-history.

*Rustica*, in the ♀, owing to the coloration, is apt to be mistaken by beginners for an *Allantus*. It is not an uncommon insect on umbellifers, &c.; but I find no statement in any of the books I have consulted as to the food-plant or appearance of its larva, nor can I give any evidence of my own on the subject.

*Blanda* occurs here (neighbourhood of Woking) not unfrequently. Hartig says it is found "in beech woods and hedges."

*Annulata* is common and widely distributed. I have seen it running over herbage, going in and out of bushes, and once skipping

about a strawberry bed in a manner which at first made me mistake it for a large *Salix fuscus*.

*Albicincta* is found everywhere, also in Scotland (*vide* Cameron). Its food-plant is said to be *Sambucus nigra*.

*Ribis* seems to be much less common than *albicincta*, but I have found single specimens of it occasionally. Its name indicates the supposed food-plant of its larva, but whether it is really always attached to *Ribes* I cannot say.

The imagines of all the above species seem to appear usually in May or June, seldom much earlier or later. None of them, as far as I know, are double-brooded.

(To be continued).

## TWO NEW SPECIES OF THE GENUS *CHILOSIA*, Mg.

BY COLBRAN J. WAINWRIGHT, F.E.S.

I do not as a rule favour the plan of describing odd species belonging to such genera as *Chilosia*, especially from single specimens; but the two species here described are unusually well characterised, and the Swiss one being rather a fine insect which was too handsome to remain unnamed, led me to depart from my rule. By the kind permission of Herr Th. Becker I was enabled to submit my specimens to him before describing them, in order that possible mistakes might be avoided, and he writes agreeing that they are both new.

### *CHILOSIA HELVETICA*, n. sp.

♂. *Eyes and face bare; tibiae broadly yellow at both ends, tarsi in great part yellow; antennae large and all fulvous, with bare arista; largish species 11 mm. long, shining dark olive-green; pubescence on thorax short but dense, and entirely golden; wings with bright yellow veins, and a conspicuous dark patch across centre, with an inconspicuous dark cloud at tip.*

♂. Head viewed in profile with moderately produced lower face; face slightly hollowed below antennae, nearly straight; central knob small but well defined, occupying rather more than one-fourth of the face height; upper mouth edge projecting considerably further forward than central knob; lower mouth edge much below upper mouth edge, and the curve from one to the other deeply hollowed; for a similar head form see Fig. 23 in Becker's Monograph of the genus *Chilosia*, in that, however, the central knob is a little more prominent than in *helvetica*. Face without hairs, but clothed with pale tomentum, which, however, leaves the central knob down to the upper mouth edge, and the jowls in part, shining black. The eye margins narrow and equal in

width, with pale hairs; frons shining black, with a narrow margin of pale tomentum against the eyes, and a fringe of golden hairs springing out of the tomentose portion; vertex with a few golden hairs. Eyes bare. Antennæ large, wide, and rounded in front with no angulation at all; entirely fulvous, with a quite bare shining fulvous arista. Thorax dark olive-green, finely but closely punctate and shining, the puncturation coarsening posteriorly; entirely clothed with an even short but dense and conspicuous golden pubescence; scutellum like the thorax, but very coarsely punctate with a marginal fringe of rather longer pale hairs, but no bristles. Abdomen rather narrow, not widening much in the middle, nearly black; first segment covered with a bluish-grey tomentum, the others shining, finely but very closely punctate; second segment clothed with golden pubescence on the front margin and broadly at the sides, in such a manner as to leave a large semicircular discal patch on the hind margin free from the golden pubescence, but clothed with very short inconspicuous black hairs; the third segment is almost entirely clothed with the short inconspicuous black pubescence, the longer golden pubescence being confined narrowly to the sides; the fourth segment bears longer pubescence throughout, but while golden behind it tends to become darker towards the front margin. Under-side entirely covered with whitish tomentum. Legs with black femora, narrowly yellow at each end; with yellow trochanters and dark coxæ. Femora with a double row of fine black setæ on the apical inner portion, in all three pairs; those on the hind pair being more numerous, and extended over the greater part of the length; those on the front pair being inconspicuous. Tibiæ broadly yellow at both ends, in all three pairs. Tarsi clear yellow, excepting that the last two joints on the two hind pairs of legs; and the front tarsi above are darkened; all the pubescence on the legs pale. Wings with the cubital (3rd longitudinal) and marginal cross veins meeting on the costa itself, forming an acute angle, and thus leaving no stalk to the 1st posterior cell; the subcostal (1st longitudinal) vein ends abruptly in the costa with an upward curve; the 3rd section of the costa, that is the section between the terminations of the mediastinal (auxiliary) and subcostal (1st longitudinal) veins, very long, fully  $3\frac{1}{2}$  times as long as the very short 4th section; all the veins clear bright yellow in the basal half of wings, then a conspicuous dark patch extends half way across the wing, commencing at the apical portion of the mediastinal (auxiliary) vein, occupying the base of the submarginal cell and surrounding the lower cross vein, but not the discal cross vein, which is independently darkened; beyond this the veins remain dark, excepting for a conspicuous clear yellow patch on the front margin, traceable half way across the wing, but chiefly conspicuous in the stigma and in the portions of the costal and subcostal veins adjoining; the apical portion of the wings faintly clouded. Alulae whitish, with golden fringe; halteres white.

Length, about 11 mm., expanse, about 21 mm.

The species runs down to *cœrulescens*, Mg., in the table of males in Becker's Monograph, and specimens of that species were taken at the same time and place. It is, however, abundantly distinct; the smaller size, bluish-black colour, and hoary pubescence of *cœru-*

*lescens*; its small antennæ, and nearly clear wings, with but a slight dark central patch, being obvious characters sufficient to distinguish it at a glance from *helvetica*. Herr Becker remarks that it is close to *Ch. doubressouensis*; that species, however, is described by Rougemont, who published the description, as having small antennæ, *clear wings*, and no black hairs on abdomen, with a pubescence chiefly grey ("flavogriseis" on thorax, and "griseis" on abdomen), and Herr Becker adds that it also differs in the profile.

One male specimen; Aigle—Rhône Valley—Switzerland; May 13th, 1910 (C. J. Wainwright).

CHILOSIA RODGERSII, n. sp.

♀. *Eyes hairy; face devoid of hairs on the disc; no bristles on margin of scutellum; frons not sulcate, but longitudinally striate; 3rd joint of antennæ of medium size, dark red-brown, not angulated, but nearly circular, with a rather short thickish nearly bare arista; pubescence throughout pale, and short, especially on abdomen; legs with femora narrowly pale at tips; tibiæ pale at both ends, but only narrowly so at tips; tarsi all dark above, but paler beneath, especially on hind pair, and paler between the joints; wings rusty yellow; olivaceous species finely punctate and shining.*

♀. Head viewed in profile, with lower part of face not produced; face nearly perpendicular; slightly hollowed below antennæ; central knob small; mouth edge not prominent; and upper mouth edge not much above lower mouth edge; under-side of head straight and jowls about  $\frac{1}{4}$  eye width; frons wide, of eye width at vertex seen from above, and widening with the face evenly to under-side of head. Sculpturation of frons peculiar, scarcely to be described as sulcate, but the usual central sulcus indicated and bordered closely by longitudinal striæ which curve outwards above for the ocellary triangle and inconspicuously also below for the antennal base; coarsely punctate about the striæ, but becoming more finely and sparsely punctate towards the eye margins which are smooth and shining. Eyes conspicuously hairy; pubescence pale; frons also clothed with pubescence of same length and colour as the eyes, becoming rather longer at the vertex; face not very pollinose, almost all shining, with a little tomentum under the antennæ and in the hollows; eye margins rather wide but regular in width, black with pale hairs; palpi yellow. Antennæ medium in size, nearly circular, not angulated at all; dark with distinct fulvous color; perhaps better described as reddish-brown; arista shortish, thick, same colour as antennæ, with very short pubescence. Thorax and scutellum olive-green, finely but closely punctate, shining, with short thick pale pubescence intermixed with slightly longer hairs; no bristles on margin of scutellum. Abdomen a blacker olive-green, very finely and sparsely punctate, shining; with short, not dense, pale pubescence; under-side dull with hoary tomentum. Wings uniformly coloured with rather thick veins, of a rusty yellow colour; the marginal cross vein meets the cubital (3rd longi-

tudinal) almost in a right angle, and some distance from the edge of wing leaving a long stalk to the 1st posterior cell, more than  $\frac{1}{2}$  the length of the marginal cross vein. Alulae rusty yellow; halteres with dark knob. Legs with the femora dark all excepting very narrow tips; tibiae dark, with the bases broadly and tips narrowly yellow; tarsi dark above, but paler beneath, especially on front pair; and also pale between the joints. Length, 8 mm.

Herr Becker remarked that this species was quite unknown to him, and called special attention to the sculpture of the frons, which seems an important character. Owing to the difficulty of deciding whether its antennae are "rothbraun" or "schwarzbraun," it is uncertain as to which group it would run in Becker's tables; but if regarded as "rothbraun" it would run to *lanigulosa*, Becker, and *brachysoma*, Egger, neither of which it resembles, and which can be distinguished at a glance by the entirely yellow tibiae of *lanigulosa*, and the nearly bare eyes of *brachysoma*; if regarded as "schwarzbraun" it would run to the group of species including *grossa*, Fall., *montana*, Egg., and *alpina*, Zett., which it resembles no more closely; they are large, densely hairy species; *grossa*, Fall., has yellow tibiae; and the sculpturation of the frons alone would separate it from any of them.

I have named this species after the captor, the Rev. R. R. Rodgers, who first introduced me to the study of Entomology many years ago.

One female specimen; Biskra—Algeria; 1904 (Rev. R. R. Rodgers).

45, Handsworth Wood Road,  
Handsworth, Staffs.:  
March, 1911.

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*A note on Liodes (Anisotoma, Schmidt) similata, Rye.*—I have for long suspected that the *Liodes similata*, Rye, described by Ganglbauer in "Die Käfer von Mitteleuropa," vol. iii, p. 226, is not the true *L. similata*, and I think I can now definitely say that this is the case. Dr. Fleischer has kindly sent me a specimen of the insect known on the Continent under the above name, and I find that it does not answer to the original description of the species (Ent. Mo. Mag., vol. vii, p. 8). Probably the type is in the Mason collection, and so I am unable to examine it, but Mr. Donisthorpe has lent me a specimen named by Rye himself, which in every detail matches his description. The Continental species is a very distinct form, and is placed by Ganglbauer in a different subgenus from *L. badia*, Sturm, on account of the shape of the mesosternal keel. It answers the description of *L. similata* in being larger, and in having proportionately longer elytra than *L. badia*, but the punctuation of the striae of the elytra is certainly not "much more delicate," and the 4th stria is not "waved about the upper third." It differs from the true *L. similata* in having the elytra still longer, and the punctuation of the striae much stronger,

and the punctures placed closer together. It is quite evident that the Continental insect requires a new name, and I propose to call it *L. fleischeri*. I prefer to discuss later the question as to whether *L. similata* is a var. of *L. badia* or a good species.—NORMAN H. JOY, Bradfield, Reading: *April 6th*, 1911.

*Epipeda nigricans*: a correction.—The species recorded by me under this name (*Ent. Mo. Mag.*, vol. xlv, p. 268) is *Atheta (Homalota) inhabilis*, Kraatz. I took further specimens of it last year at Pitlochry, Perthshire. It could hardly be mistaken for any other member of the genus, and can only be compared to *Epipeda plana*, Gyll.—ID.

*Oxytelus sauleyi*, *Pand.*, near *Portsmouth*.—I took five examples of this insect in a mole's nest close to Widley, Hants., on March 7th. I have worked many nests this winter about Torquay, Weymouth, and Portsmouth, but the above-mentioned specimens are the only ones I have taken, so it would appear to be a rare, or at all events a local insect.—M. CAMERON, H.M.S. "Attentive," Home Fleet: *April 7th*, 1911.

*Symbiotes latus*, *Redt.*, and *Plegaderus dissectus*, *Er.*, near *Oxford*.—At the end of January I found two specimens of *Symbiotes latus* in a piece of hard fungus brought home by me from the hollow interior of an elm stump near Wood Eaton, Oxon, and laid aside on a shelf in my study for several days. Subsequent visits to the stump have produced a fair series of this interesting little beetle, for the most part in chinks of rather dry wood permeated with fungoid growth. On April 13th I was greatly pleased to turn out of a wet rotten place in the hollow a specimen of *Plegaderus dissectus*; a very unexpected capture here, the more so as the species has not to my knowledge been recorded as occurring in elm. In the New Forest I have taken *Plegaderus* not uncommonly at times, but without exception in much decayed beech timber. Other Coleopterous tenants of the stump include *Abræus globosus*, *Mycetæva hirta*, and *Cis nitidus*, all in numbers, and one *Niptus crenatus*, which latter species is not uncommon in the manger of a cowhouse not very far away.—JAMES J. WALKER, Oxford: *April 18th*, 1911.

*Note on the larva of Halonota turbidana*, *Tr.*—The larva of this species appears to be unknown, or, if known, there is no published description of it up to the present time. Barrett (*Lep. Brit. Is.*, vol. xi, p. 48) says, "Larva undescribed. It is believed to live through the winter, and till May, in the stems and roots of *Petasites vulgaris*, butter-bur." Meyrick (in his *Handbook Brit. Lep.*, p. 496) states "Larva probably in roots of *Petasites*." Naturally, as the moth is always found attached to this plant, it has been surmised that the larva must feed on the roots of the butter-bur. To settle the point if possible, I invited my friend Mr. James W. Corder, of Sunderland, to join me in a visit to Greatham, where I had previously taken the moth, to search for the larva. We journeyed to the ground on the morning of March 25th (a bitter cold day, with occasional showers of hail), and after about three hours' hard work succeeded

in finding about a dozen each of what there can be little doubt is this long undescribed larva. They were found by digging up the crown of the plant, when short tunnels two or three inches long were visible, either twisting about the crown or descending into the fleshy roots; these tunnels were more or less filled with fine wet frass, and mixed with this, so as to be rather hard to make out, was a flimsy light-coloured cocoon fitting tightly to the larva, which was indistinctly visible through it. It seems probable that the eggs are laid in early July at the base of the leaves, and that the young larvæ burrow their way down into the roots, becoming full fed in the autumn or early winter, hibernating in the cocoon as a larva, as none that we observed appeared to be feeding. I sent about half the larvæ that I got to Dr. Chapman, hoping that he would give a detailed description; unfortunately he is on the Continent, so that this will have to wait until later; meanwhile Mr. Corder took a rough description as follows, though it must be remembered that owing to the larvæ having probably been spun up for some time, the colours will not be as bright as when feeding. "Length about  $\frac{3}{4}$  inch, broadest in front, segments of body tapering somewhat towards anal extremity; head smaller than 2nd segment, pale brown, mouth parts darker; body pale whitish beneath and in interstices of segments on back, otherwise the dorsal surface is of a yellowish-red; a few fine scattered hairs visible (but difficult to make out with a pocket lens), plate on second segment pale yellow; legs and claspers concolorous with under-side; spiracles showing as minute brown dots."

We shall now have to wait until the emergence of the imago for absolute proof of its identity; there is no doubt in our minds, however, but that it can only be this species.—J. GARDNER, Laurel Lodge, Hartby, West Hartlepool: *April 17th, 1911.*

*On the hibernation of Scotosia dubitata, Linn.*—A very interesting note on a hibernating habit of *Scotosia dubitata*, by Mr. J. W. Carter, of Bradford, appears in the current number of the "Naturalist." Mr. Carter records that Mr. Cuthbert Hastings (well known in West Yorkshire as a cave explorer), has several times met with this insect in caves, but on January 22nd last, in a cave in Wharfedale, he found it in exceptionally large numbers, no fewer than 150 to 200 specimens being observed at rest on the roof and sides of the cave. About a dozen of them were secured and taken to Mr. Carter, who reports that about a third of them were males, and the remainder females, the latter especially being still in excellent condition. The fact of males being among them confirms Dr. T. A. Chapman's experience that the species pairs in the spring, as against the statement of the late Edward Newman (*Natural History of British Moths*) that the females hibernate and deposit their eggs in the spring, the males being destroyed by the early frost. Mr. Carter's note is accompanied by two illustrations of the insects *in situ*, from photographs taken by flashlight by Mr. Hastings.—G. T. PORRITT, Huddersfield: *April 6th, 1911.*

*Rhaphidia cognata, Ramb., in West Suffolk*—In recording the capture of a *Rhaphidia cognata* in Foxley Wood, Norfolk, by Mr. H. J. Thouless, the late Mr. McLachlan (*Ent. Mo. Mag.*, xxxvi, 1900, p. 263) mentioned that although



the species figured in the Stephensian and other contemporary collections, down to that time he had not seen a native specimen which was not sixty years old or more. Recently I determined a specimen, without exact data, also "from old collections," sent to me by Mr. Hugh Scott, of the University Museum of Zoology, Cambridge. It accordingly gave me pleasure to find amongst a number of miscellaneous *Neuroptera* sent by Lt.-Col. C. G. Nurse, a fine pair of this desirable species taken by him at West Stow ( $\sigma$ , 7.vi.09) and Ampton ( $\varphi$ , 5.vi.09), both in West Suffolk. Not the least satisfactory feature is to be found in the fact that the two specimens are from quite distinct localities, about three miles apart. East Anglia is apparently favoured by *R. cognata*; but one cannot help thinking that it must be passed over sometimes in other districts for the more frequent *R. xanthostigma*.—KENNETH J. MORTON, 13, Blackford Road, Edinburgh: *March 18th*, 1911.

*A further note on Xenopsylla cheopis, Rothsch.*—Since the publication of my last note on the occurrence of the Indian Plague Flea, *Xenopsylla cheopis*, in London (*ante* p. 68), I have received a communication from Dr. S. E. Boycott of Guy's Hospital, which he has most kindly allowed me to publish. The results of Dr. Boycott's investigations can be best gauged by the statements heretofore appended, which he has kindly sent me, showing the fleas that he has caught on rats (*Mus norvegicus*) in Guy's Hospital. Dr. Boycott adds that the last five rats he captured all belong in his opinion to one family which lives under his laboratory, and it may be significant that there are steam pipes there which keep it quite warm. In Guy's Hospital therefore, if nowhere else in the British Islands, there is a flourishing colony of *Xenopsylla cheopis*.

February 1st, 1911.....	1 big rat.....	No fleas.
February 3rd, 1911 .....	6 young rats ...	18 <i>Ceratophyllus fasciatus</i> .
		† 1 <i>Xenopsylla cheopis</i> .
February 6th, 1911 .....	1 young rat ...	9 <i>Ceratophyllus fasciatus</i> .
		† 1 <i>Xenopsylla cheopis</i> .
February 14th, 1911 .....	1 big rat.....	2 <i>Ceratophyllus fasciatus</i> .
March 10th, 1911 .....	1 big rat.....	No fleas.
March 17th, 1911 .....	1 young rat ...	30 <i>Xenopsylla cheopis</i> .
March 21st, 1911 .....	2 young rats ...	75 <i>Xenopsylla cheopis</i> .
March 22nd, 1911 .....	1 young rat ...	3 <i>Ceratophyllus fasciatus</i> .
		49 <i>Xenopsylla cheopis</i> .

† These two examples have been recorded already (*ante*, p. 68), where the date on which the second example was secured was given *erroneously* as the 7th of February.—N. C. ROTHSCHILD, Arundel House, Kensington Palace Gardens, W.: *March 24th*, 1911

## Obituaries.

*P. C. T. Snellen, Hon. F.E.S.*—We regret to announce the decease at Rotterdam, of the Senior Member of the small but distinguished band of Honorary Fellows of the Entomological Society of London, P. C. T. Snellen having received that distinction as long ago as 1885. His name is best known to Entomologists through his masterly treatise on the *Lepidoptera* of the Low Countries (*De Vlinders van Nederland*) of which the first volume, treating of the *Macro-Lepidoptera*, was published at The Hague in 1867, while the second volume, on the *Micro-Lepidoptera*, appeared at Leyden in 1882. More recently he has collaborated with M. C. Piepers on a very important work on the *Rhopalocera* of Java. His death leaves a gap, not easily to be filled, in the ranks of philosophical Entomologists.

*Canon C. T. Cruttwell*, Rector of Ewelme, Oxon, and Canon Residentiary of Peterborough Cathedral, died on Tuesday, April 4th, at Ewelme, aged 63. He was formerly a Fellow and Tutor of Merton College, Oxford; in 1878 he was appointed Head Master of Bradfield, and in 1880 Head Master of Malvern. While at Malvern he married the daughter of Sir Robert Mowbray, Bart., the Father of the House of Commons. In 1891 he accepted the College Living of Kibworth-Beauchamp, Leicestershire, in succession to Dr. Knox, now Bishop of Manchester. Here he was made Rural Dean, Honorary Canon of Peterborough, and Proctor in Convocation. In 1901 the Marquis of Salisbury nominated him to the Crown Living of Ewelme, and in 1903 he was given a residentiary Canonry at Peterborough, which, being of small annual value, he was able to hold with his benefice. Two years ago he was invited to join the party of Bishops, Clergy and others who visited Germany in the cause of international peace. He was one of our foremost classical scholars, and published several valuable clerical and historical works. Entomology was his favourite hobby, and he collected both *Macro-* and *Micro-Lepidoptera* and *Coleoptera*; in the latter group he was fortunate enough to find a specimen of the very rare *Amara alpina* on the top of one of the Scotch mountains two or three years ago. He was an extremely keen collector, although he had not the time to set and arrange his specimens as he would have wished. His friend and colleague at Merton College, the late Bishop Creighton of London, looked with disfavour on his Natural History pursuit (fearing, apparently, that they might draw him off from his other studies), and tried to dissuade him from going on with them, but, as he said, in relating the incident to the writer of this notice, the love of Natural History was bred in him, and he told the Bishop that he could not give it up.

Canon Cruttwell never put himself forward in any way, but he had a large circle of friends, by whom he was much beloved, and he will be very much missed by all who knew him intimately; had he been at liberty to apply himself more fully to the want of his hobby, he would undoubtedly have been one of our foremost Entomologists.—W. W. F.

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## Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meeting held February 20th, 1911, at the Royal Institution, Colquhoun Street, Liverpool. Mr. GEO. ARNOLD, M.Sc., F.E.S., Vice-President in the Chair.

The Vice-President delivered a lecture, "Ants," in which he dealt chiefly with the recent discoveries connected with the habits of the subterranean fungus-eating species and the curious procedure of the females when founding a new colony. The ants which infest trees, constructing their nests in hollow parts of the branches, were also specially dealt with, and the economic effect of their presence described. The lecture was illustrated by a large number of specimens and also by means of drawings on the blackboard.—H. R. SWEETING and W.M. MANSBRIDGE, *Hon. Secretaries*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, February 23rd, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. J. H. Leslie, F.E.S., of Tooting, was elected a Member.

Mr. Turner exhibited three Noctuids sent to him by Mr. Murray, of St. Anne's-on-Sea; two of the specimens were very dark melanic forms of *Agrotis* superficially very similar, but which, on close examination, he considered to belong to two species, *Agrotis tritici* of the *v. nigra* form, and *A. nigricans* of the *v. fumosa*, Fab. (*nec* Godt.). The third specimen was a worn *Luperina*, possibly referable to *L. cespitis*, the small, grey, rough-surfaced form sometimes met with on the coasts of Lancashire and Sussex. Mr. Moore, the very beautiful leaf-moth of India, *Gloriana (Phyllodes) ornata*. Mr. Newman (1), sticks, both living and dead, of sawfly containing larvæ of *Trochilium bembeciforme*, and also some containing the similarly feeding larvæ of the musk-beetle *Aromia moschata*; (2), a living specimen of *Sesia culiciformis*, bred after sixteen days forcing; and (3), full-fed larvæ of *Arctia caia* and *Callimorpha dominula*, which had been forced on, and stated that some of the former had made no response to the treatment. Mr. Kaye, a varied series of *Spilosoma lubricipeda* and its var. *zatima*, and asked if it had been obtained by any one recently. Mr. Adkin, melanic examples of *A. nigricans* to compare with Mr. Murray's specimens. Mr. Tonge showed a series of lantern slides, each illustrating the complete life-history of a British butterfly. Mr. Edwards, a set of slides illustrating the anatomy of a Lepidopteron. Mr. Main, slides sent by Mr. Hancock, of Birmingham, illustrating the structure, habits, and snares of spiders.

Thursday, March 9th, 1911.—The President in the Chair.

Mr. A. E. Gibbs exhibited a collection of *Lepidoptera* from the Cuna Cuna Pass, Blue Mountains, Jamaica, including the rare *Papilio homerus*, and fine local forms of *Aganisthos odius*, *Gynæcia dives*, *Hymenitis diaphanus*, *Calisto zangis*, *Adelpha abyla*, &c. Mr. Newman, a new kind of larva-cage, introduced

by him after many months' experience. These were of waxed cardboard, and he stated that the food-plant kept well in them. Mr. Adkin, a form of *Nola albitalis*, in which the dark brown band was reduced to a dark narrow stripe only, giving a much more delicate appearance to the insect. Mr. W. J. Kaye, several Syntomid species of the genus *Pseudosphex*, and the wasp models which they so closely mimicked, in build, shape of antennæ, legs, colour, &c. Mr. Sheldon, the two specimens of a Noctuid, about which much discussion as to their identity arose many years ago, and which were named *Agrotis helvetina*. They are now regarded as pale putty-coloured examples of *Graphiphora augur*. Mr. Blenkarn, a pale xanthic form of *Epinephele tithonus*, from the Isle of Wight, and a fine dark clouded example of *Camptogramma bilineata* from the same locality.—HY. J. TURNER, *Hon. Secretary*.

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ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, March 1st, 1911.*—  
MR. G. T. BETHUNE-BAKER in the Chair.

Messrs. Lionel Armstrong, Government Entomologist to the Gold Coast, Gold Coast, West Africa; J. Platt Barrett, 30, Endwell Road, New Cross, S.E.; Rev. Henry William Brutzer, B.A., Great Bowden Vicarage, Market Harborough; Messrs. P. P. Graves, Club de Constantinople, Constantinople; Thien Cheng Kung, Guardian Superintendent of Chinese Students in British India, c/o The Curator, Mysore Government Museum, Bangalore, India; Rev. A. Miles Moss, Helm, Windermere; and Dr. Cuthbert F. Selous, M.D., M.R.C.S., L.R.C.P., Agra, Barton-on-Sea, New Milton, Hants, were elected Fellows of the Society.

Dr. Nicholson showed six specimens of *Cholera fuliginosa*, Er., an addition to the list of British beetles, from Alpbington, Devon. This species closely resembles *C. nigrita*, Er., with which it is mixed in several collections, and it is probably widely distributed in this country. Mr. Dollman has taken it at Harrow, Mr. Donisthorpe at Hartlepool, Mr. Taylor in the Isle of Wight, and it is also in the F. Bates Collection. Mr. L. W. Newman exhibited some sticks (the off-shoots of birch stumps) containing larvæ of *Sesia culiciformis*; also sticks of *Salix caprea* containing larvæ of *S. bembeciformis*, one of these showing the cap formed over the hole prepared for emergence. This species is not usually supposed to form a cap. The larvæ were not, as is generally thought, confined to living wood, some of those exhibited being in dead twigs. Also a living specimen of *S. culiciformis*, a species which the exhibitor remarked was easily forced. Mr. G. T. Bethune-Baker, a specimen of *Erebia ceto* which had been swept from the herbage without its head, which was probably held fast by a spider; nine hours after capture this insect had still been capable of fluttering strongly. He also exhibited a specimen of *Erebia ligea* v. *adyte*, with a half-developed right hind-wing; a specimen of *E. eriphyle* with no left hind-wing, and a *Melitæa varia* with no right hind-wing; in the two latter there was no trace of the wing having ever been developed. Mr. A. Bacot communicated a note confirming the Hon. N. C. Rothschild's distinction between *Ctenocephalus canis* and *C. felis*, both of which he had bred from the egg. He gave measurements showing the difference in size and shape between the ova of the

two species, comparing them also with those of *C. fasciatus* and *Pulex irritans*. He also read a paper entitled, "On the Persistence of Bacilli in the Gut of an Insect during Metamorphosis," commenting on which Dr. Chapman observed that in moulting (referring chiefly to *Lepidoptera*) provision for increase of size is not the only object in view, but also the removal of various possible microbial enemies. In "laying up" for a moult, a larva almost invariably first empties the alimentary canal; at the actual moult, not only the skin, but the lining membranes of the tracheæ and of much of the alimentary canal are cast also. The threads drawn from the mouth and anus, consisting of the linings of the *primæ viæ*, often seem long enough to represent the whole tube; if this be so, then bacillary inhabitants would be got rid of, and in any case must be so to a great extent. It would be interesting to know what is the precise hiatus between the oral and anal portions, and what provision there is for establishing an aseptic condition of this portion of the tube. Messrs. Ernest A. Elliott and Claude Morley communicated "A first supplementary paper on the Hymenopterous Parasites of *Coleoptera*." The Secretary read to the Society a letter of condolence received by Dr. Chapman from M. Charles Oberthür, one of the Honorary Fellows, containing an appreciation of the late Mr. J. W. Tutt.

Wednesday, March 15th, 1911.—REV. GEORGE WHEELER, Secretary, in the Chair.

#### SPECIAL MEETING.

The letter summoning the Special Meeting was read by the Chairman, and, no other candidate having been proposed, the Rev. F. D. Morice, M.A., was declared to have been elected President for the current year.

The Ordinary Meeting followed immediately. The Rev. F. D. MORICE, President, in the Chair.

The President, on taking the Chair, addressed a few words to the Society, thanking them for their choice of him for the post, and expressing regret for the circumstances which had made an election necessary.

Messrs. George Moffatt Carson, Entomologist to the Government of New Guinea, Port Moresby, New Guinea; Alfred George Scorer, Hill Crest, Chilworth, Guildford; Percy William Affleck Scott, Chinese Imperial Customs Service, Hangchow, China; Noel Stanton Sennett, 32, Bolton Gardens, South Kensington, S.W.; James A. Simes, 2, The Byre, Whitehall Road, Woodford, Essex; P. H. Tautz, Cranleigh, Nower Hill, Pinner, Middlesex; R. G. Todd, The Limes, Hadley Green, N.; R. Vitalis, Commis de 1<sup>re</sup> classe, Trésor, Pnom-Peng, Cambodia, French Indo-China; and Rev. W. G. Wittingham, Knighton Rectory, Leicester, were elected Fellows of the Society.

The President announced that he had appointed Dr. F. A. Dixey, M.A., M.D., F.R.S., and Messrs. G. T. Bethune-Baker, F.L.S., F.Z.S., and H. St. J. Donisthorpe, F.Z.S., to act as Vice-Presidents for the current year.

Mr. H. Donisthorpe exhibited a nest of *Lasius umbratus*, Nyl., which had accepted a ♀ *L. fuliginosus*. On December 13th a deilated ♂ *L. fuliginosus* was put into a small plaster nest with a dozen of the *umbratus* ♂♂; she was

slightly attacked, but not in any way injured, and tried to conciliate the ♂ ♀ by stroking them with her antennæ; she protected her waist by crossing the back legs over it, and her neck by pressing the head back against the thorax. By December 21st she was accepted by the whole nest, and has been treated as their queen ever since. Only one or two ♂ ♀ occasionally threatened her with their jaws, though the first *fuliginosus* ♀ placed in the nest was killed. The ♂ ♀ killed most of their own virgin ♀ ♀. Mr. W. C. Crawley also exhibited a case containing a colony of *Lasius umbratus* with a *L. fuliginosus* ♀ as queen, and a colony of *L. niger* with a *L. umbratus* queen. He mentioned that deilated ♀ ♀ do not always behave as if fertilized, the ♀ in this nest being restless, as the winged ♀ ♀ are before the marriage flight. Dr. Chapman began a discussion as to whether this form of "parasitism" was in the long run profitable to the parasitised species, by weeding out the weaker nests; the President, Mr. Verrall, and Mr. G. A. K. Marshall also joined in the discussion. Mr. F. Merrifield exhibited 131 specimens of *Selenia bilunaria*, and read a short paper on the question whether temperature in the pupal stage may affect the size of the imago in form in the *Heterocera*. His experiments showed that in every case the imagines from the cooled pupæ are, on the average, larger than those from the forced, the difference ranging in the males from 1.3 to 20.8 per cent. (averaging 13.6 or 13.9), in the females from 0.7 to 9.5 per cent. (averaging 3.3 or 3.6). It seemed to him that the difference was too great and too diffused, embracing, as it does, each sex in five separate families, to be explained in any other way than this: that it is caused by something that, in consequence of the difference in temperature, happened to either those forced or those cooled, or both of them, in the pupal stage. Mr. H. Main, a stereoscopic photograph of the cocoon of *Chrysope flava*, opened to show the hibernating larva, and of the larva taken out of the cocoon to show how it lies coiled up with its tail over its head. Mr. O. E. Janson, larvæ and cases of a Psychid from Amboyna, the cases being beautifully constructed and closely covered on the exterior with small spines, intermixed with larger spines or thorns. The largest of the cases measured 9 ins. in length. Dr. Chapman read a paper on "The British and a few Continental Species of the Genus *Scoparia*," and showed photographs of the genitalia and a drawing to illustrate the neuriation.

The Secretary announced that the *Conversazione* was fixed for Wednesday, May 17th, and that the Linnean Society had kindly placed their Rooms at the disposal of the Society for that occasion, and were generously lending their lantern, making no charge for light or for the current for the lantern. He also announced that Professor Poulton and Mr. Enock had consented to give lectures on that occasion. As the arrangements with the Linnean Society preclude the sale of tickets, it will be necessary to ask for a subscription towards the expenses (for refreshments, printing, postage, &c.) from those who apply for them, and also strictly to limit the number for which each Fellow may apply. On the motion of Mr. Rowland-Brown, seconded by the Rev. G. Wheeler, a vote of thanks was unanimously passed to the President and Council of the Linnean Society for their kindness and generosity.—GEORGE WHEELER, *Hon. Secretary*.

## THREE WEEKS IN THE SUDAN.

FEBRUARY 1ST—22ND, 1909.

BY G. B. LONGSTAFF, M.A., M.D., F.R.C.P.

When one looks out of the train in the morning after the stifling night on the Nubian desert—somewhere between Berber and the River Atbara—a change in the appearance of the country is observed. A thin thorn-scrub, varied by occasional groups of Dom Palms, throws a slight veil over the nakedness of the desert. Occasionally a few gazelles create a flutter of excitement among the passengers, and when the sun gets up the mirage slowly develops, as if the horizon were first softened and then evaporated by the heat. From time to time stray butterflies are seen; these I took to be *Catopsilia florella*, F., though it is just possible that among them may have been *Teracolus protomedia*, Klug. During a short halt at Wad Ben Naga Station I tried to solve this problem, but the sense of anxious hurry lest the train should start, the swift flight of the butterflies, the strong wind, the blinding glare, and the great heat combined to frustrate my efforts, and I only succeeded in netting a male of *Tarucus theophrastus*, Fab., a “Blue” that I met with from Luxor to my southernmost point at Gebel Ein—a range of nearly 16° of latitude. On my return journey I took at Abu Hamed Station (about 130 miles north of the Atbara River) the Sphegid *Philanthus variegatus*, Spin., which was abundant at Khartûm, but which I did not see in Egypt. Also at Atbara Junction, 200 miles north of Khartûm, I took a male of *Rhyuchium niloticum*, Sauss., a red and black Eumenid wasp that I had met with at Khartûm.

## KHARTÛM.

Lat. 15° 35' N. 1200 ft. above sea level.

Khartûm is unlike any place that I have seen. Situated on the southern bank of the Blue Nile, just above its junction with the White Nile, it is a new city; it is, moreover, a European city, for the native population lives almost exclusively in mud villages on the outskirts. The palace in which Gordon lived and died is its oldest edifice, though built by Ismail Pasha, on either side of this, stretched along the river bank, is a long line of Government Offices and barracks interspersed with the comfortable houses of officials set each in its pleasant garden. Since every one, naturally enough, wished to have a bit of river frontage the length of the town is considerable, but its breadth approximates to Euclid's definition of a line, and its cross-streets starting from the river run vaguely into the desert.

Any description of Khartûm would be inadequate if it did not allude to the prevailing northerly wind, which is not only health giving, but entomologically speaking most important. Mr. H. L. Butler, the Curator of the Zoological Gardens, informed me that there is no continuous rainy season, but that heavy tropical downfalls are frequent in June, July, and August.

Khartûm is not altogether a pleasant place for collecting in. To the south is a specially barren\* and wind-swept desert; the northern bank of the river is abandoned to barracks, railway works and dock-yard—for Khartûm is a naval port with a fleet of gunboats—hence one's operations were practically confined to the neighbourhood of the river bank above and below the city. Of the two localities, the best, though the most distant, was beyond the water-works, near the terminus of the tramway in the village of Burri. Here, among *Calotropis procera*, Willd., the wide-ranging *Danaïda chrysippus*, L., was common, and I was delighted to see alive for the first time the form *alcippus*, Cram. The white hind-wings of these beautiful butterflies are conspicuous in flight, and at once reminded me of the yet more beautiful *Aeræa alboradiata*, Auriv., which I had seen in such numbers at the Victoria Falls four years before. From Cairo to Aswân I had come across a fair number of *chrysippus*, but all of the typical form. At Abu Simbel, in Nubia, I was surprised not to meet with it, since the *Calotropis* was there in plenty; it would be interesting to know what form occurs there.

The twenty-eight specimens brought home from Khartûm may be classified as follows:—

Typical *chrysippus*, L., 3 ♂.

*chrysippus*, L., but with the veins of the hind-wing dusted with white, 6 ♂, 2 ♀.

f. *alcippoides*, Moore, 4 ♂, 2 ♀.

f. *alcippus*, Cram., 5 ♂, 2 ♀.

f. *dorippus*, Klug, var. *albinus*, Lanzknecht, 1 ♂.

Of the total specimens seen, I estimated at the time that at least three-fourths were either *alcippus* or *alcippoides*.

The "musk-rat" odour was evident enough in many examples, about equally strong in both sexes, but in one ♂ the scent was compared to that of tobacco.

The next most conspicuous butterfly was *Papilio demodocus*, Esp., I believe the only one of the sub-family that occurs there. During

\* Actually barren: potentially it is said to be fertile, a thin coating of sand covering a deep deposit of silt.



my stay it was not at all common, and I took but two (one very large and fine) and saw one or two others.

The *Pierinæ* were unquestionably the dominant group. The first of them to attract attention was *Catopsilia florella*, F., of which I took 5 ♂ and 10 ♀; it was quite abundant along the river bank above Burri. One female was so unusually pale in colour as to resemble a male. Of the five males taken all had a "sweet" or "luscious" scent, in some "faint," in others "decided."

*Beleinois mesentina*, Cram., was also abundant, especially on cultivated ground; 10 ♂ and 19 ♀ were taken; some of the specimens of both sexes were very small. One ♀ resembled a ♂ in appearance. In some of the males I detected a slight scent, once described in my notes as "luscious," in others as "musky"; in two female specimens a slight musky scent seems to have been suspected. A male had lost a large piece out of each of the four wings.

In the bean fields near the junction of the Blue and White Niles *Colias marnoana*, Rogenh. (a miniature edition of our *C. hyale*), was common. In all fifteen were taken, including two white females. Two examples had symmetrical injuries affecting all four wings. A slight scent was noted in some specimens, described as "peculiar," "chocolate-like," or "clove-like." The observations were, however, not very definite, and in one case the scent was noted in a female specimen.

The prevalence of the genus *Teracolus* at Khartûm was in itself sufficient indication that we were within the limits of the Ethiopian fauna. None of the species were really common during my stay, but of *T. ephyia*, Klug, I secured four males and a female, missing several others; two of the males were veritable dwarfs. I also took a single dwarf male of *T. दौरα*, Klug. To the west of the town I took the only *T. chrysonome*, Klug, a ♀, that fell in my way. Lastly, I caught near the tennis-ground a female of *T. protomedia*, Klug, which seemed to me to have a faint scent like opium. At Burri I secured a specimen of the very beautiful *Callopiëris eulinine*, Klug.

I did not come across a single Satyrid or Skipper in the Sudan! There was but one Nymphaline—the ubiquitous *Pyrameis cardui*, L., which was met with in the largest numbers on an exposed piece of ground at the very point of junction of the two rivers, exactly where one would have expected to see it. A fresh brood made its appearance on February 7th; one of these, a male, had an unusual under-side, very grey in tone, with but little dark shading, and without any black

in the ocelli. Even slight variations are rare in this remarkably constant species.

"Blues" were fairly numerous though of few species; *Polyommatus beticus*, L., and *Tarucus theophrastus*, F., were both abundant, the first especially in bean fields, the second about *Acacia* bushes, or at flowers of *Ærra*. I fancied that a male of the first named butterfly had a slight scent like meadow-sweet, while one of the latter had a moderately strong, sweet, luscious odour. Of *Azanus ubaldus*, Cram., I took half-a-dozen, having previously come across a female in Nubia at Amâda (Lat. 20° 45' N.). Of the little *Chilades trochilus*, Frey (a species also met with at Aswân), I took one only.

*Zizera lysimon*, Hüb., was commonest on weeds in fields from which a crop had been removed, especially frequenting *Ærra* and *Arnebia*. On the other hand *Catochrysops eleusis*, Dem., was common about small, low-growing, white-prickled *Acacia* bushes on the edge of the desert. The Khartûm males were markedly bluer, less violet, than the Aswân specimens, which latter were chiefly taken about a pink-flowered *Lotus*.

Moths were not very numerous, but many of those taken were interesting.

The almost cosmopolitan *Utetheisa pulchella*, L., was fairly common on both sides of the town. The little Pyrale, *Noctuella floralis*, Hübn. (which is like an "improved" *Herbula cespitalis*, Schiff.), occurred at the flowers of *Arnebia* sp., and the handsome *Deilephila livornica*, Esp., was taken at about 11 a.m. one hot sunny morning hovering at the flowers of *Echium* sp., both Hawkmoth and flower being in this case quite Palæartic. All my other moths were victims of the seductive attractions of the electric lights. On some evenings, when the north wind was not too strong, these were much frequented, and while boxing moths on such occasions crowds of small flies entangled themselves in my scanty hair in a most irritating way. Amongst the moths *D. livornica*, Esp., turned up again, with it was a singular pale grey Syntomid, *Apisa canescens*, Walk.; also several Geometrids, including *Craspedia consentanea*, Walk. [which I also took at Dakkeh, 23° 15' N., and even as far north as Luxor, 25° 50' N.]; a very worn *Tephрина*, probably *disputaria*, Gn., var.; four specimens of *Peridela sudanata*, Warr. and Roth.;\* also an "Emerald" which Mr. L. B. Prout says is a new *Chlorochroma*, as so often happens a

\* *Nor. Zool.*, vol. xii, 1905, p. 28, fig. 26.

unique example. There was in addition a male specimen of a Lymantriad which Sir George Hampson has described\* as *Porthesia erythrosticta*, sp. n., and which he says resembles *Euproctis rufopunctata*, Walk. The *Noctuw* were more remarkable than numerous; several specimens of *Caradrina (Laphygma) exigua*, Hübn., the larva of which feeding on cotton, berseem (a kind of clover), and *Hibiscus*, is quite a plague to the farmers of modern Egypt; a female of *Eucoa spinifera*, Hübn., another common Egyptian moth; four specimens of *Sesamia [Nouagria] cretica*, Lel.; one of *S. apunctifera*, Hmps., the latter very distinctly marked, more so than any in the National Collection. Another cotton pest of Egypt, *Prodenia litura*, F. (*littoralis*, Bsd.) was represented by a single example. One of the most unexpected visitors was *Copieucullia sublutea*, Graes.; the type of this species came from Eastern Turkestan, and the British Museum possesses but a single example, and that from the desert of Gobi in Northern China, no less than 30° N. and 70° E. of Khartûm! Sir George Hampson thinks that desert insects probably have an unusually large range, since desert conditions are similar over very large areas. Of *Spodoptera mauritia*, Bsd., two specimens turned up; of the common and very active Quadrifid *Acantholipes affinis*, Butl., only one. Of a Catocaline which is probably a new species of *Hypoglaucitis*, I took two, and Mrs. Longstaff another; a fourth specimen came to the lights of the steamer at Kasr Ibrim, in Nubia (Lat. 22°35' N.) on January 29th. As might have been expected there were plenty of Pyrales among the frequenters of the lamps: two Galleriads, one the dingy *Lamoria imbella*, Walk., four specimens; this is a widely distributed African species, ranging from Natal to the Nyanza; the other *Arenipses sabella*, Hmps., a species found in Arabia and on the Persian Gulf, of which I also got four. Other Pyrales were the almost cosmopolitan *Hellula hydralis*, Gn., one; *Noctuelia floralis*, Hübn., two; *Polyocha aeverastiodes*, Warr. and Roth., one; the ubiquitous *Nomophila noctuella*, Schiff., three; *Noorda blitealis*, Walk., in abundance, a species that ranges from Ceylon over India to Aden; *Eromene ocella*, Haw., two, small and pale when compared with the large numbers seen in Egypt; and *Etiella*, n. sp., still in Sir George Hampson's hands. Also a Tortrix which Lord Walsingham says is the cosmopolitan *Bactra lanceolana*, Hübn.

For the determinations of the *Hymenoptera* met with I am

\* *Annals and Magazine of Nat. Hist.*, ser. 8, vol. v, May, 1910, p. 435.

greatly indebted to my old friend the Rev. F. D. Morice, who spent much time over them.

Ants did not make themselves very obvious. On the battlefield of Kerreri, during an extremely hurried visit, I managed to secure a worker of *Campouotus sericeus*, F. In the hotel at Khartûm my first capture was a worker of *C. sylvaticus*, Oliv., var. *maculatus*, F. In the Zoological Gardens close by I took on the trunk of a *Parkinsonia* three worker ants of which Mr. Morice writes: "This *Campouotus* is unknown to me, unless it be a form of *pubescens*, F.; the pilosity is very curious." I did not meet with either of these three ants in Egypt. In the western suburbs, toward Mogran, I found a worker of *Myrmecocystus riaticus*, Fab., running rapidly over the ground; in the same neighbourhood, under a stone, I found an ant of which Mr. Morice writes: "Genus? Species? Seems to belong to the *Poneridæ*, but I know nothing like it. With the general appearance of a Formicid, it has a long and powerful sting!"

*Prenolepis longicornis*, Latr., hunted on the luncheon table; while *Aphaenogaster barbara*, L., was common in the garden; a male of the red and black Mutillid *Apterogyua savignyi*, Klug, was also taken in the hotel,

Of the difficult genus *Myzine* I met with three species on the Mogran hunting ground. The commonest appears to be *fasciculata*, which the late Mr. Ed. Saunders described from Biskra, of this I took seven specimens, all males; of *roussellii*, Guér. (also a Biskra insect), I took four males; lastly, there were two males which Mr. Morice thinks may be either *ægyptiaca*, Guér., or *guerini*, Lucas (= *latifasciata*, Palm.); perhaps it is the insect represented in fig. 27 of Savigny's Plate xv.

On the river bank to the east of the town, beyond the water works, I took a male of *Scolia erythrocephala*, Fab., a handsome insect, black with yellow-ringed abdomen, and purple-tipped wings, with base and costa ferruginous. On the other side of the town I took a female *Scolia* very similar, but with no ferruginous markings on the wings, which Mr. Morice thinks may be a variety, but possibly a new species. In the same locality as the last I got a small female *Scolia*, a greyish insect with a yellow abdomen, which Mr. Morice says is quite unlike any species known to him. Of *Elis senilis*, Fab., I brought home five males, varying greatly in size, some were taken on *Tacoma stans*, others on *Calotropis* near the rifle ranges.

The *Sphegidæ* were numerously represented. The only *Ammophila* that I met with at Khartûm was a solitary female of *gracillima*,

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It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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No. 1 ♂.



No. 1 ♀.



*B. PELLUCIDUS*, Boh.

No. 2 ♂.



No. 2 ♀.



No. 2 ♀.



*B. DUPLICATUS*, n. sp.

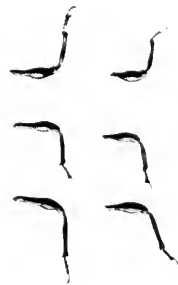
The two females are depicted to show the variability in the rounding of the shoulders of elytra. Both species are more or less inconstant in this respect.

No. 1. No. 2.



Legs of males.

No. 1. No. 2.



Legs of females.

*BARYPITHES PELLUCIDUS*, Boh., and *B. DUPLICATUS*, n. sp.

Tasch. Of the handsome black, yellow-legged, long-waisted *Sceliphron spirifer*, L., I took two examples, one at Khartûm, the other in the train at Mut Mir Station on the Sudan Railway; it also occurred at Luxor; my specimens are all females. *Philanthus courcatus*, Spin., and *variegatus*, Spin., were both abundant towards Mogran, males greatly predominating. Other abundant small Sphegids were *Cerceris albicincta*, Klug, 28 ♂, 2 ♀, and *C. subimpressa*, Schlett., 24 ♂, 2 ♀; *C. annexa*, Kohl, was not so common, only 4 ♂ and 1 ♀ being taken. The great majority of these small Sphegids (as well as of Chrysidids and Flies), were obtained by sweeping the white fluffy Amarantaceous plant *Ærva* ? *jaranica*, Juss., but a few were obtained from the Boragineous *Arnebia* sp. The large bees and wasps on the other hand frequented *Tacoma stans*, *Acacia* and *Parkinsonia*, though a few occurred at *Calotropis*.

Of *Bembex lusca*, Spin., I secured one of each sex, of *B. mediterranea*, Handl., three males, one was taken on *Ærva*, one near Burri, where so far as I know that plant did not grow. Of the fine large *Sphex umbrosus*, Chrst, a black-bodied insect with clear wings, save at the base, a specimen (♂) was taken to the west of the town. In the same locality, on a small umbellate weed, I took a male *Tachytes*, a striking insect with a testaceous abdomen and dark borders to the wings. Mr. Morice thinks this may be the male of *superbiens*, Morice, the description of which will shortly appear in the Transactions of the Entomological Society; he compares it with *monetaria*, Smith, from India.

The difficult genus *Pompilus* was represented by ten males of a species of the *Aporus* group.

No social wasps were met with; on the other hand the genus *Eumenes* was much to the fore, by far the commonest species being the Egyptian blue-black *E. tinctor*, Chrst, of which I took ten males and four females; of *E. dimidiatipennis*, Sauss., and *E. lepelletieri*, Sauss., I took one male each; of *E. esuriens*, L., a truly hungry-looking, long-waisted, yellow, brown and black beast, I took one of each sex. Of the large black purple-winged *Rhynchium* ? *synagrioides*, Sauss., with its orange-tipped tail, I took two of each sex; it frequented the flowers of *Tacoma*. Of *R. cyanopterum*, Sauss., I found a solitary male at *Acacia* flowers. Of *R. niloticum*, Sauss., I took two males at Khartûm, another at Atbara junction 200 miles to the northward. A female *Odynerus* (*Lionotus*) belonging to the *parvulus* group may possibly prove to be a new species.

The handsome and conspicuous Carpenter-bees were as common

in the Sulan as in Egypt, but in addition to the strikingly dimorphic *Xylocopa vestians*, Linn., with its very different males and females, five males of *Xylocopa taschenbergi*, Vachal, turned up at Khartûm.

Of the leaf-cutters several species were met with. Two *Megachile flavipes*, Spin., were taken in the western suburbs, also at *Calotropis*, near the rifle ranges; this is a small species which I afterwards found quite commonly in Egypt; but *M. albocincta*, Rad., also an Egyptian species, was the commoner at Khartûm, frequenting the flowers of *Calotropis* and *Tucoma*, it is not, however, by any means easy to catch, still I secured three males and five females; of *M. argentata*, Fab., I took two males and a female, it also frequented *Tucoma*; at *Calotropis* and other flowers I took three specimens of *M. ? patellimana*, Spin. ? n. sp.

There were but two species of *Anthidium* among my captures, viz., *tessellatum*, Klug, of which I took two females; and ? *karschi*, Friese, of which I took a male, at least a bee which Mr. Morice says is probably the undescribed male of that species. I also got several specimens of both sexes of an *Anthophora* which Mr. Morice says is near *bimaculata*, Panz., and possibly = *byssina*, Klug, but that there perhaps may be more than one species among them. Three males of *Ceratina tarsata*, Morawitz, turned up at Khartûm.

At Abu Hamed (Lat. 19° 30' N.), 331 m. north of Khartûm, I took in the station-master's garden two females of *Nomia latipes*, Morawitz. At Khartûm I secured a male of *N. edentato*, Morawitz, and four females of the tiny yellow and black *Nomioides rotundiceps*, Handl.

Among those gem-like creatures, the *Chrysididae*, I was successful in getting some interesting insects, although I did not find them numerous. The brilliant, but widely distributed *Stilbum splendidum*, F., was the commonest, and I brought home twelve, some of them of the var. *amethystinum*, F. In the garden of the Cataract Hotel at Arwân (Upper Egypt), on January 26th, 1909, at about 5.30 in the afternoon, Miss Stracey called my attention to a number of *Stilbum splendidum* upon a *Parkinsonia* (an Australian tree with yellow flowers); they formed two clusters, one on a branch, the other on pods, consisting of 14 and 34 individuals respectively; they were sitting close together, quite still, and appeared to be stupid. Mr. Morice was much interested in my account of this observation, which he is not able to account for, and cannot exactly match by any other recorded case among the *Hymenoptera*. I mentioned the matter to Mr. F. C. Willcocks, F.E.S., of Cairo, but he said that he had never noticed anything

of the kind. Mr. Morice informs me that *Stilbum* infests the larvæ of the larger species of *Eumenes* (especially *dimidiatipennis*) exactly as Ichneumons do those of *Lepidoptera*.

*Chrysis nasuta*, Moesary, is so similar to *Stilbum* in size and general appearance that I doubtless confused the two, and brought home but one male and three females; this is unfortunate, since it appears that Moesary in 1902 described the male only, from Salisbury, Rhodesia; he has seen my specimens and believes them to be the two sexes of *nasuta*. *Chrysis pallidicornis*, Spin., was the commonest of the genus, and I secured seven specimens. It is variable in the colour of its tail, which may be red, reddish, or green (var. *chloris*, Moes.). Of *C. fasciata*, Klug, I took two; of the rainbow-coloured *E. aurifascia*, Brullé, one; the last named is, I am informed, a rarity, but it extends as far as the Cape. Of the common Egyptian *Hedychridium aheneum*, Dhlb., I took but one. The genus *Parnopes* was represented by a male and two females of what both Mr. Morice and M. du Buysson are agreed is a new species. Nearly all these Chrysidæ, but not the *Stilbum*, were obtained by sweeping *Ærva* ? *javanica*, Juss.

Insects of other Orders were few in number, thus but a single species of bug was met with, *Lygæus militaris*, F., taken among *Calotropis*; it appears a very bright red on the wing. Mr. Distant tells me that it is a common species.

A servant at the hotel brought me a large Mantid in spirit, *Hierodula bioculata*, Burm., she said that it had come to light at the beginning of February. Of the common North African locust, *Acrydium ægyptiacum*, L., I took one. A specimen of *Phaneroptera minima*, Br., came to light. A number of large earwigs, *Labidura riparia*, Pall., were found under a stone near the junction of the two rivers at Mogran; I had met with the same species near the Great Pyramid.

It is to be feared that little attention was paid to flies, and those that I brought home were not remarkable. Of *Agria* (*Sarcophaga*) *nuba*, Wied., a species also met with in Egypt, I took a pair. Among *Calotropis*, on the desert near the rifle ranges, I took two males and a female of *Dacus longistylus*, Wied., a wasp-like fly which Becker, in his work on Egyptian *Diptera*, attaches to the same plant. The brilliantly coloured blue-bottle, *Pycnosoma marginale*, Wied., was also common on *Calotropis*, but I suspect that a dead camel close by was even more attractive to it. A solitary *Anthrax* has not yet been provided with a name. Two specimens of *Rhinia* (*Idia*) *ænea*, Walk., complete a somewhat commonplace list.

(To be continued).

*BARYPITHES DUPLICATUS*, N. SP.,  
AND NOTES ON OTHER BRITISH MEMBERS OF THE GENUS.

BY J. H. KEYS, F.E.S.

PLATE II.

Whilst examining my series of *Barypithes pellucidus*, Boh., a short time ago, I noticed that it comprised two distinct forms. Being unable to ascribe either of them to any other species, I referred the matter to my friend, Mr. E. A. Newbery, who concurred with the opinion that the two forms were distinct, but had been confused in the extant descriptions. He then communicated the facts to Captain Sainte-Claire Deville, who it appeared was well aware that two forms of *pellucidus* were mixed in collections, and who had proposed to deal with the question when a convenient opportunity arrived. He further remarked, "From the materials you have sent me it results that the *Barypithes pellucidus* doubles itself in England absolutely in the same way as in France. . . . I have neither the time nor the desire to attend to these insects at present, and shall be very glad if Mr. Keys or yourself will describe the new species."

Mr. Newbery referred the matter back to me, and, thus impelled, I offer the following solution of the problem.

The question which it is necessary first of all to answer satisfactorily if possible is: to which of the insects must the name *pellucidus* be conserved? For convenience of reference, I propose to speak of the form which I consider to be the true *pellucidus*, Boh., as No. 1, and of the duplicate form as No. 2.

In general aspect the two insects differ from each other very much. No. 2 is conspicuously the smaller in size, averaging about 3 mm. in length; it also is a more dumpy looking insect, with legs distinctly stouter, and on that account seemingly shorter too. It is reddish-yellow brown in colour, and paler than No. 1. No. 1, on the contrary, varies in size from about 3 to 4 mm.; its legs are thinner, and accordingly look longer. In colour it is generally dark pitchy or almost black, although lighter individuals (immature, perhaps) occur, and are reddish-brown. The males of both forms are easily separable from each other, as well as from their respective females.

The females are not so readily distinguished, but the elytra of No. 1 are, as a rule, more truncate at the base, with the humeral angles consequently more distinct. In the large females of No. 1 the size and flat interstices of the elytra are also distinctive points. In the females of No. 2 the average smaller size, paler colour, and more distinct hairs must also be considered.

Notwithstanding the distinct facies of the two insects when compared side by side it does not seem to be very easy to discover definite characters for their identification when apart. On reading Boheman's description of *B. (Omius) pellucidus* (Schönherr's Gen. Curc., ii, p. 507) one is therefore not much surprised to find that the details are pretty general in character, and seem to apply with nearly equal value to either insect. There are, so far as I can discern, but two exceptions. The first of these is the flat interstices of the elytra ("interstitiis planis"). In the large (4 mm.) females of No. 1 these spaces are absolutely flat; they become rounded in the smaller females, and the rounding is obvious in the males. But this feature (the flat interstices) cannot be applied to No. 2 at all, at least it cannot in any of the examples which I have seen. It is therefore a character definitely indicating No. 1 as Boheman's insect. The other point is the length of the elytra, which Boheman gives as nearly thrice that of the thorax ("elytra . . . thorace fere triplo longiora"). But so great a length in *Barypithes* is surely a mistake of the author? However that may be, Boheman's words are evidently intended to convey the idea of considerably elongated elytra. Such a character is applicable to No. 1, and not to No. 2. Boheman does not say whether he is describing male or female.

Seidlitz (Die Otiobrychiden, p. 68) treats of both sexes of *B. pellucidus*, Boh. He describes the male with anterior and intermediate femora considerably thickened; the thorax as wide as elytra. These features distinctly indicate No. 2.

Rye's observations (Ent. Ann., 1869, p. 45) on Dr. Seidlitz's characters are not valid, as Rye is referring them to the insect figured in the frontispiece of the Annual. This is undoubtedly our No. 1, and Seidlitz's insect is our No. 2.

The excellent figure of *B. pellucidus*, Boh., referred to above, coincides with No. 1, and the elytra in that drawing confirm the suggestion that Boheman's "thrice longer" is too much. They are drawn about  $2\frac{1}{3}$  times longer than thorax,—their natural proportions.

From the foregoing observations it would appear:—Firstly, that No. 1 is Boheman's *pellucidus*, and that his description apparently comprises the male and female indiscriminately; secondly, that No. 2 is the *B. pellucidus*, Boh., of Seidlitz; thirdly, that the insects are abundantly distinct, although both are known by the one designation of *pellucidus*, Boh. No. 1, having prior claim to this title, I propose, in view of the facts of the case, to name No. 2 *duplicatus*.

The following table will perhaps be useful for separating our

British exponents of the genus *Barypithes* as now constituted in the European Catalogue.

I.—Rostrum with a deep central furrow throughout its entire length...

*sulcifrons*, Boh.

II.—Rostrum without deep central furrow; at most with a small fovea or shallow depression.

A.—Integument clothed with distinct outstanding hairs.

*a.* Anterior and intermediate femora of male strongly, posterior moderately, thickened; thorax almost globular; elytra about twice the length of thorax; legs comparatively thick and short; colour paler; average length 3 mm....

*duplicatus*, n. sp.

*aa.* Anterior femora of male strongly, intermediate and posterior moderately, thickened; thorax as long as broad, with sides almost semicircular, but converging in front; elytra more than twice as long as thorax; legs comparatively long and thin; colour darker; length, 3–4 mm. ....*pellucidus*, Boh.

B.—Integument without distinct outstanding hairs.

*a.* Pubescence decumbent, fine, but distinct; striae of elytra in both sexes deep and continued to apex; thorax more strongly punctured; rostrum little compressed laterally near middle...

*pyrenæus*, Seidl.

*aa.* Pubescence very fine and indistinct (insect appearing almost glabrous); striae of elytra much less deep, usually obsolete at apex, but sometimes feebly marked; thorax less strongly punctured; rostrum compressed laterally near middle...

*araneiformis*, Schr.

*B. duplicatus* was sent to me as *pellucidus* by the Rev. Theodore Wood many years ago. He took it in great numbers in July, 1886, between Broadstairs and Margate, lying about in hollows on the sand (Ent. Mo. Mag., xxiii, 40). In a recent letter to me Mr. Wood says, "They were restricted to one small patch of sand, just above high-water mark, and were over in two or three days. I never found the species again." In June, 1898, the same species was also sent to me as *pellucidus*, by Commander Walker, R.N., from the Blean Woods, Kent, where he frequently took it trapped in water in deep cartwheel tracks, as well as in faggots (Ent. Mo. Mag., xxiv, 208). The Rev. H. S. Gorham records the capture of *Omius pellucidus*, at Eastry, near Sandwich, in 1872, "in great numbers crawling in the sandy gravel by the side of the road. The dead bodies of hundreds, and thoracic and femoral development of the males, testifying to the severity of the struggle for existence" (Ent. Mo. Mag., ix, p. 118). I have not seen any of these specimens, but the reference to "the thoracic and femoral



development" would suggest that they also may be referable to *B. duplicatus*. Captain Sainte-Claire Deville says that in France this species is the rarer of the two, and appears to be confined to the Armorican peninsula and to Limousin. Undoubtedly this species is the *pellucidus*, Boh., of Scidlitz.

*B. pellucidus*, Mr. Newbery informs me, is widely distributed in Britain. It first occurred to me (a single specimen only) in June, 1900. On discovering in 1909 that it was distinct from my other exponents of the species, I searched for it in June and July, and captured about 60 examples. The males were in the proportion of one to four females. I took it by sweeping in damp ground in woods at Ivybridge, but failed to detect its food-plant, nor has the insect occurred to me in any other place in the district. Mr. Newbery has taken two females of it at Higham's Park. The females seem to vary in size very much.

*B. pyrenæus*. Since my original discovery of this species (Ent. Mo. Mag., xxxiii, 134) it has occurred in numbers all over the Plymouth district. The noteworthy fact about it is, however, that it seems—(temporarily, at least) as far as my single-handed efforts may be considered of value on such a subject—to have replaced *araneiformis*, as I have not met with this latter insect at all since about 1898, and when recently I wanted a few I applied to my friend, Mr. de la Garde, to supply them from his abundance of that species at Christow. Following up the distribution of *pyrenæus*, by the courtesy of Mr. F. R. Rowley, I had the loan of the examples of *araneiformis* in the collection (now located in the Exeter Museum) of the late Mr. J. J. Reading, of Plymouth. There were some half dozen specimens, and all were true to name: no *pyrenæus* was amongst them. Unfortunately, they were not labelled, but as Mr. Reading left Plymouth somewhere about 1860 it is reasonable to assume that the insects were captured previously to that date, and I think that so keen an entomologist as the discoverer of *Actocharis* would hardly have overlooked *pyrenæus* had he ever seen it. Now, one more point. Prior to 1894 the Rev. T. A. Marshall resided at Botusfleming, Cornwall, and collected various Orders of insects. His collection of beetles (or rather the residue thereof, after many vicissitudes) is now in my possession, and it is remarkable that in his small series of four beetles standing as *araneiformis* two are *pyrenæus*. They are carded, with "Bfm." written underneath, but no date. In 1897, Mr. G. C. Champion, F.Z.S., recorded *pyrenæus* from Portscatho, Cornwall (Ent. Mo. Mag., xxxiii,

214). Mr. P. de la Garde, who has worked the Teignmouth and Exeter districts with so much success, has not yet met with it in those localities. I have, however, seen four examples, one male and three females, of *araneiformis*, taken by him at Bovey Tracey in dead leaves, which are somewhat intermediate in form, as the elytral striae of the male are distinct to apex, but are not as deep as in typical *pyrenaeus*, whilst the head and pubescence are those of *araneiformis*.

In preparing the foregoing notes, I acknowledge, with best thanks, the kind assistance of Capt. Deville, Mr. G. C. Champion, Commander J. J. Walker, Mr. E. A. Newbery, and the Rev. Theodore Wood. To Mr. R. J. Baker I am greatly indebted for help in obtaining the photographs, and last, but not least, I wish to thank J. J. Mac Andrew, Esq., for unqualified permission to collect in his private grounds at Ivybridge.

Morwell, Lipson Road, Plymouth :

April, 1911.

A NOTE ON *QUEDIUS ATTENUATUS*, GYLL., VAR. *PICIPENNIS*, HEER.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

Much resembles the dark form of *Q. fulvicollis*, Steph., but less fusiform in shape and with a narrower head and shorter elytra; pitchy or pitchy-brown, elytra lighter, slightly metallic; antennae, palpi and legs testaceous, posterior tibiae pitchy; head slightly transverse, antennae not thickened towards apex, penultimate joints slightly longer than broad; thorax a little longer than broad, about as broad as elytra; elytra shorter than thorax, almost parallel-sided, closely, finely, and somewhat rugosely punctured; hind body more parallel-sided than in *Q. fulvicollis*, punctuation coarser, as dense on basal segments, but more diffuse on apical, pubescence shorter and less iridescent: first joint of posterior tarsi scarcely as long as last. Long., 5—6 mm.

This is the form described by Fowler (Col. Brit. Isl., Vol. II, p. 244) under the name *Q. attenuatus*, Gyll., var. *picipennis*, Heer (nec Scriba). In the last European Catalogue *attenuatus*, Gyll., is given as a synonym of *picipennis*, Heer, but it will be seen that the two are abundantly distinct, as *Q. picipennis* differs from *Q. attenuatus* in its more parallel-sided form, more transverse head, more slender antennae, and more coarsely and diffusely punctured hind body. It is larger and darker than *Q. scribe*, Ganglb., the elytra are more closely punctured, and the apical dorsal segments of the hind body are more strongly and diffusely punctured.

The aedeagus is somewhat intermediate in structure between that of *Q. attenuatus* and *Q. fulvicollis*. The upper or larger lobe closely resembles the same portion in *Q. attenuatus*, but the lower lobe is much broader and more like that of *Q. fulvicollis*.

I have specimens of *Q. picipennis* from Garvie, Ross-shire; Dalwhinnie, Inverness-shire; and Mount Brandon, Co. Kerry.

As several Coleopterists have told me they have had difficulty in identifying members of this group (*Raphirus*) of *Quedius*, I append a table of the species.

- I.—Scutellum smooth ..... *Q. auricomus*, Kies.
- II.—Scutellum punctured and pubescent.
- i.—Size larger, shape more fusiform; head much longer than broad; first joint of posterior tarsi much longer than last ..... *Q. rufipes*, Gr.
- ii.—Size smaller, shape less fusiform; head broader; first joint of posterior tarsi equal to or only slightly longer than last.
- 1.—Elytra bright bronze or yellowish; 2nd to 4th dorsal segments of hind body with a dark velvety depressed patch on each side; first joint of posterior tarsi slightly longer than last...  
*Q. semiannuus*, Steph.
- 2.—Elytra duller, not yellowish; hind body without dark velvety depressed patches; first joint of posterior tarsi not longer than last.
- A.—Antennæ thickened towards apex, penultimate joints about as long as broad; head about as long as broad; hind body very closely and evenly punctured ..... *Q. attenuatus*, Gyll.
- B.—Antennæ not thickened towards apex, penultimate joints slightly longer than broad; head distinctly transverse.
- a.—Size larger; basal segments of hind body very closely punctured.
- a\*.—Form subparallel; head less transverse; elytra shorter than thorax; hind body more coarsely punctured, apical segments not so closely as rest ..... *Q. picipennis*, Heer.
- b\*.—Form more fusiform; head more transverse; elytra about as long as thorax; hind body evenly and less coarsely punctured...  
*Q. fulvicollis*, Steph.
- b.—Size smaller; hind body much less closely punctured; head strongly transverse ..... *Q. boops*, Gr.

Bradfield, Berks:

May 14th, 1911.

## STENOCEPHALUS MEDIUS, M. ET. R. :

## AN ADDITION TO THE LIST OF BRITISH HEMIPTERA.

BY E. A. BUTLER, B.A., B.Sc., F.E.S.

The genus *Stenocephalus* contains upwards of a dozen Palearctic species, but only two of these have been included in the published British lists, viz., *S. agilis*, Scop., and *S. albipes*, F. (= *neglectus*, H.-S.); a third species, however, *S. medius*, M. and R., has long existed in our collections, though hitherto without recognition. From our other two species it may easily be distinguished by the following characteristics: Its average size is smaller and the body is proportionately broader behind; the legs and antennæ are shorter; the basal joint of the latter is shorter and stouter, the basal yellow ring on the apical joint is smaller, and the proximal dark ring on the second joint is obscure and brownish; the hairs on the legs are short and far less conspicuous; the rostrum is longer and reaches the posterior coxæ. The greater length of the rostrum in this smaller and shorter-legged species is a curious fact, and it would be interesting to know whether there is any difference in the method of feeding to account for the altered proportions.

In Pl. V of Saunders' "Hemiptera-Heteroptera of the British Islands," fig. 5 more nearly represents *S. medius* than *S. agilis*; for the latter the antennæ and legs should be longer, and the hairs much longer and more numerous. The measurement given is that of *S. agilis*.

Of *S. medius* I have two specimens which I took at Maidenhead Thicket on August 8th, 1893 (see Ent. Mo. Mag., vol. xxxi, p. 76); Mr. Champion has several from Darenth Wood, Mr. W. West has one also, and there are some from the same locality in the Power Collection in the British Museum; Commander Walker has taken specimens at Wytham Park, Oxfordshire, one of which is now in the collection of Mr. J. Collins, and another is, I believe, in the Bury St. Edmund's Museum; Mr. W. Holland has two from Bulmershe, Berks, and Mr. C. Morley also has one example. I am greatly indebted to the above gentlemen, as well as to Mr. J. Edwards and Mr. J. H. Keys, who have all kindly submitted to me their British specimens of this genus. So far as I have been able to verify them, *S. agilis* seems to be with us entirely a littoral insect, occurring where species of *Euphorbia* grow on the south coasts of both England and Wales, while *S. medius*, as the above records show, occurs inland.

The following table may assist in the separation of our three closely allied species:—

i. Hairs on legs long; rostrum reaching to intermediate coxæ.

(a) Second joint of antennæ with dark ring near the base; femora with long hairs which are not erect. Length, 12–13 mm. ...*agilis*, Scop.

(b) Second joint of antennæ without dark ring near the base; femora with long erect hairs. Length, 10–11 mm .....*albipes*, F.

ii. Hairs on legs short; rostrum reaching to posterior coxæ. Length, 8–10 mm.  
*medius*, M. and R.

It should perhaps be added that the right of *S. albipes* to a place on our list is based only upon two ancient records, and it seems doubtful whether the insect is really indigenous, as it is a more meridional species than either of the other two.

56, Cecile Park,

Crouch End, N.:

May 8th, 1911.

## BRITISH ORTHOPTERA IN THE DALE COLLECTION.

### I.—EARWIGS, COCKROACHES, AND CRICKETS.

BY W. J. LUCAS, B.A., F.E.S.

Four drawers are sufficient to contain the Dale Collection of British *Orthoptera*, now located in the Hope Department of the Natural History Museum at Oxford. The Collection comprises a fair number of insects, which, though often of much interest historically, are in many cases in very poor condition. They were usually so set as to touch the paper in the drawers, making it difficult to handle them with safety. Prof. E. B. Poulton has lately, however, had them all staged, so that it is now possible to examine them without danger. All the data with the insects are referred to in these notes, even though they may seem to be unimportant. Many of the specimens, unfortunately, are entirely without data, and are therefore of very little value, if any, to students of this important order of insects. When it seemed sufficiently certain that the handwriting of the labels might be assigned to J. C. or C. W. Dale, this has been stated in brackets.

#### EARWIGS (*Forficulodea*).

*Labidura gigantea*.—This earwig now known as *L. riparia*, is represented by four examples—a ♂ and a ♀ (1, 2) unlabelled, a ♂ (3) from Christchurch, and a ♀, (4) labelled "Ch. Ch., July, 1808" (J. C. D's writ.).

*Lubia minor*.—There are twelve (5-16) specimens (7 ♂ and 5 ♀); but being unlabelled, they are without interest.

*Forficula auricularia* is represented by no less than thirty-six examples, the first three being named, var. *infumata*. (No. 17) is an unlabelled nymph, (18) is a female, apparently from "N. Uist" (C. W. D's writ.), and (19) is a female labelled "Fishall (?) July, 1877" (C. W. D's writ.) The next two (20, 21) are named var. *neglecta*; but they are what are usually styled *forcipata*. (20) is a male from Glauvilles Wootton (printed label), (21) pinned and having spread wings is from Eltham (?). There follow three named *forcipata*. (22) and (24) are unlabelled males, (23) is a male with two labels—the former "July (printed) 37 (J. C. D's writ.)," the second "Milton Wood" (J. C. D's writ. in red ink). (25-29) are named var. *borealis*. A female (25) is labelled "Loeh (sic) Swilly, Donegal, J. L.," a ♀ (26) and two males (27, 28) are unlabelled. (29) on card with wings spread, bears two labels "May 18 (printed) 37" (J. C. D's writ.) and "Portland 1843" (J. C. D's writ.). The discrepancy as regards date will be noticed. The next six are named var. *arenosus*. (30) and (31) are unlabelled males, and (32), a male, has nothing more than a small blank green label. The next specimen, a female (33), is marked ♂-♀, but there is no sign of hermaphroditism; another label gives "White Sand Bay, Aug. 1864" (J. C. D's writ.). No. 34 is a male without data. No. 35, a female, has a blank green label, and a second one (printed) "White Sand Bay." The next three, all males, are styled var. *media*; 36 and 37 are without data, but the latter is a specimen of *Forficula lesnei*; 38 is labelled "md. stones Green Wall Spring 1860" (J. C. D's writ.). The rest are not assigned a varietal name. A male (39) and a female (44) are from "Dover" (J. C. D's writ.). No. 40, a male, has twisted callipers and bears a printed number "565." No. 41 bears the sign ♂-♀, and, judging by the callipers may perhaps be a hermaphrodite. The next specimen (42), a male, bears two labels—"Aug. 18 (printed) 25" (J. C. D's writ.) and on the second "1055." Nos: (43) ♀, (45) ♂ (46) ♀ (47) ♂ (48) ♀ (51) ♀ (52) ♀ are all without data. Two females (49) and (50) are labelled "Oct. 66" (J. C. D's writ.). The last eight (45-52) are carded and have their wings spread.

*Forficula lesnei*.—There are twelve specimens of this interesting species under their true name, while a thirteenth (No. 37 above) appears under *F. auricularia*. The first (53), a male, has a blank red label, and a second bearing "Sep. 28, 1837." Three males (54, 56, 60) and a female (64) are without data. No. 55 is labelled "Gl. Wootton, Nov. 14/60" (J. C. D's writ.) and has a printed label also "Nov. 14, 1860" (the 14 and the 0 being filled in in J. C. D's writ.). Three males (57, 59, 62) and a female (61) are from "Weymouth, Sept. 23, 1889" (C. W. D's writ.). Two females (58 and 63) are labelled "I. of W." (J. C. D's writ.).

*Apterygida albipennis* is represented by three specimens—a male (65) "Charing, Sept. 17, 1904" (C. W. D's writ.), a female (66) unlabelled, and a female (67) "Charing, Kent, Sept. 17, 1904" (C. W. D's writ.).

*Apterygida arachidis*.—There are three examples all bearing labels in C. W. D's handwriting. They are—a male (68) "Queenborough, J. J. Walker,"

a female (69) "Queenborough, in bone sacks, Apr. 4, 1897," a female (70) "Queenborough, J. J. Walker, Apr. 4, 1897, bone sacks."

*Anisolabia annulipes* again is represented by three examples. All are females, labelled—(71) "Col: bakehouse. Tavistock" (C. W. D's writ.), (72) "Tavistock, H. Swale. Apr. 1894," (73), "Tavistock, Ap. 1894."

*Anisolabia maritima*.—There are six examples—three males (76, 78, 79) and three females (74, 75, 77). None are labelled except (77) "Northumberland" (printed). No. 78 has small callipers.

#### COCKROACHES (*Blattodea*).

*Blatta lapponica* is represented by eleven examples, two only (83 and 85) carded specimens, being labelled—"Lyndhurst" (J. C. D's writ.); (88) is a carded specimen, with wings spread; (86 and 87) also have their wings spread; (89 and 90) are nymphs.

*Blatta nigripes*.—Seven specimens. Two (94, 95) are nymphs; (92) is labelled "Lizard (*sic*) Oct. 18, 1873" (C. W. D's writ.); (97) "Bournemouth," 1845 (J. C. D's writ.); the rest bear no data. [This insect is in reality only a form of the next.—W. J. L.].

*Blatta ericetorum*.—There are eleven examples, three (98, 101, 103) being labelled "Land's End, 1864" (J. C. D's writ.) while (98) bears also a printed label to the same effect. (105) bears the letters "B. M." (perhaps in J. C. D's writing). The rest (99, 100, 102, 104, 106-108) are unlabelled. (108) is a nymph.

*Blatta livida* is represented by ten specimens. (109) has "1036" printed on much faded reddish paper (111) is labelled "Portland, July 30th, 1875" (C. W. D's writ.). (112) has two labels, "Bournemouth" (printed) and "Bournemouth, 1845," (J. C. D's writ.). (114) bears the date "Oct. 66" (J. C. D's writ.). 117 has the labels "Glanvilles Wootton" (printed) and "Nov/m/67" (J. C. D's writ.). 118 is labelled "B-mouth 46." The rest (110, 113, 115, 116) are without data. (114-118) are "nymphs."

*Blatta germanica*.—There are eleven examples (119-129), all without any data whatever. The first four only are mature, the rest being "nymphs." (126, 127) are on one card, as are also (128, 129).

*Periplaneta orientalis*.—Of the six examples (130-135) one only (130) has a label—"Sherborne 1887."

*Periplaneta americana*.—There are two specimens only—(136) labelled "R. Newstead Chester 1895" (C. W. D's writ.), and (137) bearing the number  $\frac{4}{3}^5$ .

*Periplaneta australasiae*.—Again, there are two specimens (138, 139) the second being a "nymph." Both bear an inscription, the first part of which is illegible, followed by "Sherborne 1839."

#### CRICKETS (*Gryllodea*).

*Acheta domestica*.—There are seven examples, all unlabelled (140-146). (140, 142, 144) are males, while (141, 143, 145, 146) are females.

*Gryllotalpa vulgaris*.—With the exception of (151) which bears the written No. "63," all six specimens (147-152) are without data.

*Acheta campestris*.—This interesting species is represented by 8 examples (153-157) being males, (158-160) females. (153, 154) bear a label which appears to be "Christchurch" followed by the date "1885" (C. W. D's writ.). (155) is labelled "Christchurch July 1885" (C. W. D's writ.); by its side is also a printed label "Christchurch," which may however refer to the first four (153-156). (156) bears the printed date "May (8). 186 (8)," the two 8's in brackets being filled in in writing. (157-160) are without data.

*Nemobius sylvestris* is represented by nine examples (161-169). (163) is labelled "New Forest" and (166) "Brockenhurst 1874," the 4 being filled in. The rest are unlabelled. Below (168) occurs the locality "New Forest," which perhaps is intended to refer to all nine insects.

(To be continued).

28, Knight's Park,

Kingston-on-Thames :

May, 1911.

*Note on the methods used to obtain minute blind Staphylinidæ.*—The account given by Signor A. Dodero in his paper on the genus *Leptotyphlus*, Fauvel [Ann. Mus. Civ., St. Nat. Genova (3) iii, pp. 631-640 (1908)], cannot fail to interest British Coleopterists, some of whom may like to try his *modus operandi* in this country.

"From the preceding account [of what is known about the few recorded species of this genus] it can easily be seen how rarely one meets with these minute creatures, which (with the exception perhaps of *L. sublarvis*) were considered to be rarities of the first order. Indeed, their very small size, which is almost unique in the family, added to the extreme slowness of their movements, makes capture by ordinary methods almost impossible. I found the first specimens of *L. perpusillus* only by examining with a lens the earth collected by myself during several years, and which I had sifted and then placed in special receptacles. The insects came to the surface to die about a month after the earth had been put into the boxes and where it was quite dry. Recently, however, after several attempts, I succeeded in finding a method which makes their capture very much easier, so that in a few months I can sometimes procure, in fairly large numbers, several of the known species, as well as new ones. The following is my method: Having dug out the earth, as one usually does to obtain subterranean forms, at the foot of old tree trunks (to a depth of 10-15 centimetres at least), or from beneath deeply buried large stones (taking care to scrape the sides and bottom of the hole), one sifts it with wire sieves (with a mesh of  $\frac{3}{8}$ ,  $\frac{3}{4}$ , or 1 millim). The earth remaining in the sieve is put aside for further examination, and that which has passed through is replaced in the same sieve and flattened down a little, care being taken not to shake it,



otherwise the fine earth would of course fall through again. The sieve with its contents is then placed very gently on a white plate containing a little water, and the whole exposed to the light and air. Under these conditions the drying of the earth takes place from the top downwards, and the insects, in order to escape from the dryness, tend to bury themselves till they reach the bottom of the earth. Then they fall through into the plate beneath. A glance at the plate from time to time, in which they can easily be seen floating on the water, permits an easy capture."

Signor Dodero was kind enough to show me his very successful method in operation at Genoa last summer, when I had the pleasure of seeing that extraordinarily minute Staphylinid genus *Leptotyphlus* alive for the first time. During an excursion to Sardinia with this gentleman and Signor Ferdinando Solari, I was also introduced to the mode of obtaining and sifting the earth from beneath the enormous boulders on the oak-clad slopes of the Gennargentu range of mountains where many blind *Coleoptera* were captured belonging to the genera *Reicheia*, *Scotodipnus*, *Scotonomus*, *Scotodites*, *Bathyscia*, *Amaurops*, *Raymondionymus*, &c. The sifted earth was brought back to Genoa, and the finer particles have since yielded, I believe, various *Leptotyphlus*; and the coarser earth, after being placed for a few days in very shallow close fitting wooden boxes, has produced more specimens of the genera noted above, as well as many others not previously seen; the insects in this case always coming to the top as the earth dried.—G. C. CHAMPION, Horsell, Woking: May 16th, 1911.

*Tachyporina*, &c., at Nethy Bridge.—I spent my summer holidays in 1910 in the same quarters at Nethy Bridge that we occupied in 1908. During this last visit I worked carefully the moss which is such a characteristic feature of these northern pine forests, and secured as a result some interesting insects. Out of a thick clump of moss by the side of a cart-track through the forest I shook on 22nd August a pair of *Lamprinus saginatus*, Heer. The only previous record from Scotland was one due to Dr. Sharp, who took this species sparingly in flood refuse in the Solway district. Mr. W. E. Sharp, who spent a few days with me in September, swept up a specimen of the species near Forres. These captures greatly extend the northern range of this species; in the moss in which my specimens occurred there was a number of a species of *Myrmica*, but apparently it was not a nest. In the genus *Tachinus*, I found *flavipes*, F., not uncommon, though very local, and, as in 1908, *proximus*, Kr., and *pallipes*, Gr., occurred in fair numbers, all in sheep droppings; one specimen of *elongatus*, Gyll., was captured while it was taking an evening stroll along one of the forest roads. A nice series of *Megaeronus inclinans*, Grav., was obtained from thick moss in the forest; this insect is not rare at Nethy Bridge; I always found a specimen when I specially went out to look for it, and it occurred apparently all over a widely extended forest area. A long day's climb on the Cairngorms was rewarded by a specimen of *Bryoporus rugipennis*, Pand.; it occurred in moss growing in an almost inaccessible spot at an elevation of about 3,500 feet; I had to work my way up to the place by the careful use of both hands and feet. Several species of the genus *Mycetoporus* turned up in the moss, including

*monticola*, Fowler, *splendidus*, Grav., *lucidus*, Er., and, in 1908, *nanus*, Er. It is perhaps worth mentioning that out of this forest moss I secured a series of *Euryporus picipes*, Payk., and specimens of *Philonthus scutatus*, Er., *Xantholinus distans*, Kr., *X. tricolor*, F., the type form with the base of the thorax dark, and *Acidota crenata*, F., *Quedius lateralis*, Grav., *Q. nigriceps*, Kr., and *Q. picipes*, Mamm., were abundant in the moss all over the forest. I was much struck by the fact that while species of the genus *Quedius* occurred freely in this forest moss it was only very rarely that any species of *Philonthus* or of *Tachyporus* could be obtained; though, as usual, several of the commoner species of the latter genus were found in moss growing in more open places.—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: May, 15th 1911.

*Quedius vexans*, Epp., of the British List.—In vol. xlii, p. 198, of this Magazine, Mr. N. H. Joy published some notes on *Coleoptera* occurring in the nests of mammals and birds; two of these were new to our list, one of them, a red-winged *Quedius*, was named *vexans*, Epp. I have recently had some correspondence with Dr. Bernhauer in reference to this *Quedius*, and sent him a couple of specimens. Dr. Bernhauer now writes as follows:—"The *Quedius* you sent is *heidenreichi*, a short description of which appeared in the 'Entom. Blättern' for 1910. A complete description will appear in the next 'Hefte der Münchener Koleop. Zeitung.'" It is the same insect which Capt. St. Claire Deville has also briefly described as *Q. talpularum*." It is evident from this letter that our insect has been wrongly named as *vexans*, Epp., that it was new to science when Mr. Joy discovered it, that it was undescribed until 1910, and that it will have to be known as *heidenreichi*, Bernh. It is perhaps worth mentioning that I have also had some correspondence with Mr. Rosenberg of Copenhagen in regard to *Coleoptera* found in moles' nests. Mr. Rosenberg informed me that in Denmark they found in these nests *Q. longicornis*, Kr., and *Q. ochripennis*, Mén. = *puncticollis*, Thoms., and he kindly sent me three specimens of the latter species. On comparing these with our moles' nest insect, I found as I suspected that they were identical, and I have, therefore, informed Mr. Rosenberg that the Danish species is also *heidenreichi*, Bernh. It is curious that both in Denmark and in Great Britain this insect should have been wrongly identified.—ID.

*Medon apicalis*, Kr., &c., near Oxford.—On the evening of May 9th I was much pleased to sweep up a specimen of *Medon apicalis*, Kr., at Wood Eaton, quite close to the elm stump in which *Plegaderus dissectus* has recently occurred (*ante*, p. 111); this latter species has again been found in the wet rotten wood, in company with *Quedius microps*, *Homalium exiguum*, and *Abræus granulum* (3). *Oligota apicata*, several in dry fungoid growth on beech at Wood Eaton, May 15th, *O. granaria*\* in some numbers in mill refuse at Cothill, Berks, May 1st; *Homalota splendens*\* by sweeping at Boar's Hill on May 16th, and *Ceuthorrhynchus nasturtii*, locally common of water-eress at Cothill, May 20th, are perhaps worth a passing notice.—JAMES J. WALKER, Oxford: May 22nd, 1911.

\* Not included in the Berkshire County List.

*Ceratophyllus silantiewi*, Wagner; a "plague-flea."—I have recently received from Dr. Petrie, of the Lister Institute, 18 specimens of the little known flea, *Ceratophyllus silantiewi*, Wagner, captured early this year at Manchourie on the frontier of Siberia and Manchuria. The examples in question were taken from "Tarabagans" (*Arctomys bobac*). Tarabagans are known to suffer from epidemics of plague, and the recent epidemic in Manchuria started amongst the Chinese hunters of these animals in Mongolia. These hunters returned south when the winter set in and carried the disease with them. Dr. Petrie informs me that the few specimens of this flea surviving when he received them at Mukden fed when placed upon his arm.—N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, W.: May 18th, 1911.

## Obituary.

William Alfred Rollason died at Truro on April 23rd, after a very brief illness, at the comparatively early age of 48 years. Since 1899 he had held the position of Art Master in the Central Technical Schools of that town, in which, and indeed throughout the West of England, he was well known and greatly esteemed for his marked artistic and musical talents, as well as for his genial and enthusiastic character. As an Entomologist he has probably contributed more than any other worker to our knowledge of the insects of Cornwall, a county hitherto by no means fully investigated. His attention was at first mainly directed to the *Lepidoptera*, of which he formed a large collection, and we understand that he had in view the compilation of a text-book of the British species of the Order, for which he had executed a very fine series of coloured drawings of larvæ. Latterly he took up the study of the *Hymenoptera*, and was a highly esteemed correspondent of the late Mr. Edward Saunders; only as recently as our April number (pp. 90-93 *ante*) a very interesting list of Cornish *Aculeata* observed by him appeared in our pages. Mr. Rollason was a Fellow of the Entomological Society, to which he was elected in 1909.

## Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meeting of the Society held at the Royal Institution, Colquhoun Street, Liverpool, March 21st, 1911.—Dr. P. F. TINNE, Vice-President in the Chair.

Mr. G. H. Watson, of Manchester, gave a lecture on "The *Saturniidae*, a Group of Wild Silk Moths."

After reviewing the classification of the group, the lecturer detailed the work that is being done, by himself and others, in order to discover new sources of supply of silk and also to strengthen the races of silk-producing moths cultivated in Europe and Asia. The true silk moth is not known as a wild insect, although in China there are records of its cultivation upwards of

4000 years old. Occasionally disease ravages the inbred races of the insect, hence the necessity to introduce new blood. So far, hybridisation has not been very successful, thus the efforts of practical Entomologists are directed towards finding out and investigating new species of wild moths whose larvæ make a cocoon of serviceable silk. Mr. Watson showed the Japanese silk moth, *Antheraea yama-mai*, and also the Tussor, or Indian, silk moth, *A. mylitta*, as instances of wild insects capable of culture and yielding a large quantity of valuable silk; *Saturnia pyretorum*, the moth whose larvæ yields the gut used for fishing lines, the production of which forms the staple industry in the Island of Hainan (China), also came in for attention. The lecture was illustrated by Mr. Watson's collection of twenty large drawers containing many very rare species arranged with the silk they produce, the whole forming an educational exhibit of exceeding interest. At the same meeting Mr. W. Mansbridge, exhibited, on behalf of Mr. L. W. Newman, of Bexley, the new breeding pot invented by Mr. Newman, and also his relaxing boxes.

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The concluding meeting of the Session was held on April 9th. Mr. GEO. ARNOLD, Vice-President, in the Chair.

Mr. Wm. Mansbridge gave an address on *Grapholitha nævana* and *G.* (? var.) *geminana*, in which he dealt with the various forms of these insects in Lancashire and Yorkshire. He stated that in the West Riding the two species were in the imago state at the same time in localities near to one another, where the holly form (*nævana*) and the bilberry form (*geminana*) occurred. At Delamere however, the bilberry feeder was worn at the time the holly feeder was beginning to emerge in the district round Liverpool. Although *nævana* from holly had a variation like *geminana*, it was never so pale as the latter, and the moth from bilberry was always smaller in size; *geminana* did not possess a black variation like *nævana*, but a very small percentage were unicolorous dark grey. Mr. F. N. Pierce then described the results of his examination of the genitalia of the two species; after critically comparing a long series of preparations of both males and females, he had failed to distinguish any point of difference. In discussion by the Members it was held that the negative character of Mr. Pierce's results was not sufficient, in this instance, to sink *geminana* to the level of a variation of *nævana*. Mr. Wm. Mansbridge exhibited a long series of *Selenia bilunaria*, comprising very dark speckled forms and a new variation of a uniform dark ferruginous brown colour, for which he proposed the varietal name *brunnearia*. Mr. C. E. Stott showed a specimen of *Panclhora nivea*, L., an exotic cockroach, taken on the wing at Trentham, N. Staffs., in October, 1910.—H. R. SWEETING and WM. MANSBRIDGE, *Hon. Secretaries*.

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THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :  
 Thursday, March 23rd, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. Stanley A. Blenkarn, of Beckenham, was elected a Member.

Mr. W. J. Kaye exhibited a series of *Xylina conformis*, all but one from Glamorganshire, and remarked on its occurrence and distribution. Mr. Newman called attention to the devastation caused by some hitherto unknown disease among bees in the South of England. It was most contagious, and scarcely a hive remained over a large area. Mr. Brockstone, a bred series of *Apocheima* (*Nyssia*) *hispidaria*, and gave particulars as to breeding. He also contributed notes on the occurrence of numerous dwarf examples of *Hybernia defoliaria* at Richmond, the pairing of *H. marginaria* ♂ and *H. defoliaria* ♀, delayed wing development of *Chesius rufata*, pupation of *Triphæna pronuba* after hibernation without feeding; the finding of the ova of *Spilosoma menthastri* on the shell of a living snail, and the occurrence of batches of ova of *Hadena pisi* on a small plum tree. Mr. Newman said that *A. hispidaria* readily pupated in two inches of soil, if the bottom of the cage was a concrete floor. Mr. R. Adkin, two varieties of *Arctia caja* from Yorkshire larvæ; one with the whole of the fore-wings dull smoky-brown, with very much diminished white markings, the hind-wings black with only a few dull yellow patches, some ill-defined; the other with a concentration of the lighter colour of the fore-wing towards the base, and of the darker colour towards the apex, while the hind-wings were bright orange-red, with much reduced black markings. He also showed living *Apocheima zonaria*, with eggs *in situ*, under bark of *Clematis*.

Thursday, April 13th.—The President in the Chair.

Miss Alderson, F.E.S., of Worksop, was elected a Member.

Mr. Ashdown exhibited about 100 species of conspicuous *Coleoptera*, taken by him in Switzerland during July, 1910. Mr. Turner, living specimens of *Agapanthia asphodeli*, sent to him by Dr. Chapman from Hyères. Mr. Adkin, an undetermined Agrotid from the Isle of Lewis, a *Sciaphila* from Unst, probably referable to *S. colquhounana*, and a *Pyrameis cardui*, in which the row of spots on the hind-wings were united into an irregular blotch. Mr. Newman, on behalf of Mr. Oliver, a bred series of *Aphantopus hyperanthus*, which had emerged in January and February. The larvæ had fed all the winter on *Poa annua* until pupation. Mr. Hemming, series of *Brethsis selene* from Warwick and Sussex; the former were a much larger race in both sexes.—HY. J. TURNER, *Hon. Secretary*.

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ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, April 5th, 1911.—The Rev. F. D. MORICE, M.A., President, in the Chair.

The following gentlemen were elected Fellows of the Society: Messrs. H. W. Davey, Inspector of the Department of Agriculture, Geelong, Victoria, Australia; H. Boileau, 90 rue de la Côte St. Thibault, Bois de Colombes, Seine, France; Rufus Mallinson, Oakland, Windermere.

The President announced the death of Mr. P. C. T. Snellen, of Rotterdam,

the oldest Honorary Fellow of the Society, and moved that an expression of sympathy be forwarded to his family; this was seconded by Mr. Gahan and carried unanimously.

Mr. Robert Adkin exhibited, on behalf of Mr. Lachlan Gibb, of Montreal, Canada, three specimens (two males and one female) of a *Pieris* taken by Mr. Gibb at Lost River, Canada, in May, 1910, together with series of *P. oleracea* and *P. rapæ* from the same and other Canadian localities for comparison. Mr. Gibb had mentioned that *P. rapæ* was not an indigenous species, but was said to have been introduced into Canada some sixty years ago. He asked the opinion of the Fellows upon the three specimens, and suggested the possibility of their being the result of natural hybridisation between *P. oleracea* and *P. rapæ*. Dr. Dixey was of opinion that the three specimens in question were certainly not hybrids, and even probably only a variety of *P. oleracea*; he pointed out that they differed less from the *P. oleracea* exhibited than did the series of *P. rapæ* from one another. Mr. Rowland-Brown observed that the greater or less amount of grey suffusion was a common form of variation in the genus. Dr. Longstaff agreed with Dr. Dixey, and remarked that *P. rapæ* was certainly not an indigenous species in Canada. Mr. W. J. Lucas showed three specimens of *Euborellia moesta*, Géné, received on April 3rd from Hyères, from Dr. Chapman, with four others of the same species. Both sexes were shown; but they look rather alike owing to there being little difference in the callipers. He also exhibited a large ant, one of three specimens found this year at Swanage in a bunch of bananas, supposed to have come from Jamaica. The President observed that the specimen belonged to the genus *Neoponera*, and was probably *N. theresie*, Forel, a Central American species. He added that the genus was a curious one, combining the possession of a sting with the single abdominal node characteristic of the stingless ants. Mr. F. Muir, two specimens of the bat *Miniopterus schreibersi*, with ♀ *Ascodipteron* embedded at the base of the ear, from Amboyna. He said that the male and winged female hatch out as normal imagines, the female, after finding her host, cuts her way under the skin at the base of the ear, and then casts her legs and wings; her abdomen then develops to an enormous extent, and entirely envelopes her head and thorax so that she appears as a "bottle-shaped" grub without legs or head, this species he had named *Ascodipteron speiserianum*, after Dr. Paul Speiser. Mr. L. W. Newman, on behalf of Mr. G. B. Oliver, of Wolverhampton, a series of *A. hyperanthus* bred during January and February, 1911, from ova laid by a Leanington ♀ in July, 1910. The larvæ were fed in glass-topped metal boxes in a warm room (the fire being out at night). The specimens, though rather small, showed a great tendency to produce large spots both on the upper and under-sides. A few captured examples from the same locality, selected for prominent spotting, served to add emphasis to this tendency in the forced specimens. Mr. H. J. Turner, living specimens of a Longicorn beetle, *Agapanthia asphodeli*, sent by Dr. Chapman from Hyères. Commander Walker observed that he had found it in Malta (the only common longicorn there), and also at Gibraltar in the early spring, and always on asphodel.

ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF  
MUSCIDÆ ACALYPTRATÆ.

BY J. E. COLLIN, F.E.S.

(Continued from Vol. xlvii, page 178).

MICROPEZIDÆ.

*Calobata sellata*, Mg., described from a British specimen is considered by Becker to be a synonym of *cibiliaria*, L., but to my mind the description of the arista as "sehr kurzgefiedert," and the abdomen (female) as having "ziegelrother Legeröhre," points most strongly to its being identical with *petronella*, L. In either case the species sinks as a synonym, and should no longer burden the List.

*Calobata trivialis*, Lw.—I cannot separate the specimens upon which this species was added to the List by Mr. Verrall in 1894, from typical *cibaria*, L., the male abdominal appendages are exactly the same. Mr. Verrall was probably misled by the specimens under the name *trivialis* in Kowarz's collection, which are representatives of *cibaria*, L.

PSILIDÆ.

\**Psila nigromaculata*, Strobl.—This species has only one pair of dorso-central bristles on the thorax, it has the appearance of *bicolor*, Mg., but the antennæ are entirely pale, and the sternopleura is darkened in front of the middle coxæ. Col. Yerbury and Mr. C. G. Lamb have taken this species at Nethy Bridge (Inverness) in June, and Dr. Wood has found it in Herefordshire.

\**Psila humeralis*, Zett.—I recognise this as a species distinct from *nigricornis* in having a more pubescent arista, as well as being extensively reddish about the humeri. Col. Yerbury found it at Golspie (Sutherland) and Nethy Bridge (Inverness) in June and July.

*Psila pectoralis*, Mg.—I have not seen British specimens answering to this species, but those in Kowarz's collection are certainly distinct from *nigricornis*, they are smaller, the pleuræ entirely pale, and the pubescence of the arista longer. *P. pectoralis*, *P. nigricornis*, and *P. humeralis* are considered by some writers synonyms of *P. rosæ*.

*Psila gracilis*, Mg., was recorded from Lincolnshire in 1898 by Mr. P. H. Grimshaw, and Col. Yerbury has taken it in Scotland at Nairn, Nethy Bridge, and Golspie in June and July. *P. villosula*, Mg., is considered to be the same species.

*Chyliza atriseta*, Mg.—This is the type of Rondani's genus *Megachetum*, which is recognised as a valid genus in Kertész's Catalogue.

*Chyliza vittata*, Mg., was first recorded as occurring in Britain by the Rev. E. N. Bloomfield in this Magazine for 1904, p. 60. I have taken it myself in Dr. Wood's locality of Stoke Wood (Herefordshire).

*Loxocera aristata*, Pnz.—I accept Loew's interpretation of this species, because an examination of the figure given by Panzer must convince any one that he could not have had *albiseta*, Schrnk., before him.

*Lorocera albiseta*, Schrnk.—In the latest Catalogue this species is called *ichneumonca*, L., but Zetterstedt was positive that Linné's species was the same as the one I call *aristata*, Puz.

*Lorocera nigrifrons*, Meq.—Dr. D. Sharp confirmed the occurrence of this species in Britain on p. 255 of this Magazine for 1903,

*Lissa*.—This genus is placed among the *Sepsidæ* in Kertész's Catalogue, but the general clothing of the body and the absence of vibrissæ surely point to its being more related to the *Psilidæ* among which it stands in our List, though the ovipositor of the female shows relationship to the *Ortalidæ*.

#### CHLOROPIDÆ.

*Centor*, Lw.—Hendel has proposed a new name, *Cetema*, for this genus (surely he meant to have written *Centema*) on the ground that it was pre-occupied in the *Coleoptera* (Schönherr, 1847).

*Melanum*, Becker.—This genus, which comes very near to *Capnoptera*, Lw., was founded by Becker (1910) for the *Chlorops lateralis*, Hal., of our List. The species is not uncommon on the Suffolk coast.

*Haplegis rufifrons*, Lw.—Becker uses Meigen's name of *diadema* for this species, in spite of the very misleading nature of Meigen's description.

\**Diplotoxa approximatonervis*, Zett., has been taken by Col. Yerbury at Nairn, from May to July; it is much smaller than *messoria*, with the cross veins very close together, and the legs and scutellum pale.

\**Diplotoxa limbata*, Mg. (*inconstans*, Lw.).—This species is not uncommon at Chippenham Fen (Cambs.), in March and April; I have also taken it at Palling-on-Sea (Norfolk), in June, and in the garden at Newmarket (Suffolk), in September. Guerin described and figured it, 1842 (Mém. Soc. d'Agric. Paris), under the name of *Chlorops herpini*. I accept Meigen's name of *limbata* for this species, because there is nothing very contradictory in his description, but this cannot be said of his description of *cinetipes*, the name by which Becker considers the species ought to be known.

*Meromyza*.—Herr Becker considers that the characters upon which the species have been separated in the past are variable and unreliable, and in his recent work on the *Chloropidæ* recognises only four European species. My own studies have led me to the conclusion that many of these characters can be proved to be reliable by an examination of the male genitalia, for instance, *variegata*, Mg., and *lata*, Mg., as distinguished by Schiner are distinct species, as are also *saltatrix*, L., and *nigriventris*, Meq.

*Chlorops meigenii*, Lw.—Becker uses Schrank's name of *nasuta* for this species, with *lineata*, F., and *umbelliferarum*, Schrank, as synonyms, but he has apparently overlooked the fact that the name *umbelliferarum* dates back to Scopoli (Ent. Carn., p. 349), 1763. With regard to the resurrection of these old names, I cannot help thinking that unless we can bring forward reasons for bringing them to life sufficiently convincing to prevent future students from objecting to their use, we had far better let them sink into obscurity.

*Chlorops brevimana*, Lw.—Surely the absurdity of sinking Loew's name as



a synonym of *fulvipes*, v. Roser, is obvious to any one; all that von Roser published to enable any one to recognise his species were the following words, "*nigra nitida, capite pedibusque fulvis; alis hyalinis*;" this might apply to hundreds of species of *Diptera*, but by no possible chance to any species of *Chlorops*, so naturally his species remained unrecognised. To accept this as a sufficient description of a *Chlorops* entitling the name to priority is to reduce the study of Entomology to a farce.

\**Chlorops planifrons*, Lw.—Col. Yerbury caught a male of this species at Clifford's Castle (Herefordshire), on July 28th, 1902, and a female at Pembridge (Herefordshire), on August 15th, 1902. It may be known by its large black third antennal joint, with the arista whitish, the dull black thoracic stripes, and the large frontal triangle coloured somewhat as in *triangularis*, Beck.

\**Chlorops hypostigma*, Mg. (*minuta*, Lw.).—This is a comparatively common species, and I have met with it in numerous localities. It may be known by its small size (about 2 mm.), the yellow corners to the frontal triangle, the shining thoracic stripes, and the black and fairly large third antennal joint.

\**Chlorops serena*, Lw.—I have seen specimens from Herefordshire, Cambridgeshire, and Suffolk, it belongs to the group with black third antennal joint, and no sharply marked black sternopleural spot. I do not accept the name *calceata*, Mg., for this species because Meigen's description does not agree, and I do not believe that the specimens in Winthem's collections are those upon which Meigen founded the species, moreover, I know of specimens answering to Meigen's description of *calceata*, which much resemble *hypostigma*, Mg., but are distinct.

\**Chlorops triangularis*, Becker.—This species occurs in the New Forest (Hampshire); Mr. Verrall caught four specimens at Lyndhurst in June, 1895, and it has been taken by Dr. Sharp and Mr. C. G. Lamb. The black third antennal joint has a whitish arista, the sternopleural spot is not black, and the dark part of the frontal triangle is divided into two parts—an indefinite spot about the ocelli, and a triangle at the apex.

\**Chlorops interrupta*, Mg. (*hirsuta*, Lw.).—I have seen three specimens of what I believe to be this species, a male I caught myself at Cornbury Park (Oxfordshire) in July, 1904, and two specimens taken by Mr. C. G. Lamb at Wells (Somerset) in September, 1901. The pale third antennal joint and sternopleural spot and the pale frontal triangle with a dark central line help to distinguish the species.

*Chlorops læta*, Mg.—I have not seen a British specimen of this species with which *C. discicornis*, Lw., is said to be identical.

*Chlorops cinctipes*, Mg.—This is a very doubtful species, certainly not a *Chlorops*, and had better be struck out of the List (v. *Diploptera limbata*, p. (?).

*Chloropisca circumdata*, Mg.—This is the name under which *C. ornata*, Lw. (nec Mg.), should be known. I consider the identity of *C. notata* extremely doubtful, and though now given by Becker as the correct name for this species in 1902, after an examination of the types he came to the conclusion that they did not belong to the genus *Chloropisca*.

\**Chloropisca obscurella*, Zett., is the darkest species of the genus, with darkened legs, mouth edge, and scutellum, it is not uncommon, I have seen specimens from Suffolk, Kent, Glamorgan, and Sutherland.

\**Chloropisca rufa*, Mcq.—This does not appear to be a common species. Mr. Verrall took a female on his study window at Newmarket (Suffolk) in August, 1896. Mr. F. Jenkinson, a male in his garden at Cambridge in July, 1903, and Col. Yerbury a male at Walton-on-Naze (Essex) in July, 1909.

*Camarota*, Mg.—Becker has endeavoured to prove that this name must sink as a synonym of *Oscinis*, Latr., but his reasoning is unsound, being based upon an error. The name *Oscinis* was first published in 1804 (Nouv. Dict. d'Histoire Nat., xxiv, p. 196), and *O. curvipennis*, Latr. (= *Camarota flavitarsis*, Mg.), was not described until 1805 (Hist. Nat. Crust. Ins., xiv, p. 382, wrongly quoted by Becker as published in 1804); certainly Latreille, in 1804, when describing *Oscinis* gave "*mes mouches curvipennes*" as belonging to the genus, but he was not referring to the *O. curvipennis* he described in the following year but to his section "*X. Mouches curvipennes*" of 1802 (Hist. Nat. Crust. Ins., III, p. 460). The species quoted by Latreille as belonging to his genus *Oscinis* at the time of its formation were therefore, *Musca lineata*, F., *Musca oleæ*, F., *Musca coleoptrata*, Scop., *Musca planifrons*, F., and *Musca umbraculata*, F.

In 1805 (Hist. Nat. Crust. Ins., xiv, 382), he only gave *lineata*, F., and his new species, *curvipennis* (= *flavitarsis*, Mg.), as belonging to the genus, though he still doubtfully included *oleæ*, F., while we find *Musca planifrons* removed to the genus *Tetanocera*.

In 1809 (Gen. Crust. et Ins., iv, 351) the chief point to note is his inclusion of his previously founded (1804) genus *Otites*.

In 1810 (Considérations Génér. p. 444.) he gave as types of the genus *Oscinis*: *Musca formosa* (previously included in his genus *Otites*), *Oscinis lineata*, F., and *Tephritis strigula*.

Everything points to the fact that, whatever Latreille at different times included in the genus *Oscinis* he ultimately meant it to apply to *lineata* and its allies. This was recognised by Meigen and Macquart and the latter in 1835 (Hist. Nat. Dipt., II, 598) when restricting the name *Oscinis* to the species with the costa extending to the end of the discal vein, wrote as follows:—"Le nom d'Oscine a été donné primitivement par Latreille à un genre qui comprenait non seulement les Chlorops et les Agromyzes de Meigen, mais encore les Otites, les Dacus et d'autres Muscides de diverses tribus. Cependant, dans la seconde édition du *Règne Animal*, notre grand entomologiste paraît l'avoir limité aux premiers seulement. Nous croyons donc devoir le conserver; mais, comme celui de Chlorops appartient de droit au genre qui renferme les espèces aux yeux verts, nous réservons l'autre à celui-ci."

This action of Macquart's, though perhaps not in accordance with the views of the present day, has been accepted by all students of *Diptera* for 75 years, including Loew who in 1858 (Wien. Ent. Monatschr. II, 72) wrote:—"Herr Macquart hat die erste Meigen, sehe Abtheilung der Gattung *Chlorops*, Meig. von der zweiten generisch getrennt, ersterer den namen *Chlorops* gelassen, woran er ganz recht gethan, und auf die zweite den Namen *Oscinis* übertragen,

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It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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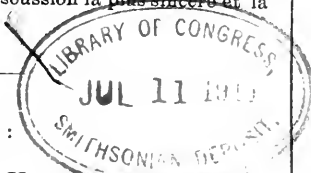
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“ wogegen sich nichts irgend Erhobliches einwenden lässt, und worin ihm also “ zu folgen ist, wenn die Confusion in Verwendung dieser Namen nicht endlos “ werden soll.”

I maintain that the interests of the science of Dipterology is best served by retaining the name *Oscinis*.

*Siphonella lævigata*, Fall.—I cannot understand why Becker considers *lævigata*, Zett., distinct from *lævigata*, Fall. Fallén knew only the female and Zetterstedt expressly stated “ *Feminam descripsi secundum specimen, quod Fallén ante oculos habuit* ” while Zetterstedt’s description cannot apply to *Siphonella oscinina* but does apply to *Haplegis tarsata*. The name *lævigata*, Fall, sinks as a synonym of *Haplegis tarsata*, Fall.

*Siphonella oscinina*, Flin.—This was recorded as British by various old writers and may be re-instated in the “ List,” for I have seen specimens from Herefordshire, taken by Dr. Wood, from Cambridgeshire, taken by Mr. C. G. Lamb, from Glamorgan, taken by Col. Yerbury, and I caught a specimen myself at Tuddenham (Suffolk) in August, 1906.

\**Siphonella tristis*, L.—This species with halteres and antennæ dark and proboscis not so long as in *oscinina* is not uncommon at Walton-on-Naze (Essex) in June, I have also taken it in Suffolk and Col. Yerbury found it at Gravesend (Kent) and again at Porthcawl (Glamorgan). Becker considers it a synonym of *nigricornis*, v. Roser, however v. Roser’s description of six words is not only hopelessly inadequate but does not agree in as much as the front tarsi are never black in *tristis*.

\**Siphonella longirostris*, Lw.—We possess Loew’s species in England unless there are two or more species with dull brownish-grey thorax, shining black pleuræ (except meso- and ptero-pleuræ) and pale legs.

\**Siphonella duinensis*, Strobl.—The combination of such characters as black halteres, milk-white wings, a large vertical triangle and entirely pale tarsi renders the distinguishing of this species an easy matter. I have had it separated under a MS. name for some time past upon specimens taken in Suffolk (Woodbridge and Butley), Essex (Walton-on-Naze), and Kent (Belvedere two specimens taken by Col. Yerbury). It was described by Strobl from specimens taken in the lagoon of Duino near Trieste.

\**Siphonella pumilionis*, Bjerk.—This is a most distinct yellowish species with almost confluent dark stripes on the thorax (like a *Chlorops*). I have seen only three British specimens, one taken by Mr. Verrall at Abbot’s Wood (Sussex) on June 28th, 1867, another by Dr. Capron probably near Shiere (Surrey), and a third by Dr. Sharp in the New Forest (Hants)

*Siphonella capreola*, Hal.—This is now recognised as an *Elachyptera* (*Melanochaeta*) and is identical with *aterrima*, Strobl.

\**Siphunculina ænea*, Mcq.—A male was found by Mr. Verrall at Cusop Dingle (Herefordshire) on July 11th, 1905, and a female at Ringmer (Sussex) on April 17th, 1867. I do not understand why Becker refuses to accept the generic name *Siphunculina*; Rondani sufficiently differentiated the genus in 1856 and evidently used the name *Madiza* in the sense we use *Siphonella*; moreover in Bigot’s collection under the name *Siphunculina brevinervis* Rond. there is a specimen labelled “TYP” (probably sent to Bigot by Rondani) which is a specimen of *S. ænea*, Mcq.

\**Oscinis nitidissima*, Mg.—This is a small black species resembling *O. frit*, L, but the thorax is brilliantly shining and the anterior tibiae more extensively pale. It does not appear to be uncommon in different parts of Suffolk in June.

*Oscinis anthracina*, Mg. (*atricornis*, Zett.).—This again is not uncommon in England (Cambridgeshire, Norfolk, Suffolk, Herefordshire) and Scotland (Invernesshire) in June and July. It resembles the last species but is of narrower build and the legs are entirely pale.

\**Oscinis cognata*, Mg. (*giteipes*, Lw.).—I have taken this very distinct species at Brandon (Suffolk) in June and at Chippenham Fen (Cambs.) at the end of May, and there were a number of specimens in the late Dr. Capron's collection probably taken near Shiere (Surrey). The strongly punctate thorax, entirely pale legs, and somewhat short wings tinged with yellowish-brown serve to distinguish it from any other species.

\**Oscinis levifrons*, Lw.—This most distinct species is easily recognised by its very large and brightly shining black frontal triangle, its shining black thorax with pubescence appearing pale in some lights, its brownish-yellow antennae and pale legs with femora and tibiae more or less darkened. Col. Yerbury took a male at Nairn on July 6th, 1904.

\**Oscinis sordidella*, Zett.—This has the thorax somewhat greyish, face jowls, frons extensively, and antennae yellowish, and legs entirely pale yellow. I took one male and two females of this species (which I consider quite distinct from *frontella*, Fln.) at Orford (Suffolk) in June, 1907, and a female near Eynsham (Oxfordshire) on July 3rd, 1910.

\**Oscinis frontella*, Fln.—I recognise this as a small shining black or slightly greyish-black species, with the belly of the female pale, partly pale antennae, frons narrowly pale in front and legs dark, with pale base and tip to the tibiae, and pale tarsi (sometimes in what is possibly a variety of the female the legs are entirely pale). I have seen specimens from various localities in England and Scotland. Becker has undoubtedly included several species under this name.

*Oscinis fasciella*, Zett.—I have no hesitation in considering this species distinct from *frontella* Fln., it is a small grey species with pale antennae, face and frons in front, abdomen with pale hind-margins to the segments, and considerably pale at the base, the four anterior legs pale, the hind femora and a broad ring on the hind tibiae dark, the hind tibiae bear a distinct black spur at the tip. I caught it at Aldeburgh (Suffolk) in September, 1907, and Col. Yerbury has found it at Gravesend and Dartford (Kent) and Walton-on-Naze (Essex).

*Oscinis pratensis*, Mg.—Col. Yerbury caught five specimens of what I believe to be this species at Torcross (Devonshire) in August, 1903. It was recorded as occurring in Britain by Curtis, but has since been relegated to the List of Reputed British species. It resembles my *frontella*, Fln., but is somewhat stouter and larger (2-2½ mm.) and is clothed with somewhat long yellowish-brown pubescence.

*Oscinis albipalpis*, Mg.—This species, like the last, has been reputed to occur in Britain; specimens taken by myself in Suffolk appear to answer to Becker's interpretation of the species: it may be known by its black antennae, pale palpi, face and front of frons, its greyish-black thorax with black pubescence, and its partly pale legs.



*Oscinis trilineata*, Mg. (*annulifera*, Zett.).—I have caught this species at Chippenham Fen (Cumb.) and Barton Mills (Suffolk) in the early spring, and Col. Yerbury has taken it at Fordingbridge (Hants) in May. It has a dark grey thorax with three (or really five) brown stripes, the frons might almost be described as having two brown stripes, and the scutellum is brown at each side, the shining blackish abdomen is broad and flat, and has greyish spots at the hind corners of each segment, the wings are rather short and the veins strongly marked. The hind tibiæ bear a minute black spur at the tip. It was in the List of Reputed British species as *Siphonella trilineata*

*Oscinis (Notonaulæ) cincta*, Mg.—This species has three impressed lines on the thorax, and resembles the next species, but is larger and darker, and all the bristles are usually black, though the pubescence appears pale in most lights. The sexes differ in the colour of the legs, which are entirely pale in the female, but in the male the femora are dark except at the tip, and the four posterior tibiæ, more especially the hind pair, are darkened about their middle. I possess it from several localities in Suffolk and Essex, and have seen specimens from Cornwall and Scotland. Zetterstedt's *O. sulcella* is the male of this species. The genus *Notonaulæ* has been suggested by Becker for those species of *Oscinis* with impressed lines upon the thorax, but there seems to me to be every gradation from deeply impressed lines as in *cincta* and *lineella* to merely indications of lines, owing to a slight increase in the punctuation, which indications are sometimes accentuated by thoracic stripes of a darker colour as in *trilineata*.

\**Oscinis (Notonaulæ) lineella*, Flin.—Like the last species but smaller and paler; thorax yellowish-grey, with all bristles of a yellowish colour; legs pale, with a slightly darkened band on the four posterior femora and tibiæ, the hind tibiæ appearing to have two narrow dark bands; abdomen, pale at base and with pale incisions; belly, pale. It is not at all uncommon at Newmarket (Suffolk) in September, and occurs on windows.

*Dicræus raptus*, Hal. (*obscurus*, Lw.).—The genus *Dicræus*, as redefined by Becker, includes those species of *Oscinis* with a very long radial (second longitudinal) vein, making the second costal segment three to four times the length of the third, and a head deeper than long, with wide jowls and somewhat retreating face; the male abdomen is somewhat more tubular than in *Oscinis*. The above species is the *Oscinis rapta* of the List, and may be known by the absence of the postical crossvein; the costa barely reaches the discal vein, the femora and hind tibiæ are darkened, and the pleuræ are shining black or dark brown.

\**Dicræus vagans*, Mg.—I have always considered that a species I find not uncommonly in Cambridgeshire and Suffolk in June was Meigen's *O. vagans*. Its chief characters lie in the pale legs and extensively pale pleuræ which are shining about the middle; the abdomen and the male hypopygium is also more or less pale. I have seen a specimen with the postical crossvein missing, as in *raptus*, but the jowls are deeper than in that species. Continental specimens of *rufiventris* that I have examined have the pleuræ entirely dull and are altogether darker, except for the abdomen. I cannot, therefore, agree with Becker in considering *vagans* a synonym of that species. *O. xanthopyga*, Strobl, is, however, probably a synonym.

\**Dierxus tibialis*, Macq.—Col. Yerbury caught this species at Porthcawl (Glamorgan) in June, 1906. It has the front legs only and the base of the abdomen pale. From an examination of long series of this and the last species I have come to the conclusion that they cannot be considered varieties of *pallidiventris*, Macq., or *rufiventris*, Macq.

*Lipara rufitarsis*, Lw.—I have seen specimens in the Dale Collection, now at Oxford, which were taken in the New Forest (Hants) and Seaton (Devon) in June, it should therefore no longer appear in italics in the "List." It is a much smaller and blacker species than *lucens*, with short whitish pubescence. Macquart's *Gymnopoda tomentosa* cannot be this species, because he described it as "Noire, a duvet jaune," and gave the size as "3 lig.," both of which characters apply only to *lucens*, Mg.

\**Elachyptera tuberculifera*, Corti.—Resembles *E. cornuta*, but the thorax is somewhat duller though the lines are not so deeply punctate, the vertical triangle is longer, the arista is stouter, and the scutellum is longer with about six marginal bristles upon tubercles more distinct than in *cornuta*. I have seen one female only taken by Mr. F. Jenkinson at Crowboro' (Sussex), on August 27th, 1907.

\**Elachyptera megaspis*, Lw.—I first found this species not uncommonly in the neighbourhood of Swanage (Dorset) in August, 1906, but have seen specimens from Devonshire, Sussex, Surrey, Cambridgeshire and Suffolk. It may be known by its elongate scutellum with about six marginal spines placed upon yellowish tubercles, its yellowish humeri, postalar calli and pleuræ round the root of the wing. The legs are pale yellow with brownish front tarsi.

\**Elachyptera srobiculata*, Strobl (*trapezina*, Corti).—This species is not uncommon at Chippenham and Wicken Fens (Cambridgeshire) in the first three months of the year. The black head with only the faintest tinge of red about the antennæ, the flat punctate scutellum with a truncate tip, the brownish legs and wings, and the somewhat pollinose thorax serve to distinguish the species. Becker places it in the genus *Oscinis*, but from its general appearance and the chaetotaxy, one must consider it an *Elachyptera*, in spite of the only slightly incassated and shortly pubescent arista.

\**Elachyptera pubescens*, Thalhhammer.—This has a smooth pollinose and not strongly punctate thorax and scutellum, and large prominent yellow palpi. It was not uncommon at Studland (Dorset), in August, 1906, and Col. Yerbury found it at Christchurch (Hants), in May, 1908. Corti places it in a separate genus *Lasiochata*.

*Melanochæta (Elachyptera) capreola*, Hal. (*aterrima*, Strobl).—This is very much like the small black species of *Oscinis*, but has a flattened and thickly pubescent black arista. I found it at Whittlesford (Cambridgeshire), on June 17th, 1909. Haliday's description was as follows: "O. nigra nitida, fronte "opaca triangulo nitido; alis fuliginosis; halteribus fuscis; arista crassa "dense plumata. Resembles *O. lavigata*, but the arista as in *O. cornuta*." The character of the dark halteres is sufficient in itself to identify this *Elachyptera*, all the other species having pale halteres. I believe this species is generically distinct from *Elachyptera*.

\**Gaurax ephippium*, Zett.—Three females taken in the New Forest (Hants)

answer in all respects to this species; three males taken at Whittlesford (Cambs.), New Forest, (Hants), and Porthcawl (Glamorgan) would appear to represent *G. fascipes*, Becker, having only one dark spot on the pleura (a streak on the meso-pleura) and the hind tibiae with a dark ring near the base, but everything points to these characters being only sexual.

*Selachops flavocincta*, Wahlbg.—I have not seen a British specimen of this genus which is now placed among the *Agromyzidae*.

(To be continued).

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### A NEW BRITISH *HALIPLUS*.

BY FRANK BALFOUR BROWNE, F.Z.S.

Since the appearance of the paper by Edwards, entitled, "A Revision of the British Species of *Haliplus*, Latreille" (Ent. Mo. Mag., xlvii, pp. 1—10, Jan., 1911), I have been working out my material, and find that I have a species of the "*ruficollis*-group" which is not included in that paper.

The male is at once distinguished by the form of the ædeagus, which differs from that of all the other species of the group, and it has the claws of the anterior tarsi practically equal in length, which separates it from *ruficollis*, *fulvicollis*, *wehnecki*, and *immaculatus*. One easily seen character also distinguishes it from all the seven species of the group, and that is the shape of the basal segment of the median tarsi. This segment has a very noticeable curve when viewed laterally, and gives the impression of a portion having been neatly taken out of the inner margin.

I believe that the female has the interstrial spaces of the elytra finely punctured throughout, as described by Edwards, for the female of *H. ruficollis*, De G.

The species occurs in England, Scotland, and Ireland, and so far as my experience goes, it is found in lakes and canals, and large drains of clear water.

I am now preparing a somewhat detailed paper on the *Halipli* of the *ruficollis*-group, as there are several points upon which I do not agree with Mr. Edwards, and in that paper I intend giving a full description of this additional species, if it should prove to be new to science, a point I have not yet made certain of. In the event of its being new I propose to name it *Haliplus nomax*.

Holywood, Co. Down :

May 23rd, 1911.

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PRELIMINARY DIAGNOSES OF SOME NEW GENERA OF  
*BLATTIDÆ.*

BY R. SHELFORD, M.A., F.L.S.

The name *Phyllodromia* being occupied in the *Diptera*, it is evident that it cannot stand also for a genus of cockroaches. In 1903, Mr. A. N. Caudell proposed the name *Blattella* as a substitute for *Phyllodromia*, Serville, the type of the genus being the *Blatta germanica* of Linnæus. Most Orthopterists followed his lead, but I confess that I was not of the number. It had long been obvious that the genus *Phyllodromia* of Serville stood in urgent need of revision and sub-division, for it had become nothing but a dumping-ground for species which would not fit into the other genera of the sub-family. As I did not see my way clear to a useful revision of this heterogeneous assemblage of species, there appeared to be no particular object to be gained by substituting *Blattella* for *Phyllodromia* in the case of species which evidently were not strictly congeneric with *germanica*, L. The ill-considered transference of names in zoological nomenclature is a fruitful source of irritation, and many zoologists apparently fail to realize that the substitution of a new name for an old one is not always the only thing needed to reduce confusion to order. If they did realize it they would avoid such scandals as the alteration of the name of a British bat three times in less than that number of years.\*

My refusal to follow Mr. Caudell's lead evoked some rather caustic criticism on the part of that entomologist in the pages of the Proceedings of the Entomological Society of Washington, and as the Washington Entomological Society refused to give me a hearing in the pages of their publication, I may perhaps be excused for publishing in this Journal something in the nature of an apology.

As the result of examining the types of several critical species, I have come to the conclusion that *Phyllodromia*, Serv., can be split up into at least six genera, one of which is *Blattella*, Caud., and *Phyllodromia* may now safely be relinquished to the Dipterists.

The following are short diagnoses of *Blattella* and of the new genera:—

*Blattella*, Caud.

Antennæ setaceous. Tegmina and wings exceeding the apex of the abdo-

\* The nomenclature of the Mammalia is, however, in such a state of flux that no man knoweth from one day to another what the recognised scientific names of such well-known animals as, for example, the Chimpanzee and Barbary Ape, really are.

men. Tegmina with longitudinal discoidal sectors. Wings with the anterior part rather narrow, scarcely tapering to the base, ulnar vein simple or bifurcate, very rarely tri-ramose, no apical triangle. Front femora armed on the anterior margin beneath with a complete row of spines, the more distal shorter than the more proximal (Type A). Sexes similar. Ootheca coriaceous, carried by the female with the suture directed to one side.

Type of the genus: *Blatta germanica*, L.

*Neoblattella*, gen. n.

Resembles *Blattella*, but differs in the following points: the anterior part of the wing is broader, especially at the apex, and tapers towards the base; the ulnar vein of the wings is ramose. The apical triangle is inconspicuous or absent.

Type of the genus: *Blatta adspersicollis*, Stål.

*Margattea*, gen. n.

Differs from *Neoblattella* in the armature of the front femora; these are armed on the anterior margin beneath with 3 to 5 strong spines succeeded distally by a close-set row of minute piliform spines (Type B).

Type of the genus: *Blatta ceylonica*, Sauss.

*Supella*, gen. n.

Sexes dissimilar. Male rather narrow and elongate, with the tegmina and wings extending considerably beyond the apex of the abdomen. Tegmina with the discoidal sectors oblique. Wings with the ulnar vein ramose, no apical triangle. Front femora armed after Type A. Female shorter, broader, more convex, resembling certain species of *Ceratinoptera*; tegmina and wings not exceeding the apex of the abdomen; ulnar vein of wing ramose. Ootheca chitinous, carried with the suture directed upwards.

Type of the genus: *Blatta supellectilium*, Serv.

*Eoblatta*, gen. n.

Sexes similar. Form not conspicuously narrow and elongate. Tegmina and wings not exceeding the apex of the abdomen by much. Tegmina with the discoidal sectors oblique. Wings with the anterior part broad, tapering to the base, ulnar vein ramose, apical triangle inconspicuous or absent. Front femora armed after Type B.

Type of the genus: *Blatta notulata*, Stål.

*Chorisoblatta*, gen. n.

Tegmina with the discoidal sectors oblique. Wings with the anterior part broad and tapering to the base, ulnar vein ramose, a large, well-marked apical triangle. Femora armed after Type A or Type B, remaining femora strongly armed.

Type of the genus: *Blatta liturifera*, Stål.

This genus is erected for some of those species which have been included in the genus *Pseudectobia*, Sauss. The type of *Pseudectobia* is *luneli*, Sauss., a small species with the femora very sparsely armed as in the *Ectobiinæ*, and with a small and ill-defined apical triangle. It is a puzzling species, and the only specimen that I have seen is the very shattered type preserved in the Geneva Museum, but it is plainly not congeneric with *liturifera*, Stål, and indeed is more suitably placed in the *Ectobiinæ*. I must own to considerable alteration of opinions about the species of *Pseudectobia*, and I should like to cancel a good deal of that which I have written about the genus. In extenuation I can only plead that the author of the genus, de Saussure, was very vague himself about its limitations, and has brigaded under its heading a number of widely separated species belonging both to the *Ectobiinæ* and to the *Pseudomopinæ* [= *Phyllodromiinæ*]. In a more extended memoir I hope to clear up all the confusion definitely, having now examined all the types I am in a better position to do so than formerly.

A few words are necessary to explain the systematic position of the genera *Liosilpha*, Stål, and *Mareta*, Bol., both of which have by some authors been considered as synonymous with *Phyllodromia*, Serv. *Liosilpha pumicata*, Stål, the type of *Liosilpha*, is a very broad, short, and rather convex species, with the discoidal sectors of the tegmina oblique, the ulnar vein of the wings ramose, no apical triangle, and the front femora armed after Type A, the tegmina and wings do not exceed the apex of the abdomen, and the species has very much the appearance of an *Allarta*. In my opinion the genus can stand.

*Mareta*, Bol., resembles *Eoblatta*, mihi, but the marginal field of the tegmina is much broader, and the front femora are armed on the anterior margin beneath with minute piliform spines only. *Onychostylus*, Bol., is undoubtedly synonymous, the genus was based (as indeed was *Mareta*, too) on secondary sexual characters of the male sex, eminently untrustworthy characters for generic discrimination. An examination of the type, *O. unguiculatus*, Bol., shows that in all other important details of its anatomy it agrees with *Mareta*. A considerable number of species described under *Phyllodromia* I find to be true species of *Mareta*.

7, Clarendon Villas, Oxford:

June 6th, 1911.

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*Electric Light as an attraction for Beetles and other insects.*—The attractiveness of artificial light has long been known to Lepidopterists, who have found it an excellent means of obtaining species otherwise less easy of capture. So far, however, as insects belonging to other Orders are concerned, little advantage seems to have been taken of their weakness in this respect, although the knowledge of it is widespread. Here and there in Entomological literature may be found scattered references to the habit of certain species to enter houses or business premises when lit up; e.g., Canon Fowler (Col. Brit. Is., Vol. I, p. 49) names *Harpalus coleceatus*, Sturm, in this connection. As yet no attempt seems to have been made to study the subject with any degree of thoroughness, possibly through fear that the result would not justify the labour involved. This is the case with "sugaring," which does not pay in any Order except the *Lepidoptera*, the number of species of all Orders outside it known to come to sugar not being sufficient, or of such rarity, as to make it worth while to use this means to obtain them. In the following notes, which have been put together in a somewhat hasty manner, I hope to show that artificial light is not unworthy the attention of Coleopterists, and that my experiences with Electric light may prove useful in suggesting a form of collecting which is inexpensive, requires no special apparatus, may be employed within a short distance of home, and has the additional merit of being new and gloriously uncertain in its results. Soon after the electric light was introduced into this borough (Barnsley, S. W. Yorks) a specimen of *Necrodes littoralis*, L., a species I had not then met with, which had been taken at an electric lamp, was brought to me. From that time I have spent a considerable portion of the few evenings when I had the leisure to do so, in examining the insects which are attracted to the arc lamps, my observations have been mainly confined to a stretch of lamps on a straight line of road leading almost due north from the centre of the town to within one quarter of a mile of the borough boundary. The most productive spot is an obelisk which supports lamps on the northern and southern sides. Curiously enough the northernmost lamp which stands on high ground and commands a wide expanse of open country, a situation which one would expect would give it special advantages, has proved the least productive. No special time has been chosen for making a round of the lamps, opportunity has determined whether they were visited at all or not, and also if visited, the number of times. The most I have gone has been four times each way in one night; the least once only on my way home. The following is a list of the principal species met with since I commenced making observations, and must not be supposed to relate to 1910, which was a most unprofitable year for this and other kinds of collecting, although some of the species met with were not without interest. They are easily divisible into two groups:—

- (I). Those species to whom the light is the primary attraction, and
- (II). Those to whom this attraction is secondary, the primary attraction being some of the species in the first groups.

Taking this last group first, as the numbers are fewer and of lesser relative importance, it is interesting to note how quickly both bats and cats have discovered the value of the lights as points of attraction. Even in busy streets

the shrill cry of a bat is not uncommonly heard as it flies from lamp to lamp taking its toll of the insects which swarm around them. *Carabus violaceus*, L., and *C. nemoralis*, Mull., the commonest species of the genus in this district, are frequently seen at the foot of the lamps foraging within the bright circle of light. But the species which seems to have made the best use of the lamps, or, at any rate, is most regularly found at them and in large numbers is *Pterostichus madidus*, F. The rarest species hitherto met with in this group is *Cychrus rostratus*, L. It is an uncommon insect in the Barnsley district, indeed, I do not think I have seen a dozen examples all told within a three miles radius of the centre of the town. Two of these had most certainly been attracted within the circle of light at the base of the lamps, one of them being so far from a natural habitat as to represent quite a long walk, or some external aid in order to reach the thickly populated part in which it was found.

Dealing now with the first and more important group, the beetles, whose presence occasion most surprise, belong to the *Hydradephaga*, and their frequent occurrence at light has led me to the following conclusion with regard to their presence in another, and seemingly very different situation. Water beetles have frequently been observed on the glass roofs of greenhouses and other buildings, and the only explanation, so far as I am aware, which has been offered for their presence, is the plausible one that the beetles having mistaken the glass roof for a sheet of water, have fallen on it, been stunned and rendered incapable of further movement. The explanation I would substitute for this is not open to the objection which may be raised against the older one, viz., the absence of injury which one would expect to find after a fall from a height sufficient to stun the insect, and the absence of the signs usually associated with insensibility. Insects taken at electric light, or on a glass roof, after a moonlight night are usually perfect and active, but exhibit no desire to get away from the immediate neighbourhood where they are found.

*Eschua cyanea*, Mull., with the splendid powers of vision possessed by dragon-flies, once settled on an electric light standard may be approached and picked off without making the least attempt to escape. Although it has not in any way struck either the light or the standard its behaviour in no way differs from that of water beetles found at the base of the standard, or on a glass roof. It is therefore, I conclude, more probable that all these cases are due to the attractiveness of the light, in the one case of the electric lamp, and in the other of the moon reflected by the glass roof. It is unwise to reason from the specific to the general, but I would suggest that the unconsciousness of danger which these insects evince is due, not to any shock which they may have received, but to their powers of sight having been rendered ineffective by reason of their concentrating it upon the light, just as our own sight may be reduced in value by looking at any strong light. It should be noted that those lamps which give a light similar to moonlight are the ones preferred by insects, or which are most attractive to them. It is a very rare occurrence to see an insect of any kind at or near a lamp which gives rose-tinted or yellow light. This, I think, is a further confirmation of my theory.

Occasionally a species appears to swarm. One night not a specimen may be seen and the next the standards, and the circles of light at their bases, will be



swarming with *Amara apricaria*, Payk., or *Hybini ater*, De G., these two insects being the most noticeable for this peculiarity. For the first named species the date recorded for several years ranges between the last week in May to the first week in June. I have no special note about the other species, neither have I any notes as to the predominance of either sex, an omission which I regret.

The largest water beetle hitherto met with is a female specimen of *Acilius sulcatus*, L.

The *Staphylinidæ* are not as a rule much in evidence, perhaps the most interesting species being *Deleaster dichrous*, Gr., of which I took a single specimen of the var. *leachii*, Curtis.

The families more commonly represented are *Silphidæ*, *Geotrupidæ* and *Aphodiidæ*. Of the first named I have already alluded to *Necrodes*, which is a regular visitant and which I have never met with in any other way. *Necrophorus* is represented by *humator*, Goeze, *ruspator*, Er., *mortuorum*, F., and *vespillo*, L. They are named here in the order in which they commonly occur, some years, however, *vespillo* may be as common as *ruspator* is scarce.

*Silpha* is usually limited to *rugosa*, L., and *atrata*, L., but very rarely *lævigata*, F., puts in an appearance.

The species belonging to these three genera have a habit of flying round the lamp in a gradually diminishing circle, then on alighting, they rush about in a hurried, aimless manner, until apparently satisfied with their position, they settle down and remain motionless, sometimes they are still there on the following morning, hours after the light has been turned off.

The *Geotrupidæ* furnishes but one species, *G. spiniger*, Marsh., and the *Aphodiidæ* similarly with *A. rufipes*, L., which is a species I have also taken flying by moonlight. Occasionally other species of this genus may be found, but such occurrences are rare. A noteworthy visitant is *Serica brunnea*, L.

Of the other Orders I have referred above to *Æschna cyanea*, Müll., which is the only dragon-fly I have met with at light. It prefers the top of the standard about a foot away from the globe, and having settled with its head towards the light will remain for hours motionless except for an incessant but faint quivering of the wings.

*Hymenoptera* are represented by various species of the *Ichneumonidæ* of which I have no complete notes; *Diptera* mainly by *Tipulidæ* and *Anthomyidæ*. Last year the former family was very much in evidence, and particularly from July to October, was more numerously represented than any other family of insects. On the whole 1910 was a disappointing year, one missed so many of the moths which hitherto had been regular visitants, and the commoner species *Amphidasys betularia*, L., *Tryphæna pronuba*, L., *Xylophasia polyodon*, L., and *Mamestra brassicæ*, L., although often present in comparatively large numbers, were markedly below their usual abundance.

Enough has been said to prove the possibilities of the method. If systematically and continuously practised by Coleopterists situated in suitable localities and possessed of the necessary leisure there is every reason to believe that the results will justify their efforts.—E. G. BAYFORD, 2, Rockingham Street, Barnsley: April 24th, 1911.

*Additions to the Isle of Wight and Woolwich Lists of Coleoptera*—It may be of interest to note in this Magazine the capture of two additional species of *Coleoptera* to the Isle of Wight List, viz., *Galerucella californiensis*, taken by Mr. John Taylor and myself at Alverstone, also a specimen of *Tachyusa umbratica* on a wall at Sandown. I have also taken two species new to the local list as given in "Woolwich Surveys," which covers most of this neighbourhood. They are *Rhynchites nanus*, common by sweeping birch, Hayes, May 21st, and *Telephorus (Rhagonycha) testacea*, one bred from larvæ taken on Hayes Common.—STANLEY A. BLENKARN, Norham, Cromwell Road, Beckenham: June 11th, 1911.

*Barypithes pellucidus*, Boh., in the Oxford District.—I took a considerable number of this interesting weevil on the afternoon of June 1st, by sweeping short soft grass under some pine trees at Hen Wood, Berks., about three miles south-west of Oxford. It was exceedingly local, being apparently confined to a space not more than twenty yards square, beyond which only a single specimen (the first one taken) was found; and it was evidently bred on the spot, as all were beautifully fresh, some retaining their deciduous mandibles, and a good many being pallid and immature. These specimens agree in all respects with some kindly sent me as *B. pellucidus* by my friend Mr. J. H. Keys from Ivybridge, Devon (*ante*, p. 131), and with others taken at Enfield, received from Mr. C. J. C. Pool. *B. pellucidus*\* is an addition to the Berkshire County list of *Coleoptera*.

I have examined the specimens of the insect taken by Mr. Pelerin at Tottenham, (on which *B. pellucidus* was introduced as British) in the collections of the Natural History Museum and of Mr. G. C. Champion, and find they are identical with those brought forward under that name by Mr. Keys; in both collections there are examples taken by the Rev. H. S. Gorham at Eastry, which are undoubtedly conspecific with those obtained by the Rev. T. W. Wood at Broadstairs, and by myself at the Blean Woods, Kent (*ante*, p. 130) and described by Mr. Keys as *B. duplicatus*. It would thus appear that the last mentioned insect is a very local species, as yet only recorded as British from East Kent.—JAMES J. WALKER, Oxford: June 10th, 1911.

*Immigrant Insects in the Isle of Sheppey*.—This evening I noticed the first immigrant specimens of *Pyraus cardui* of the year on the Sheppey cliffs. *Plusia gamma*, in worn and faded condition, has been plentiful during the past week in meadows and on the grassy sea-walls, but at Oxford it was observed as early as May 28th. On June 13th, I took a ♀ specimen of the somewhat uncommon dragon-fly, *Brachytron pratense* (kindly named for me by Mr. A. H. Hamm), on the sea-wall between Harty and Shellness. I am inclined to believe that this is also an immigrant, the worn state of its wings indicating that it had travelled a long distance, and its flight being so feeble that I had no difficulty in catching it with my sweeping-net; moreover, it is one of the last species one would expect to find in the Isle of Sheppey, where the larger dragon-flies are as a rule very rare.—ID., Sheerness: June 17th, 1911.

*Gastrodes abietis*, L., in the New Forest.—Last Easter I spent a week-end at Brockenhurst with my friend Mr. G. Arnold, and on April 15th, while walking to Denny and Matley Bogs, we came upon a large spruce fir which had fallen across the "Drift Road." On breaking open the last year's cones at the top of the tree we found them tenanted by both our species of *Gastrodes* in some numbers, *G. abietis*, L., usually much the rarer of the two, being much more plentiful than its congener *G. ferrugineus*, L.—A. H. HAMM, Oxford: June 9th, 1911.

*Hybos culiciformis*, Fab., in Scotland.—In his "Diptera Danica," Dr. Lundbeck distinguishes clearly three European species of the genus *Hybos*. I am not in a position to express an opinion as to the correctness of the synonymy worked out by Dr. Lundbeck; but taking the species as he gives them I can record all three from Scotland. While this makes an addition to Mr. Verrall's "List" of 1901, it does not appear to make an addition to our records. Two species only are given in Mr. Verrall's "List"—*grossipes*, L., and *femoratus*, Müll.; but the third species—*culiciformis*, Fabr.—has been recorded from Aberlady as far back as 1873 ("Scot. Naturalist," Vol. ii, p. 202), and has been recorded since from Glen Falloch and Loch Long in the West of Scotland (Brit. Assoc. Handbook, 1909, p. 260). Whether these records refer to *culiciformis* as interpreted by Dr. Lundbeck I am unable to say. In my collection *culiciformis* and *grossipes* were mixed together; Schiner's remark under the latter species: "Genitalien des männchens stark verdickt" (a character which applies only to *culiciformis* as here recorded) being partly responsible for my mistake.

The three species are quite distinct, as the specimens (comprising both sexes of each species) now before me show, all agreeing perfectly with the descriptions given by Dr. Lundbeck. I have *culiciformis* from Loch Tay, Aberfoyle, and Comrie (Perthshire); Edinburgh, Glencorse, Arniston, and Polton (Midlothian); and Aberlady (Haddington). The dates of capture range from July 2nd to September 11th (1903-1907); and most of the captures were made by my friend the Rev. James Waterston, B.D., B.Sc. *Femoratus* has occurred in most of the foregoing localities, and appears to be equally common. *Grossipes* I have from only Aberfoyle, Blairgowrie, and Comrie (three ♂♂ and one ♀ in all); it thus appears to be a rarer species than its congeners.—A. E. J. CARTER, Blairgowrie, Perthshire: 22nd May, 1911.

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## Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, April 27th, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. P. A. Buxton, of Tonbridge, was elected a Member.

Mr. Tonge exhibited a pupa case of *Egeria andrenæformis* as found *in situ* projecting from the burrow after the emergence of the imago. He had found four such cases in nature. Mr. Kaye, a similar exhibit with the living imago

which had emerged in confinement. Mr. R. Adkin, a remarkable gynandrous specimen of *Bombyx quercus*, with left antenna and wings ♂ and right antenna and wings ♀, but of the ♂ colour, from the Capper collection. Mr. Newman, a larva of *Callimorpha dominula*, black in colour without the yellow markings. Mr. Andrews, two examples of the recently identified Dipteron, *Hilara æronetha*, from North Kent. Mr. St. Aubyn, photographs of *Lepidoptera* at rest. Mr. Gough, a dwarf example of *Celastrina argiolus*. Messrs. Edwards and Turner, several species of *Papilio* from North America, of the *machaon* and *glaucus* groups. Mr. A. E. Gibbs gave an account of the arrangements for the S. E. Union of Scientific Societies Congress at St. Albans in June. Mr. Main showed a series of lantern slides illustrating his observations on the life-history of the common myriapod, *Lithobius forficatus*.

*Thursday, May 11th.*—The President in the Chair.

Messrs. Harrison and Main exhibited a long series of *Aplecta nebulosa* and its varieties, a bred series from *robsoni* ♂ and *thompsoni* ♀ which did not conform to the anticipated Mendelian proportions. 26 per cent. were grey, 42 per cent. *robsoni*, and 32 per cent. *thompsoni*, instead of 50 per cent. *robsoni* and 50 per cent. *thompsoni*. Messrs. R. Adkin, Harrison and Main, and L. W. Newman, hybrids of *Biston hirtaria* and *Nyssia zonaria*. It was stated that ♀s had not yet been obtained in the cross *B. hirtaria* ♂ and *N. zonaria* ♀. Mr. Adkin read detailed notes on the characteristics of the hybrid specimens shown by him. Mr. Gough, specimens of the *arete* form of *Aphantopus hyperanthus* from Kent and Surrey, together with intermediate and type forms.

*Thursday, May 25th.*—Mr. R. ADKIN, F.E.S., in the Chair.

Mr. Hugh Main exhibited a living ♀ scorpion received from the West Indies, with two young ones on its back, where it was stated the parent deposited them, and where they usually remained for two or three weeks. Mr. W. West (Greenwich), called attention to the Society's collection of *Coleoptera*, which had now been completely reset and cleaned, and to which Messrs. Ashby and Ashdown had recently made numerous additions. Mr. H. Moore, some *Coleoptera* received alive from the Orange Free State. Mr. R. Adkin, a bred series of *Nyssia zonaria* reared from Wallasey, and called attention to the "laying over" of numerous pupæ for two winters and to the much paler general coloration than usual of a number of the specimens. Mr. Blenkarn, the Coleopteron, *Myrmedonia funesta*, and the ant it cohabited with, *Formica fuliginosa*, from Sandown.—HY. J. TURNER, *Hon. Secretary*.

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ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, May 3rd, 1911.*—The Rev. F. D. MORICE, M.A., President, in the Chair.

The President announced the death of two Fellows of the Society, the Rev. Canon Cruttwell and Mr. W. A. Rollason.

The President informed the Society that the authorities of the Science Museum had persuaded the Government to allow them to take a portion of the land belonging to the Natural History Museum at South Kensington, for the purpose of erecting new buildings of their own, thereby precluding much-needed

additions to the Natural History Museum, especially in the Entomological Department, and on the motion of Mr. G. T. Bethune-Baker, seconded by Dr. Dixey, a resolution protesting against this appropriation was unanimously passed, explanations of the disastrous consequences to the Museum having been given by Mr. C. O. Waterhouse and Rev. G. Wheeler, in addition to the proposer and seconder. Mr. H. Rowland-Brown then moved that "If a deputation be appointed to wait on Mr. Runciman with regard to this matter, the Officers and Council of the Entomological Society desire to be represented on it." This was seconded by Mr. Bethune-Baker and carried unanimously, and Mr. C. O. Waterhouse said that he would see that it was made known in the right quarters.

Commander J. J. Walker exhibited, on behalf of Mr. Geo. Brown of Coatbridge, Lanarkshire, living specimens of *Helophorus tuberculatus*, Gyll., hitherto exceedingly rare as a British insect. These were taken by Mr. Brown at the end of April, walking about on bare dry peaty soil on the moors near Coatbridge. Mr. O. E. Janson, a new and remarkable Lamellicorn beetle, belonging to the *Cremastochilides* group of the *Cetoniidae*, in which the anterior tarsi were unmistakably six-jointed. The specimen was received in a collection made by Dr. Bayon in Uganda, and sent to him for determination by Dr. Gestro, the Director of the Civic Museum, Genoa. Mr. C. O. Waterhouse suggested that it was probably an abnormal specimen, six-jointed tarsi being so far unknown in Entomology. Mr. G. C. Champion expressed concurrence in this opinion. Mr. A. Harrison exhibited a drawer of Delamere Forest *Aplecta nebulosa*, bred last year from var. *robsoni* ♂ and var. *thompsoni* ♀ by himself and Mr. H. Main. He said: "Only fifty moths were bred, 26% of the grey form, 42% of *robsoni* and 32% of *thompsoni*. This result quite negatives our idea that the form *robsoni* was a heterozygote, or hybrid (so called) and that the grey form and *thompsoni* were homozygotes, or pure. We had been led to this conclusion by the results previously reported as being obtained by ourselves and by Mr. Mansbridge. From a large brood, both parents *robsoni*, we had previously bred 25% grey, 51% *robsoni*, and 24% *thompsoni*, obviously Mendelian proportions. From several broods, both parents grey, we had bred only the grey form. From the grey form crossed with *thompsoni*, Mr. Mansbridge had obtained only *robsoni*, and from the grey form crossed with *robsoni* he had bred 50% *robsoni* and 50% grey. The results obtained last year show that the problem is not so simple as we had supposed, and that it will require further experiments before it can be solved." Mr. Donisthorpe, three ♀ ♀ of *Lasius mixtus*, Nyl., a race of *L. umbratus*, Nyl., and a ♀ of the latter for comparison. He remarked that there were only two previous records of its capture in Britain. He pointed out the difference between this race and *umbratus*, and said it was probably widely distributed. He added that Mr. Evans had sent him ♀ ♀ and ♂ ♂ from the Isle of Moy to name. Mr. H. Rowland-Brown brought for exhibition examples of *Agrüdes thetis* (*bellargus*) ab. ♀ *coelestis*, Obthr., taken last August at Dompierre sur-Mer, Charente-Inférieure. He said that so far as is known at present, this brilliant form of the blue ♀ is confined in Western Europe to the west and south-west of France; roughly speaking between the valley of the Loire and the Gironde, where it occurs locally not infrequently; the blue

form of *A. coridon* ♀, var. *syngrapha*, also being found in the same calcareous region. Mr. W. G. V. de Rhé-Philippe exhibited and described several new Indian butterflies, viz.:—*Euphœa mulciber*, var. ♂ *duarseri*; *Charaxes raidhaka*, ♂; *Euripus consimilis*, new dimorphic ♀ *torsa*; *Cyaniris parishii*, ♂; *Nacaduba ardates*, var. *dima*, ♂; and an aberration of *Terias silhetana*. Mr. H. M. Edleston, three generations of *Hybernia marginaria*, being the result of a pairing between a dark ♂ and ♀ taken wild in Epping Forest in 1908. The 1909 brood did not vary much from their parents. The 1910 brood produced specimens with dark margins, and three unicolorous males. The 1911 brood produced specimens with lighter margins and dark interiors, but no unicolorous specimens. The darkest males and females were paired in each case. These dark forms have only appeared in Epping Forest the last few years. Mr. G. C. Champion exhibited living specimens of *Corymbites purpureus* and *Morimus lugubris* taken by Dr. Chapman at Amélie-les-Bains, Pyrénées Orientales. Mr. L. W. Newman showed a stick of *Salix caprea* containing larvæ supposed to be those of the "Wood Wasp." He pointed out that the larvæ make caps like *Aegeria andrenæformis*, and that the cocoon is exactly like that of a "clear-wing," and the workings very like those of *Aegeria*. A discussion arose on this exhibit, in which the President, Mr. Donisthorpe, Dr. Chapman, and other Fellows took part, and in which widely different views were expressed even as to the order to which the larvæ in question belonged. Mr. A. G. Scorer exhibited a specimen of *Hyloicus (Sphinx) pinastri*, of whose British origin he had no doubt. It was caught near Aldeburgh, and another specimen was taken at the same time, but this he had not seen. He also exhibited a gynandromorphic specimen of *Gonepteryx rhamni*, taken by himself at Salisbury, on September 2, 1894. It was evenly divided, the right side being ♀ and the left ♂. Dr. K. Jordan, some insects from India in one of Mr. Newman's relaxing boxes, which had remained throughout their journey as fresh as if just captured and were in perfect condition for setting. He also exhibited the Saturniid moth, *Dysdamonia kadeni*, in its resting attitude. The hindwings are for the greater part concealed under the forewings, only the anal area and the tail projecting. The abdomen being bent towards the left side, the insect in this attitude resembles a crumpled dry leaf, and recalls the much smaller Bombycid—also exhibited—*Sorocaba anomala*, which, as is well known, assumes a similar attitude when at rest. He further exhibited a species of *Cosmosoma*, Family *Syntomidæ*, partly covered with a white wool. According to the collector (A. H. Fassl), "the insect when touched ejects from a fold on the underside of the abdomen a white wool, which completely envelops the specimen." The hitherto unknown female of *Ogyris meeki*, Roths., a Lycaenid from New Guinea was likewise shown, together with the male and several *Hypochrysois*. Commander Walker communicated the following papers:—"Some African and a few Australian Aculeate Hymenoptera in the Oxford Museum," by the late Col. Bingham, with a prefatory note by Prof. Poulton; communicated by Rowland Turner. "A contribution to the Life History of *Hesperia (Syrichtus) sida*," by Harold Powell. "Biological Notes on Indian Pierine Larvæ," by Capt. Frazer.

CONVERSAZIONE, Wednesday, May 17th, 1911, in the Rooms of the Linnean Society, Burlington House, W. (by kind permission of the President and Council). President, Rev. F. D. MORICE.

The Exhibitions were as follows:—In the Gallery of Library—Mr. W. J. Kaye, Geographical and other forms of *Heliconius melpomene* and *H. phyllis*; Rev. George Wheeler, Butterflies of Eclépens; Mr. G. R. Bullock, Living Stick Insects; Mr. Stanley Edwards (*a*) Butterflies of the genera *Morpho* and *Calligo* (*b*) Exotic *Coleoptera*; Mr. L. W. Newman, Living larvæ and pupæ of British *Lepidoptera*. In the Library—The Hon. N. C. Rothschild and Dr. Karl Jordan (*a*) Gynandromorphs, (*b*) chiefly of Exotic Butterflies: *Papilionidæ*, from New Guinea, including the magnificent *Ornithoptera alexandrae*, Roths., *O. tithonus*, De Haan, *Schænbergia paradisea*, Staud., and *S. meridionalis*, Roths.; The Linnean Society, Relics of Linneus; Mr. James J. Joicey, Butterflies and Moths; Dr. G. B. Longstaff (*a*) Butterflies from Anglo-Egyptian Sudàn, (*b*) Butterflies common to England and the Sudàn, (*c*) New Zealand Moths, (*d*) Moths common to England and New Zealand; Mr. C. P. Pickett, Results of 13 years inter-breeding *Agarona prunaria*; Miss Margaret Fountaine, the genus *Charaxes*; Lord Avebury, F.R.S., Instances of Mimicry; Prof. Selwyn Imag, Old Entomological Books of Interest; Lord Avebury, F.R.S., Elytron of Beetle (*Pachyrrhynchus*) under the microscope; Mr. H. M. Edelsten, The genera *Leucania* and *Nonagria*; Prof. E. B. Poulton, F.R.S., and Messrs. C. A. Wiggins, W. A. Lamborn, and E. G. Joseph, Recent Observations in Mimicry in *Lepidoptera*; Mr. H. W. Andrews, Some Examples of the Family *Syrphidæ*; Mr. W. C. Crawley, Observation Nests of British Ants with Guests; Mr. H. St. J. K. Donisthorpe, (*a*) Observation Nests of British Ants with Guests, (*b*) Ants and Myrmecophilous Insects, (*c*) Myrmecophilous *Acari* and *Coccidæ* under microscope; Mr. F. Enock, Photo-micrographs of New Species of British *Myrmididæ*; Messrs. A. Harrison and H. Main (*a*) *Boarmia repandata*, local forms, (*b*) Melanic forms of some common Moths, (*c*) *Pieris napi* and var. *bryoniae* and hybrids; Mr. James Edwards, Photo-micrographs of Beetles; Dr. T. A. Chapman, The last three New European Butterflies; Mr. R. M. Prideaux, A Method of Transferring the Scales of *Lepidoptera*; The Entomological Society, The Obligation Book of the Society, with the Signatures of Queen Victoria and the Duchess of Kent, and many others of interest; The Hon. N. C. Rothschild and Dr. Karl Jordan, Enlarged Model of the Tropical Plague Flea (*Xenopsylla cheopis*); Mr. A. W. Bacot, Living Fleas, with ova, larvæ and cocoons; Mr. H. Main, Stereoscopic photographs; Rev. George Wheeler, Water-colour Drawings of Swiss Butterflies; Mr. H. Eltringham, the Original Drawings for the Plates of "African Mimetic Butterflies"; Mr. F. Enock, new Species of British *Myrmididæ*, under microscope; Mr. F. W. L. Sladen, Living Workers of Sladen's British Golden Bee; Mr. Stanley A. Blenkarn, British *Coleoptera*; Mr. B. C. S. Warren, *Lowcia alciphron* var. *gordius*, ab. *midas*, both sexes; Mr T. A. Lofthouse, Local forms of *Lepidoptera*.

The following short Lectures were delivered in the Meeting Room:—At 9, Recent Discoveries in Insect Mimicry: Prof. E. B. Poulton. At 10, The Tiger Beetle, *Cicindela campestris*: Mr. F. Enock. Both lectures being illustrated with the lantern.—Hon. Secretaries: COM. J. J. WALKER, R.N., and REV. GEORGE WHEELER, Sec. of the *Conversazione Committee*.

A REVISION OF THE BRITISH SPECIES OF *LIODES*, LATREILLE  
(*ANISOTOMA*, BRIT. CAT.).

BY NORMAN H. JOY, M.R.C.S., F.E.S.

Probably no genus, with the exception of *Trichopteryx*, is less understood, and therefore more neglected by British Coleopterists than *Liodes*, Latr. (*Anisotoma*, Ill.), and it is certainly one of the most difficult on the list. I have been specially interested in it for years, but it was with considerable hesitation that I determined to make a table of the British species and thoroughly review the status of each. This would have been impossible, but for the generosity of Messrs. Champion, Donisthorpe, Commander Walker, and several others, who have allowed me to retain for months all the specimens which I have required from their collections, so that I have had ample time to examine over three hundred specimens of such a difficult species as *L. dubia*. Messrs. Champion and Donisthorpe have also kindly helped me in many other ways. I have to thank Dr. Fleischer for identifying many specimens, and it is with great regret that I find I must disagree with several of his conclusions (in cases where I believe I am in as good a position as he to judge), in spite of his much longer experience of the genus.

One of the causes of difficulty in the genus is the great variety in size of the individuals of a given species, and a corresponding variation in shape, the smaller specimens generally appearing wider in proportion to their length than the larger. Then the old question as to whether a form should be regarded as a species or a variety crops up. But this in many cases must always remain a mere matter of opinion, at any rate until breeding experiments are carried out, and the full life-history of each form is known. Dr. Fleischer regards *L. obesa*, *L. subglobosa*, and several other forms as varieties of *L. dubia*. Having read his paper on *L. dubia* and its varieties (Wien. Ent. Zeit., 1906, p. 201) I feel bound to follow him, although I do not consider that this opinion is necessarily final. Two forms could hardly look more distinct than *L. dubia* v. *obesa*, and *L. dubia* v. *bicolor*, yet all the intermediate forms can be found. Dr. Fleischer lays a good deal of stress on the fact that he has taken all the forms in one spot, but I do not think that this is of much importance in a genus like *Liodes*, where many quite distinct species are often found in company. Then again the fact of the ædeagus being of an identical shape in all the forms under consideration must not be over-rated, as this organ is of



a comparatively simple structure in this genus. I find that in *Heterothops binotata* and *H. prævia*, which are without question abundantly distinct species, the ædeagus is of precisely the same structure, and I expect there are many such instances. In the British list there is no parallel instance of such great variation of form in one species as in *L. dubia*, and it is not approached in any other members of the same genus.

Of the specimens which I submitted to Dr. Fleischer for identification he returned four as *L. brunnea*, Sturm. I had regarded these four as belonging to two species—a pair of each—and I can now definitely state that this is the case, as, besides several marked distinctions between them, which I pointed out to Dr. Fleischer when sending them to him, I now find that there is a difference in the structure of the ædeagus. One of these is no doubt the true *L. brunnea*, the original description of which is of little help, as it might apply to many species of *Liodes*. I think we shall be quite justified in regarding the specimens recorded by Rye under this name (*Ent. Mo. Mag.*, vol. ix, p. 135) as rightly identified, at any rate he shows them to be the *L. brunnea* of Erichson. Mr. Champion has lent me one of these specimens, which was taken by Lawson at Scarborough. If we regard this as settled, the identification of the second species is not difficult. It matches the type of *L. algerica*, Rye, which is in Mr. Champion's possession. I think it is probably not the species which is known on the Continent as *L. algerica*, although Dr. Fleischer saw Rye's type some years ago. Mr. Donisthorpe's specimen (*Ent. Rec.* xxiii, p. 44) taken at Oxford last year, which was named *L. algerica* by Dr. Fleischer, is a small *L. dubia*.

I have the pleasure of adding another species, not only to the British list, but also to science, under the name *L. stenocoryphe*. I have described it from a pair taken by Mr. W. E. Sharp last year at Forres, Inverness-shire. It is a most striking insect, related to both *L. triepkei* and *L. curta*, but is abundantly distinct.

Twenty-five species have been included in the following table, one more than the total in Messrs. Beare and Donisthorpe's catalogue. Besides *L. algerica* and *L. stenocoryphe*, *L. lucens* and *L. flavicornis* have been added since the catalogue was published. I have deleted *L. obesa* and *L. similata*. *L. obesa*, as explained above, is considered a variety of *L. dubia*. *L. davidiana* must also be regarded as a variety of the same species, far removed from *L. obesa*.

I discuss below my reasons for considering *L. similata* as a

variety of *L. badia*. To prevent possible confusion, however, I should like to draw attention to my note on this form in Ent. Mo. Mag., ser. 2, vol. xxii, p. 110, where I point out that the insect long known under the former name on the Continent is a very different species, and where I propose the name *L. fleischeri* for it.

The specimens of *Liodes* recorded by Rye (Ent. Ann. 1872, p. 66) as having been taken by Dr. Sharp in Scotland, and named by the latter "with tolerable certainty" as *L. scita* are *L. dubia*. There is no reason to doubt that the specimen from near York introduced by Rye "with some slight reserve" as *L. scita*, is the same form of *dubia*. The species we have hitherto known as *L. nigrita*, Schmidt, is what is now known on the Continent as *L. scita*, Er. It is placed by Dr. Fleischer in a sub-genus (*Trichosphæarula*) by itself on account of the structure of the male genitalia.

I am retaining the name *L. anglica*, Rye, instead of *L. oblonga*, Er., but whether this is really correct I have not been able to ascertain to my satisfaction. At any rate, as I have pointed out before (Ent. Mo. Mag., ser. 2, vol. xx, p. 219), this form is quite distinct from *L. cinnamomea*.

I think any one with even a small knowledge of this genus will admit that the main division into two groups according to the breadth of the club of the antennæ, and the comparative breadth of the last joint, is quite comprehensible. If the antennal club of *L. calcarata* or *L. triepkei* be compared with that of *L. ovalis* or *L. cinnamomea*, a marked difference will be seen at once. In the first group the club is short and broad, the last joint being much narrower than the penultimate. In the second group it is longer, narrower, and generally looser, and the last joint is sometimes quite as broad as the penultimate, and can never be said to be "much narrower." *L. lunicollis* is the only species with an intermediate form of club; this is somewhat elongate, and not very broad, but the last joint is distinctly narrower than in other members of the narrow-clubbed group. *L. dubia* v. *obesa* has a rather broad club, but the last joint is quite as broad as the penultimate. In *L. curta* v. *donisthorpei* the last joint is comparatively broader than in other members of its group, but the club is obviously one of the broad ones. It must be remembered that the club of the antennæ is flattened, not cylindrical in section, and that these points are not seen unless it is examined from one of the sides. In specimens set with the antennæ gummed down they are not seldom found on their edge.

Little notice has been taken of the breadth of the anterior tibiae, as it varies a good deal in individual specimens. However, such species as *L. triepkei*, *L. ciliaris*, and *L. pallens* have conspicuously broader tibiae than *L. ovalis* and *L. scita*.

The situation of the base of the thorax is best looked for by examining the beetle with the light coming from the sides and shining full on the basal border, so that the actual margin can be clearly seen. If examined with the insect facing the light the basal margin is not defined, and sometimes the base of the elytra is indistinctly seen through the base of the thorax, making the latter appear sinuate.

By far the best method of judging of the shape of the thorax is by examining it under a low power of the Zeiss "duplex" microscope. If looked at with a small hand lens of short focal length directly from above, the middle of the thorax being in the centre of the field of vision, the rounding of the sides of the thorax, and the contraction towards its base, are very imperfectly seen. Thus *L. dubia* v. *subglobosa* appears to have the thorax broadest at the base, whereas the "Zeiss" shows the greatest breadth to be just before the base. With the hand lens the best results are obtained by examining one side-margin of the thorax *slightly* from the side.

As in my table of the British species of *Colon*, I have avoided reference to male characters, and have given these in a separate key. The only species I have not been able to examine myself is *L. clavicornis*. Dr. Sharp tells me that the original and only British specimen is no longer in his collection.

#### TABLE OF THE BRITISH SPECIES OF *LIODES*.

1. Club of antennæ broad, last joint much narrower than penultimate...	2.
— Club of antennæ narrow and more elongate, last joint not or scarcely narrower than penultimate (see also <i>L. bunicollis</i> ).....	14.
2. Side margins of elytra with distinct outstanding hairs .....	24.
— Side margins of elytra without distinct outstanding hairs .....	3.
3. Interstices of elytra transversely striate.....	<i>L. rugosa</i> , Steph.
— Interstices of elytra not transversely striate .....	4.
4. Thorax broadest at base, the base itself truncate .....	12.
— Thorax broadest before base .....	5.
5. Base of thorax distinctly sinuate near posterior angles .....	6.
— Base of thorax truncate, or extremely slightly sinuate before posterior angles.....	8.
6. Head large; thorax broadest near middle; legs and antennæ shorter; striæ of elytra finely punctured .....	<i>L. triepkei</i> , Schm.

- Head smaller; thorax broadest near base; legs and antennæ longer; striae of elytra longer ..... 7.
7. Club of antennæ broader, dark, at least on the outer side; base of thorax more strongly sinuate; striae of elytra more closely punctured; underplate of posterior femora in ♂ with a large sharp lobe-like tooth at apex; in ♀ with a distinctly angled lobe even in very small undeveloped specimens.....*L. calcarata*, Er.
- Club of antennæ narrower, entirely reddish-testaceous; base of thorax less strongly sinuate; striae of elytra more remotely punctured; underplate of posterior femora in both sexes broadly rounded...  
*L. macropus*, Rye
8. Head large; club of antennæ dark, very broad, last joint very small in proportion to penultimate; thorax strongly punctured, much widened at sides and contracted behind, broadest about middle; striae of elytra very strongly punctured; last joint of posterior tarsi sub-cylindrical.  
...*L. stenocoryphe*, sp. nov.
- Head smaller; club of antennæ narrower, last joint broader in proportion to penultimate; striae of elytra much less strongly punctured ... 9.
9. First joint of posterior tarsi strongly widened at apex; club of antennæ dark; thorax as in *L. stenocoryphe* .....*L. curta*, Fairm.
- First joint of posterior tarsi sub-cylindrical .....10.
10. Size larger (length, 3·5—4·5 mm.); club of antennæ dark; thorax not much rounded at sides, strongly punctured.....*L. silcsiaea*, Kr.
- Size smaller (length not exceeding 3—4 mm.); club of antennæ reddish-testaceous; thorax finely punctured.....11.
11. Posterior angles of thorax very blunt; 2nd to 4th striae of elytra straight; antennæ and legs longer, tibiæ narrow ..... *L. lunicollis*, Rye
- Posterior angles of thorax obtuse, but well marked; 2nd to 4th striae of elytra sinuate; antennæ and legs shorter, tibiæ broad...  
*L. pallens*, Sturm
12. Average size smaller, form more convex; club of antennæ testaceous; legs short and stout .....*L. badia*, Sturm
- Average size larger, form less convex; club of antennæ dark; legs long and slender .....*L. litura*, Steph.
13. Average size larger (length, 3·5—6 mm.); form long oval; elytra longer in proportion to thorax .....14.
- Average size smaller (length, 2·5—4·5 mm.); form short oval; elytra shorter in proportion to thorax .....16.
14. Club of antennæ black; thorax broadest behind middle, anterior angles (viewed from the sides) rather sharp right angles...*L. cinnamomea*, Pz.
- Club of antennæ concolorous with, or slightly darker than, rest; thorax broadest at middle; anterior angles obtuse and blunt.....15.
15. Base of thorax truncate; two outermost striae of elytra incomplete at base; side border of elytra strong and entirely visible from above.  
...*L. anglica*, Rye

- Base of thorax slightly sinuate; two outermost striæ of elytra complete at base; side border of elytra very narrow, not or scarcely visible in the middle if viewed from above.....*L. lucens*, Fairm.
16. Thorax broadest at the actual base; posterior angles sharp; striæ of elytra very finely and not closely punctured; anterior tibiæ narrow .....17.
- Thorax broadest before the base, and from thence parallel-sided or contracted to the base; posterior angles blunt .....20.
17. Interstices of elytra with cross-striation .....18.
- Interstices of elytra without cross-striation.....19.
18. Form narrower; club of antennæ dark; posterior femora simple in both sexes..... *L. parvula*, Sahlb.
- Form broader; club of antennæ light; posterior femora with a sharp tooth in ♂, and distinctly angled beneath in ♀ .....*L. flavicornis*, Ch. Bris.
19. 3rd-5th striæ of elytra strongly sinuate ..... *L. scita*, Er.
- 3rd-5th striæ of elytra not sinuate.....*L. ovalis*, Schm.
20. First joint of posterior tarsi long, tarsal claws very small; club of antennæ loose, testaceous; striæ of elytra with very closely set and somewhat irregularly placed punctures; thorax parallel-sided before base...  
*L. brunnea*, Sturm
- First joint of posterior tarsi much shorter, tarsal claws larger .....21.
21. Size larger; colour entirely pitchy brown or pitchy black; thorax more strongly punctured; club of antennæ only slightly darker *L. picea*, Ill.
- Size smaller; colour ferruginous, or if pitchy ferruginous, with the thorax darker than the elytra; thorax less strongly punctured .....22.
22. Antennæ very short; club very large and broad with last joint quite as large as penultimate..... *L. clavicornis*, Rye
- Antennæ moderate, club narrower..... 23.
23. Size larger; thorax less strongly contracted behind, more strongly and closely punctured; shape and colour very variable .....*L. dubia*, Kug.
- Size smaller; thorax more strongly contracted behind, less strongly and more diffusely punctured; club of antennæ not dark *L. algerica*, Rye
24. Side margin of elytra set with long hairs; thorax broadest just behind middle; colour lighter .....*L. ciliaris*, Schm.
- Side margins of elytra set with short hairs; thorax broadest just before base; colour darker.....*L. furva*, Er.

In his "Coleoptera of the British Islands," vol. III, p. 34, the Rev. W. W. Fowler describes the structure of the posterior femora in the males of *Liodes*. The posterior border of the femur is composed of two plates, between which the tibia lies when fully flexed. The upper plate terminates at the apex in a small rounded lobe, which is of much the same shape in every member of the genus. The under plate

varies very much in different species, sometimes corresponding very nearly to the upper plate, in other species being broadened into a large tooth-like lobe at the apex.

TABLE OF MALE CHARACTERS.

1. Anterior and middle tarsi very strongly dilated ..... *L. silesiaca*
  - Anterior and middle tarsi slightly or moderately dilated ..... 2.
  2. Posterior tibiae almost straight or slightly curved or bent.....3.
  - Posterior tibiae strongly bent or curved .....5.
  3. Inner border of posterior tibiae evenly curved throughout.....4.
  - Inner border of posterior tibiae slightly bent at the junction of middle and lower thirds; under plate of posterior femora ending in a small lobe or small right-angled tooth at apex... *L. picea*, *L. furva*, *L. dubia*, *L. algerica*
  4. Under plate of posterior femora simple... *L. parvula*, *L. badia*, *L. ciliaris*
  - Under plate of posterior femora toothed at apex...  
*L. lunicollis*, *L. flavicornis*, *L. scita*
  5. Posterior tibiae evenly curved throughout or bent near middle.....6.
  - Posterior tibiae with a double curve, abruptly bent near apex .....8.
  6. Posterior femora lobed or toothed in middle, feebly so in small specimens..... *L. cinnamomea*, *L. anglica*, *L. lucens*
  - Posterior femora not lobed or toothed in middle .....7.
  7. Under plate of posterior femora with a large, sharp, tooth-like lobe at apex  
...*L. calcarata*
  - Under plate of posterior femora simple, or with a very small blunt lobe at apex .....*L. litura*, *L. ovalis*, *L. rugosa*, *L. macropus*, *L. brunnea*.
  8. Under plate of posterior femora ending in a small lobe at apex, somewhat corresponding to that at apex of upper plate...  
*L. stenocoryphe*, *L. curta*, *L. dubia*.
  - Under plate of posterior femora simply rounded, but slightly prominent...  
*L. triepkei*, *L. pallens*.
- (*L. clavicornis* not included)

It seems advisable to give more detailed descriptions of several species of the genus, but some appear to me to be sufficiently well known, and so are not included below.

*L. calcarata*.—This is by far the commonest member of the genus, and is extremely variable in size and general appearance. It is not, however, difficult to recognise by the characters given in the table. The club of the antennæ varies from almost black to reddish testaceous, with the outer side of each joint fuscous, this latter being perhaps the commonest form. It must be remembered that the antennæ are sometimes turned over in setting, so that the dark portion appears on the inner side. Dr. Fleischer has described a form (*ruficornis*) with entirely light antennæ. Every British specimen I have examined has at least some trace of fuscous on the club. Very small examples (length 2 mm.) generally have the posterior border of the thorax very distinctly sinuate.

**NOTE.**—Subscriptions for 1911 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

All Communications and Subscriptions during July and August will be attended to by Commander J. J. WALKER, R.N., Aorangi, Lonsdale Road, Summertown, Oxford.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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
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and the club of the antennæ very broad. In well developed males the tooth on the posterior femora is very large and sharp, but sometimes in the female also it is exceptionally conspicuous and acuminate. At one time I thought these specimens were undeveloped males with almost straight posterior tibiæ, but dissection proved them to be females. The thorax is nearly always rather darker than the elytra, and may be much more so (*v. nigrescens*, Fleisch.), or even almost black.

*L. triepkei*.—This is one of the most distinct species, recognised by its broad rounded form, very large head, short antennæ and legs, and strong sinuation at the sides of the base of the thorax. Small specimens of under 2.5 mm. occur, which seem to be a stumbling-block to many, but there should be no difficulty about them, as in these all the distinguishing points appear to be accentuated. *L. triepkei* is not uncommon; it is generally found, I believe, under fir trees, and has been taken in great abundance at Woking.

*L. macropus*.—The ♂ of *L. macropus* differs markedly from the same sex of *L. calcarata*, but the ♀ ♀ of the two species are sometimes extremely difficult to differentiate. The colour of the antennal club seems constant, although it is a little darker than the rest of the antennæ; it is, however, never fuscous or parti-coloured as in *L. calcarata*. The lower plate of the posterior femora always shows traces of an angle in *L. calcarata*, but is quite rounded in *L. macropus*. The punctures of the striæ of the elytra are placed farther apart in *L. macropus*, and their shape is slightly different. The latter species generally has the third joint of the antennæ more evenly cylindrical, whereas in *L. calcarata* it is distinctly narrowed at the base. *L. macropus* is a very rare species, which, as far as I know, has only been taken in Kent, Surrey, Hants and Berks.

#### L. STENOCORYPHE, *sp. nov.*

Oblong-ovate, ferruginous with head and thorax darker; head large, almost as large as in *L. triepkei*, rather closely and distinctly punctured, with four larger punctures on forehead; antennæ long, ferruginous with the club dark, the latter broad, as broad as in *L. calcarata*, but with last joint much narrower; thorax a little narrower than elytra, broadest at the middle, with the sides strongly contracted before and behind, base with an extremely shallow sinuation at sides in ♂, truncate in ♀, posterior angles obtuse, strongly and rather closely punctured; elytra twice as long as thorax, not much rounded at sides, striæ very strongly and closely punctured, more strongly than in *L. calcarata*, interstices finely but distinctly punctured, alternate ones with a few larger punctures; legs elongate, tibiæ narrow, tarsi long and slender. ♂. Under plate of posterior femora with a very small blunt lobe at the apex corresponding with the lobe on the upper plate; tibiæ with a double curve, and inwards near the apex as in *L. curta*;

ædeagus broad, parallel-sided, except for a slight constriction in middle, apex evenly rounded, quite obtuse, side margins somewhat thickened. Length 2.75 mm.

From *L. calcarata* and *L. triopkei* the present species is distinguished by its practically truncate base of thorax, smaller last joint of antennæ, and more strongly punctured striæ of elytra; and from the former also by its larger head, more rounded sides of thorax, and very different ♂-characters; and from the latter by its longer legs and narrower tibiæ. From *L. curta*, the only other nearly allied British species, it may be known by its larger head, much narrower last joint of antennæ, more strongly punctured striæ of elytra, and longer and more slender first joint of posterior tarsi. From *L. distinguenda*, Fairm., which also has a large head and truncate base of thorax, it differs in its larger size, the longer antennæ, the more contracted thorax, the more strongly punctured elytral striæ, the longer legs, and the much more bent posterior tibiæ in the ♂.

The ædeagus, too, is very distinct; it is broader and more parallel-sided, and more rounded at the apex than in any of the above species.

Mr. W. E. Sharp took a pair of this interesting insect last year at Forres, Inverness-shire. I submitted the ♂ to Dr. Fleischer, who returned it as *L. calcarata* v. *nigrescens*, in spite of the markedly different characters given above.

*L. curta*.—This is a rather broad species, with the sides of the thorax strongly rounded in the middle, and distinctly contracted to the base in typical examples. The elytra are nearly parallel-sided for about two-thirds of their length, and sometimes appear to be dilated behind; in small specimens (and particularly in the var. *donisthorpei*) they are shorter and more rounded; the punctures of the striæ are not large, but are deep and placed very close together. The colour is dark ferruginous, with the thorax generally darker. The club of the antennæ is hardly as broad as in the other members of the group, and the last joint is not quite so narrow in proportion, so that this species may be mistaken for one of the second group. It most closely resembles *L. picea*, the distinguishing characters of which are given below, and differs from dark specimens of *L. dubia* in having the thorax more strongly rounded at the sides and contracted behind, and more strongly punctured; the tarsi are thicker, and the first joint of the posterior pair is more strongly dilated at the apex. *L. curta* appears to be not rare in the Oxford district and near Hartlepool, where the type form occurs, as well as the var. *donisthorpei*.

*L. silesiaca*.—A large species of a long oval form, most closely

related to *L. curta*; the thorax, however, is less rounded at the sides and contracted behind; the striae of the elytra are more strongly punctured; the tibiae are more dilated; and the first joint of the posterior tarsi is much longer and more cylindrical, a character which will also distinguish dark specimens from *L. picca*. The strong dilatation of the anterior and middle tarsi in the ♂ is a peculiar and unique character.

I know of no other capture of this species besides that recorded by the Rev. W. W. Fowler, and Dr. Sharp tells me that this specimen is no longer in his collection.

*L. lunicollis*.—As stated above, *L. lunicollis* may be included in either group of the genus. It is an easily recognised species, as the posterior angles of the thorax are more rounded and less marked than in any other *Liodes*. The elytra are rather long and parallel-sided. The ♂ has a tooth on the posterior femora much resembling that of the well-developed ♀ of *L. calcarata*, but the truncate posterior border of the thorax, much narrower and lighter club of the antennae, and much more rounded posterior angles of thorax will at once differentiate *L. lunicollis*. It may be distinguished from any of the narrow-clubbed species by its more elongate and parallel-sided form, much more rounded sides and blunter posterior angles of the thorax, and the ♂-characters only resemble those of *L. flavicornis*. *L. lunicollis* appears to be a decidedly rare insect, but has occurred from the Isle of Wight to Yorkshire and Lancashire.

*L. litura*.—Another very variable species in size, the smallest specimens being hardly two mm. long, no larger than *L. badia*. The antennae are longer than in *L. calcarata*, the only species it is at all likely to be mistaken for, but the club, which is always black, is not quite so large. Rye gave the name var. *maculicollis* (Ent. Mo. Mag., Vol. XII, p. 152) to a specimen taken in Algeria which had a dark thorax, with only the posterior angles light, and a broad dark suture to the elytra. He says the colour is more marked than in any he had seen from Scotland, so that it appears that he hardly meant the name to apply to the Scotch form. However, the latter is so distinct in colour from the ordinary form that I think the name var. *maculicollis* is best applied to it as well. *L. litura* is one of the commoner species. In the Bradfield neighbourhood it varies in numbers very much in different years.

*L. badia*.—Rye when describing *Anisotoma similata* (Ent. Mo. Mag., Vol. VII, p. 8) writes "I should have hesitated in considering

this as other than an extreme form of *A. badia* if Dr. Kraatz had not returned it to me as certainly distinct from that insect, and a good species." In the example from F. Bates' collection, named by Rye, the situation of the fourth stria of the elytra is well marked on one side, and much less so on the other. I have specimens of *L. badia* only differing from this insect in having the fourth stria straight, and others with the striæ very slightly waved. There are others again with an intermediate form of punctuation of the striæ of the elytra.

*L. anglica*.—I need add nothing to my note already published as to the distinguishing characters of this perfectly valid species. In small examples the interstices of the elytra often appear almost transversely rugose, but this rugosity cannot be mistaken for the transverse striation present in *L. rugosa* and *L. hybrida*.

*L. lucens*.—Normal sized specimens of this species could hardly be confused with anything else but *L. anglica*; very small individuals, however, have much the same general appearance as *L. macropsis*, which has the club of the antennæ broader, with the last joint narrower in proportion to the penultimate, and the elytra shorter and much more strongly punctured.

*L. ovalis*.—This species can generally be recognised, even in the net, by its evenly rounded oval form. The club of the antennæ is dark and typically narrow. It could easily be confounded with *L. dubia* v. *subglobosa*, but the posterior angles of the thorax are much sharper and nearly right-angled, the striæ of the elytra are more finely punctured, and the first joint of the posterior tarsi is much longer.

*L. brunnea*.—This is a very distinct species. It is somewhat broad, parallel-sided, and entirely ferruginous; the club of the antennæ is exceptionally long and loose; the thorax is very little rounded at the sides, broadest near the base and from thence parallel-sided, the posterior angles being obtuse, but well marked; the elytra are parallel-sided to near their basal half, the striæ are finely and very closely punctured, the third to fifth being irregular in contour, as if too many punctures had been placed in a row and some had been squeezed out of their place. The under side of the middle and posterior femora is very strongly and closely punctured, the punctures being placed in rows. The very small tarsal claws constitute an important character. The ædeagus terminates in a very sharp little point at the apex. The long first joint of the posterior tarsi will at once distinguish *L. brunnea* from *L. dubia* and *L. algerica*, and the only other species it can be compared with is *L. ovalis*. The latter has the club of the

antennæ darker, the thorax broadest at the base, with sharper posterior angles, and the striæ of the elytra are more finely and not so closely punctured. *L. brunnea* is evidently a very rare species. The only examples I have seen are from Scarborough (Lawson), Guildford (Champion), Oxford (3) (Walker and Tomlin). It has also occurred at Mickleham (Marsh). Herr Reitter has sent me a specimen of *L. gallica*, Reitt., which Dr. Fleischer regards as synonymous with *L. brunnea* (Wien. Ent. Zeit., 1906, p. 206). It agrees with *L. brunnea*, and therefore differs markedly from *L. algerica* (*L. brunnea*, ex parte, Fleischer) in having the first joint of the posterior tarsi long and the claws abnormally small. It is impossible to give a definite opinion whether it is specifically distinct from *L. brunnea* from the examination of a single specimen, but it differs in details which may possibly be varietal, viz.:—the thorax is more rounded at the sides, and the posterior angles are much blunter; the elytra are not so parallel-sided, and the striæ are more strongly and not so closely punctured, the punctures not being placed so irregularly. It is a male and has the lower plate of the posterior femur broadly rounded at the apex as in *L. brunnea*, but the summit of the convexity is very finely toothed. The posterior tibiæ and ædeagus resemble in structure those parts in *L. brunnea*.

*L. picea*.—This a rather large, broad, and dark-coloured species. It closely resembles dark specimens of *L. dubia*, but is larger and stouter; the club of the antennæ is only slightly darker than the rest, and the striæ of the elytra are more closely and deeply punctured. From *L. curta* it is recognised by its usually darker colour, the narrower and lighter coloured club of the antennæ, of which the last joint is broader; the thorax is less rounded at the sides, and is broadest near the base. *L. picea* is a very rare Scotch insect. Prof. Poulton has most kindly sent me for examination two specimens taken at Forres, from the late Mr. A. J. Chitty's collection, now in the Oxford University Museum.

*L. dubia*.—Dr. Fleischer divides the forms of *L. dubia* into two groups (Wien. Ent. Zeit., XXV, p. 201): *L. dubia* and its allies, and *L. obesa* and its allies. He describes the thorax of the *L. dubia* group as being broadest directly behind the middle, the sides being narrowed before and behind this. I cannot agree with this description. In the var. *subglobosa* the thorax is broadest very near the base, and is hardly, if at all, contracted behind. The typical form has the body oval and moderately convex, and the thorax broadest shortly before the base and

contracted behind. The colour is variable, some specimens being entirely ferruginous with very slightly darker club to the antennæ, others are darker with pitchy head, thorax, and antennal club. In the var. *subglobosa* the body is short-oval and more convex than in the type, and the thorax is less contracted behind. The colour is entirely ferruginous, sometimes including the club of the antennæ, or with the head and thorax pitchy (var. *bicolor*). The striæ of the elytra are generally rather more finely punctured than in the typical form. It is very hard, however, to give a definite name to many intermediate forms between the typical one and v. *subglobosa*. In both the posterior tibia is rather variable in shape in the ♂, the curvatures—especially the basal one, which may be practically absent—being much less marked in small individuals. A typical specimen of the var. *obesa* is easily distinguished from the above. It is more parallel-sided, with the thorax more ample; the club of the antennæ is broader, with the last joint broader in proportion, and is light-coloured; the striæ of the elytra are more strongly and less closely punctured; and the tibiæ are more dilated. In the ♂ the posterior tibiæ are more strongly bent. I have seen a few examples which seem to be quite intermediate between this and the typical form. There is also a fairly constant form which somewhat resembles a very large specimen of v. *subglobosa* in shape, and in having the club of the antennæ narrower, but with the posterior tibiæ of the ♂ as strongly bent as in v. *obesa*. It is one of the forms which give rise to such great difficulty in this species. Since writing the above, Mr. Champion has called my attention to a short note just published by Gerhardt (*Deutsche Ent. Zeitschr.*, 1911, Heft III, p. 340). He gives two or three further characters for *L. obesa*, and states that he believes it to be a good species. I do not find these new characters any more constant than the others, and they are no help in the determination of the curious intermediate forms.

*L. algerica*.—This is a somewhat unsatisfactory species, and might be regarded as yet another variety of *L. dubia*. Typically it is considerably smaller; the thorax is more strongly contracted behind, its punctuation and that of the striæ of the elytra is finer, and the punctures are placed further apart in the latter. The club of the antennæ is always of a light colour, but the thorax is sometimes darker than the elytra (v. *nigriceps*, Fleischer). The ♂ has the posterior tibiæ very slightly bent inwards towards the apex. As stated above, this species has been confounded with *L. brunnea* by Dr. Fleischer, but is easily distinguished by its differently shaped thorax, more rounded sides of elytra, and more remotely punctured striæ of the same, the shorter



tarsi, and, particularly by the much shorter first joint of the posterior tarsi, the much finer and more diffuse punctuation of the under side of the middle and posterior femora, and the much less curved posterior tibiæ in the ♂. The ædeagus resembles that of *L. dubia* in structure, and is much more rounded at the apex than in *L. brunnea*. *L. algerica* is an uncommon species. Most of the specimens I have seen are from the Oxford district.

Bradfield, Berks:

May 28th, 1911.

#### CORRECTIONS.

P. 168, last line but one, omit "not." p. 170, section 10, for "length not exceeding 3—4 mm.," read "length not exceeding 3—5 mm."

#### ON A COCCID NEW TO GREAT BRITAIN: WITH NOTES ON ALLIED SPECIES.

BY E. ERNEST GREEN, F.E.S.

That indefatigable investigator of ants' nests, Mr. H. St. J. Donisthorpe, has submitted to me for determination, from time to time, various *Coccidæ* taken in association with ants. For the most part, these gatherings have consisted of the subterranean members of the genus *Ripersia*—principally *formicarii*, *tomlini*, and *donisthorpei*; but *Orthezia cataphracta* has also occurred.

Amongst a small collection recently received from the same source, I recognize two other *Ortheziines*. One of these is *Newsteadia floccosa*, Westw., associated with *F. fusca*; the other—four examples of which were taken from a nest of *Myrmica scabrinodis*, at Porlock (Somersetshire), in April of the present year,—proves to be the curious little species *Ortheziola vejilovskyi* described by Sulc, in 1894 (Sitzb. K. Bohm. Ges. Wiss., No. 44, p. 5), from specimens collected in Bohemia, and hitherto (to the best of my belief) recorded from no other locality.

The present examples are worn and discoloured by contact with the soil, and are, consequently, not such ornamental objects as those figured in the original description of the species; but there can be no doubt as to their identity. The greatly reduced antennæ, the undivided tibio-tarsus, the arrangement of the waxy lamellæ, and the bare median tract on the dorsum, all agree absolutely with Dr. Sulc's description and figures (*loc. cit.*).

My fig. 1 presents a dorsal view (enlarged by 30 diameters) of a

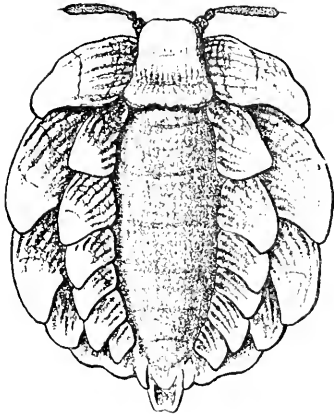


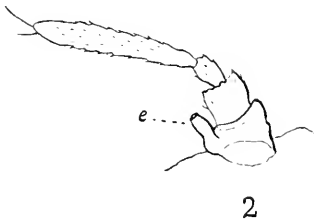
fig. 1

British example of the insect. In their mud-stained condition the lamellæ show little or no trace of the yellow bands described by the author of the species. Nor have the present examples any prominent ovisac; but this difference is attributable merely to the comparative immaturity of the specimens.

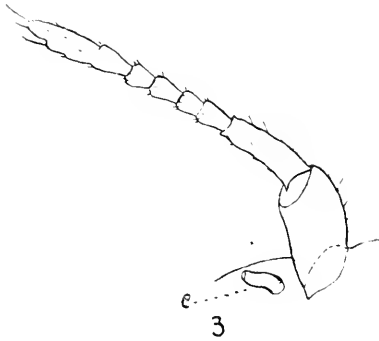
In one particular I am inclined to disagree with Dr. Sulz's interpretation of the characters of *Ortheziola*. He remarks that "the 3-jointed antennæ are attached to the frontal processes, which bear also on each side a stalked simple eye." From a comparison with the same organs in *Newsteadia* and in typical *Orthezia* (see figs. 2, 3, and 4), I am convinced that the so-called "frontal processes" are homologous with the basal joint of the antennæ in the allied genera. This (?) process or joint, in *Ortheziola*, is densely chitinous, and is in every particular of the same character as the unquestioned antennal joints. It is true that they have not a very well-defined basal margin, and their nature is also confused by the fact that the cylindrical eyes are firmly fused to their bases (see fig. 2); but I would interpret this condition as the result of a confluence or effusion of the denser chitinous areas at the base of the antennæ, in correlation with the confluence of the tibia and tarsus in the present insect. In other species of the *Ortheziine* group the eye, though separate from the acknowledged basal joint of the antenna, bears relatively the same position to it as does the eye in *Ortheziola* to the supposed frontal process. No frontal process—of this nature—has been observed in any other Coccid. In *Newsteadia*, to which genus this insect is most nearly allied, there are two stout cylindrical basal joints, followed by several small obconical or pyriform joints (fig. 3). In *Ortheziola*, Sulz's frontal process and what he understands as the first true joint clearly represent the two cylindrical basal joints in *Newsteadia*. If this view is accepted, *Ortheziola* should be credited with four (instead of three only) joints to the antennæ.

While on the subject of the *Ortheziine* antennæ, I should like to

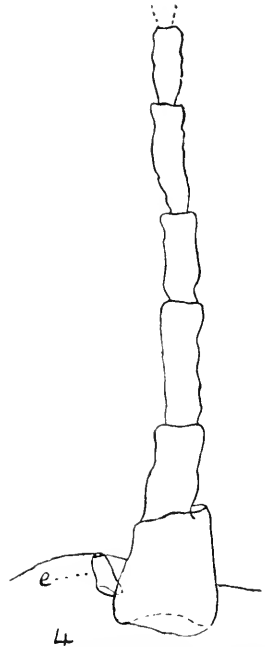
refer to Prof. Newstead's interpretation of the antenna of *Newsteadia*. He remarks (Mon. Brit. Coccidæ, vol. ii, p. 242): "With reference to the antennæ, Mr. Green says that 'the terminal joint is apparently composed of two fused joints, forming a scape-like termination; the antennæ thus consisting of seven distinct joints as opposed to eight in the other species. . . . Another remarkable character in *floccosa* is the very long basal joint of the antenna.' In ascribing seven joints to the antennæ, Mr. Green has evidently overlooked the true character of the third joint, which, although deeply constricted in the centre, is not articulated; the constriction, however, so exactly simulates a joint that it may easily be mistaken as such."



2



3



4

Prof. Newstead is quite correct in asserting that there is no true articulation between what I considered as the 3rd and 4th joints and what he takes to be a single 3rd joint with an illusory constriction. There certainly is no articulation between these two joints—or nodes, as the case may be. But I do not agree with the view that this, of itself, deprives the part of its right to be considered a separate joint. In many *Lecaniinae* there is no actual articulation between certain of the recognized joints. It is sometimes difficult to decide whether a manifestly compound segment should be reckoned as one or more joints. In practice, it is usual to consider such a segment as consisting of a single joint when the transverse divisions have completely

disappeared, or of several joints when these septa can be distinguished, —quite apart from the consideration of whether or not they can articulate freely upon each other. In the present case, I maintain that the septum can be distinguished between my 3rd and 4th joints (at the point of Prof. Newstead's 'deep constriction.')

The dividing line is very fine and delicate, but it is clearly demonstrable in a good mount, with a proper adjustment of focus and illumination. In some of my examples, it is fully as distinct as are the divisions between the other joints, and in one specimen a third joint is closely fused to the other two. Are we to consider, in this last case, that the antenna has only five joints, of which the third is deeply constricted in two places? As a matter of fact, there is little or no play between any of the joints —from the 2nd onwards. The transverse septa are usually more marked between the 4th, 5th, 6th, and 7th (according to my interpretation) joints than between the 3rd and 4th, but they move together — as one piece, articulating freely only between the 1st and 2nd joints. If Prof. Newstead will examine a long series of these insects, from different localities, I think that he will find individuals in which it is impossible to see any distinction between the divisions of (my) 3rd and 4th joints and those of the subsequent segments.

#### DESCRIPTION OF FIGURES.

1. *Ortheziola vejdoevskyi*, dorsal view, × 30.
2. Antenna and eye of *O. vejdoevskyi*, × 70.
3. do. do. *N. floccosa*, × 70.
4. do. do. *O. urticæ*, × 70.

Peradeniya, Ceylon :

June 3rd, 1911.

#### ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF *MUSCIDÆ ACALYPTRATÆ.*

BY J. E. COLLIN, F.E.S.

(Continued from Vol. xlvii, page 153).

#### *EPHYDRIDÆ.*

##### *NOTIPHILINÆ.*

\**Notiphila brunnipes*, Desv. (*stagnicola*, Stenh. nec Desv.).—I am convinced that Schiner was right in considering *stagnicola*, of Desvoidy and Macquart distinct from *stagnicola* of Stenhammer, and feel sure that the species described by Desvoidy as *brunnipes* is the same as Stenhammer's *stagnicola*. I found it in some numbers at Ranworth (Norfolk) on the leaves of aquatic plants; it may be known by its black antennæ, which in life show a narrow pale base to the

third joint, its pale palpi and silvery white face, the tibiæ are dark with only the extreme base and tip pale. *N. chameleon*, Becker, must be exceedingly closely allied, if not identical.

*Notiphila stagnicola*, Desv.—In the "List" this species is wrongly credited to Macquart instead of Desvoidy.

*Notiphila maculata*, Stenh.—From Stenhammer's description it is obvious that in his species there should be no ciliation beneath the middle femora, therefore Schiner was correct in suggesting that *venusta*, Lw., was identical with *maculata*, Stenh., which necessitates a new name being given to the species called *maculata* by Loew and Becker.

*Notiphila supposita*, n.n.—This is the name proposed for *maculata*, Lw., Beck., *nec* Stenh. I have seen it from only Herefordshire.

*Disomyza cimiciformis*, Hal.—A genus *Clanoneurum* has been established for this species by Becker (1903), and *Cyclocephalomyia*, Hendel (1907), a new name for *Cyclocephala*, Strobl. (1902) is a synonym (*v.* Czerny, 1909).

\**Atissa durrenbergensis*, Lw.—I took this species at Aldeburgh (Suffolk), on September 17th and 18th, 1907. It has black antennæ and smoky wings without the postical cross vein clouded.

\**Atissa limosina*, Becker, like the last species has black antennæ, but is darker in general colouring, not even having the basal joint of the tarsi pale; the postical cross vein is infuscated. I found it at Arne (Dorset) in September, 1906, and at Woodbridge and Aldeburgh (Suffolk) in August and September, 1907.

\**Athyroglossa ordinata*, Becker.—This species was taken by Mr. C. G. Lamb, at Padstow, Cornwall, in July, 1904. Compared with *A. glabra*, Mg., the thorax is more bare, the scutellum more rounded and shining without the coarse punctuation of that species.

*Psilopa compta*, Meig.—Becker considers this to be only a variety of *nitidula*, having found specimens, in the Canary Islands, intermediate between the two in the coloration of the legs. I, however, prefer to leave it in the British List for the present.

\**Discocerina (Clasiopa) cinerella*, Stenh.—This species was found by Col. Yerbury at Aviemore (Inverness) and Nairn, in July, 1905, and Dr. Wood has taken it in Herefordshire. It is one of the larger species, of a dull yellowish brown colour with the last abdominal segment brilliantly shining black, with only two bristles on each side of the yellowish face, with pale third joint to the antennæ, and pale knees and tarsi.

\**Discocerina (Clasiopa) plumosa*, Flin., is the largest British species of the genus, the thorax is indistinctly shining, the face nearly perpendicular and flat, and the 3rd antennal joint indistinctly yellowish. Colonel Yerbury found it at Tarrington (Herefordshire) in August and September, 1902, and I took it in some numbers in that county in August, 1910.

*Disocerina (Clasiopa) nigrina*, Meig., is now considered a synonym of *obscurella*, Flm., and *nigrina*, Stenh., &c., a synonym of *calceata*, Meig.

\**Disocerina (Clasiopa) xanthocera*, Lw.—I have taken this species at Tuddenham and Aldeburgh (Suffolk), in September, and Dr. Wood has found it in Herefordshire. It is a dull grey insect with whitish wings and yellow antennæ; the bristles on the face are arranged in two rows.

\**Disocerina (Clasiopa) glaucella*, Stenh., may be recognised by noticing the very deep jowls and wide cheeks, the black antennæ, the spurred hind tibiæ, and the presence of an extra bristle each side of the face outside the upper pair. Dr. Wood finds it in the Monnow Valley (Herefordshire) in July.

#### HYDRELLINÆ.

The genera *Mosillus (Gymnopa)* and *Atissa* are now included among the *Notiphilinæ*.

\**Hydrellia grisea*, Stenh.—If I am correct in my interpretation of this species, it may be known from any other by the absence of the minute serration beneath the front femora towards their end.

*Hydrellia laticeps*, Stenh., and *discolor*, Stenh.—I retain Stenhammer's names for these species, as I fail to see the necessity or utility of reviving (on the sole evidence of doubtful type specimens) old unrecognised names of Meigen.

\**Hydrellia mutata*, Zett.—I have seen specimens of this species from Herefordshire and Suffolk. It is a fair sized very dull dark species, the sides of frons and the antennæ being deep dull black; the latter, however, slightly pale at the base in the male, and the basal joint of the tarsi pale.

\**Hydrellia flavicornis*, Flm., is a fairly large species, antennæ almost entirely pale in the male, darkened in female, palpi brownish-yellow (♂), dark brown (♀), frons uniformly greyish, face yellow. Most of the specimens I have seen were taken in Herefordshire from May to July, but Col. Yerbury found it at Porthcawl (Glamorgan) in June, 1903.

\**Hydrellia argyrogenis*, Becker, may be easily recognised by its black palpi and antennæ, dull thorax, and large jowls which, with the face and pleuræ, are silvery white. This was a common species in August, 1905, on the water lily leaves growing in an artificial pond at the bottom of Mr. Verrall's garden at Newmarket (Suffolk).

\**Hydrellia maculiventris*, Becker.—This occurred in the same locality as the last species; it has pale front coxæ, silvery white face, black antennæ, legs with knees, tips of tibiæ and base of tarsi yellow, and abdomen distinctly grey at the sides.

*Hydrellia hydrocotyles*, Hal., I do not recognise, unless it could have been described from a female *discolor*.

*Hydrellia cochleariæ*, Hal., and *tarsata*, Hal.—At present I fail to satisfactorily recognise.

*Phithyria interstincta*, Flm.—Our British specimens would answer better

to the species called by Becker *sermuculata* in having the femora darkened and the antennæ more extensively dark, but I think this must be a question of maturity. Also I have a note made when at Stockholm that *P. interstincta* of Fallen's collection has darkened femora.

\**Philhyggria vittipennis*, Zett.—This is not uncommon on the Suffolk coast; the thorax is indistinctly striped, the wings very long and often darkened about the front margin, and the legs are extensively darkened.

*Hyadina nitida*, Meq., has been added to our List by Malloch in 1908. Mr. Verrall caught a female at Felixstowe (Suffolk) in July, 1894, and Col. Yerbury has taken it at Aviemore (Inverness), at the end of May, 1904, and at Clifford's Castle (Herefordshire) in July, 1902.

\**Hyadina humeralis*, Becker, may be known by the small humeral black spot and the absence of the hyaline spots on the wing. Mr. Verrall found it at Warrengore (Sussex) in April, 1894; Col. Yerbury has taken it at Fordingbridge (Hants), Porthcawl (Glamorgan), and in the neighbourhood of Aldeburgh (Suffolk), and I have taken it on the banks of the river Deben (Suffolk).

The genera *Pelina* and *Ochthera* are placed by Becker among the *Ephydrinæ*.

*Ochthera mantispa*, Lw.—Mr. C. G. Lamb was responsible for bringing forward this addition to the British List, in this Magazine for May, 1904.

#### EPHYDRINÆ.

*Pelina ænea*, Flm.—By a mistake in the List, Haliday was given as the describer of this species.

\**Pelina nitens*, Lw.—My specimens seem to indicate a transition form between *subpunctata*, Becker, and Loew's species, though the thorax is distinctly bronze coloured, the antennæ are only faintly reddish at the base, and the second abdominal segment is punctulate about the middle. The scutellum in this species terminates in a point. It is widely distributed in Britain, as I possess specimens from Nairn and Aberlady in Scotland, Woodbridge (Suffolk), Porthcawl (Glamorgan), Torcross (Devon), Lymington (Hants), and Hever (Kent).

*Halmopota salinarum*, Bouche.—I have never seen this species, which is said to occur about salterns.

\**Parhydra obliqua*, Becker.—I found this species in some numbers at Snailwell (Cambs.) in June, 1908; Col. Yerbury has taken it in the New Forest (Hants), and Dr. Wood, in Herefordshire.

\**Parhydra nigritarsis*, Strobl.—Very much like *obliqua*, but the tarsi are dark and the face is more prominent. I have seen specimens from Scotland taken by Col. Yerbury and Mr. C. G. Lamb.

*Ephydra salina*, Zett.—Haliday's description of *E. halophila* v. Heyd., undoubtedly applies to *E. salina*, Zett., and not to von Heyden's species which is considered a synonym of *riparia*, Flm. Zetterstedt's name must therefore be placed in the List, though I have never seen a specimen of the species which is said to swarm about salterns.

*Philotelma defectum*, Hal.—In describing this genus Becker placed it among the *Notiphilinae* on the antennal characters, but the chaetotaxy, especially of the head, must surely place it in the neighbourhood of *Cenia* and *Scatella* among the *Ephydrinae*. Becker also incorrectly recognised Haliday's species; the true *Cenia defecta*, Haliday, is undoubtedly a *Philotelma*, and I consider it probable that *Ephydra albidipennis*, Stenh., and *E. psilopina*, Zett., also belong to the same genus, indeed Haliday considered the first a synonym of his *defecta*.

\* *Philotelma nigripennis*, Mg.—This has not the white face nor the distinct whitish spots on the wing of *defectum*, though otherwise much like it. It is not uncommon on the Suffolk coast in September, and Col. Yerbury has taken it at Gravesend (Kent).

*Scatella sorbillans*, Hal., and *æstuans*, Hal.—I prefer to retain Haliday's names for these species instead of reviving, on the evidence of doubtful type specimens, old unrecognised names of Meigen.

*Scatella leucostoma*, Mg.—This was recognised from Meigen's description by Haliday without hesitation, and the size given by Meigen, as well as his description of the "*Leib—, ohne glanz,*" confirms the identification. It is the same as *dichæta*, Lw., and though the specimens now existing in Winthem's and Meigen's collections are according to Becker only *sorbillans*, Hal., I see no reason for altering the name.

*Scatella stenhammeri*, Zett., has been added to the "List" by Grimshaw (Ann. Scot. Nat. Hist., 1909, 250) on the strength of a single specimen, though this is a species in which it is very necessary to see a long series before being certain of its identity.

*Scatella noctula*, Meig., of the "List" is now considered to be an unrecognised species of *Scatophila*; according to Meigen's description it resembles in its wing markings *S. unicornis*, Cz., in having a larger number of white spots or stripes than most of the other species. I cannot say what species Haliday and Walker had under this name, but Haliday thought his *compta* to be only a variety. A species answering to the description may yet be found upon our coasts.

\* *Scatophila unicornis*, Czerny.—For a long time a pair of a *Scatophila*, taken by Mr. Verrall at Denmark Hill, London, on February 9th, 1867, stood without a name in his collection; I was doubtful myself whether the peculiar horn at the middle of the upper mouth edge was not abnormal, but Dr. Wood has taken a number of this species round hotbeds in the winter, and in all the males this horn is present, though absent in the females. Czerny described it in 1900, from two males taken on a hotbed in a garden at Badhall, Austria.

\* *Scatella caviceps*, Stenh.—I possess specimens of this species from Norfolk, Suffolk, Essex, and Hants. The facial profile is different in the two sexes, Stenhammer's description applying to the male only. The wings, thorax, and abdomen are very similar to those of *cribrata*, but the halteres are pale, and there are only two pairs of strong dorso-central bristles instead of three, besides numerous smaller differences.

\* *Scatella variegata*, Lw.—I took about a dozen specimens of what I believe



to be this species at Walton-on-Naze (Essex) in June, 1908. The thoracic markings, and the whitish base to the wings, together with the black legs, pale halteres, and grey banded abdomen, serve to distinguish it. In this species, as in *cariceps* and *unicornis*, the facial profiles of the sexes differ, that of the male in *variegata* very much resembling the profile of male *cariceps*.

*Cænia fumosa*, Stenh.—This is the *Cænia albula*, Mg., of the "List" as distinguished by Haliday; Meigen's *albula* being now considered an *Ephydra*, Stenhammer's name may be used.

*Cænia defecta*, Hal.—Now transferred to the genus *Philotelma*.

*Cænia obscura*, Mg.—This name need no longer burden the "List," for according to Becker it was described from a specimen of *Hydrellia griseola*; it only stood in our "List" on the authority of Walker.

\**Cænia curvicauda*, Meig.—This is undoubtedly distinct from *palustris*, Fln., the halteres are dark and the male hypopygium is very large, reaching to the hind margin of the second abdominal segment. I have taken it in Cambridge-shire, Suffolk, Norfolk and Herefordshire.

(To be continued).

#### ALGERIAN MICROLEPIDOPTERA.

BY THE RIGHT HON. LORD WALSINGHAM, M.A., LL.D., F.R.S., &c.

(Continued from p. 15).

#### OECOPHORIDÆ.

#### 355. PLEUROTA Hb.

#### 3085-1. PLEUROTA NEOTES, sp. n.

*Antennæ* greyish fuscous, with faint pale annulations. *Palpi* whitish ochreous above, the lower half (or more) dark fawn-brown; the terminal joint short, partially concealed. *Head* and *Thorax* pale ochreous. *Forewings* pale ochreous, with a slight brownish tinge, the costa narrowly whitish nearly to the apex; a pale space along the cell from near the base is slightly dilated outward, and in some specimens separates the rather darker subcostal area from the almost equally dark plical and dorsal area, but in others this paler space is almost entirely obliterated by the ochreous scaling, the only difference being that the whole length of the wing adjacent to the pale costal streak shows a stronger admixture of the brownish tint than is exhibited below the middle of the wing; there is no terminal line at the base of the pale ochreous cilia; the costal streak is visible on the underside, which is otherwise dull tawny. *Exp. al.* 11-14 mm. *Hindwings* rather dark tawny brownish grey; cilia somewhat paler, with a slight shade-line along their base. *Abdomen* dark tawny brownish grey. *Legs* tawny brownish grey, hind tibiae paler brownish grey, the tarsi still paler, almost white.

*Type* ♂ (8394) Mus. Wlsm., British Museum.

*Hab.*: ALGERIA: Constantine, 6-20.V.1895 (*Eaton*), 6.V.1904 (*Wlsm.*)

Nine specimens.

In one or two specimens a minute dark dot, apparently a single scale, rests at the outer end of the cell, and in one only a few similar scales are scattered along the termen, without forming any continuous line. Near *brevispinella*, Z., but the average size smaller, and the palpi distinctly shorter. The darker colouring of the subcostal area in *brevispinella* is not continued or repeated below the middle of the wing as in *notes*, which assumes therefore a more uniformly darkened appearance.

373·01 COESYRA Meyr.

COESYRA Meyr. Pr. Lin. Soc. N.S.W. VII. 423 no. 51 (1883) :  
IX. 763-90 no. 51 sp. 305-47 (1885).

3321·1. COESYRA SOLAE, sp. n.

*Antennae* biciliate ( $1\frac{1}{2}$ ) in the ♂, with slight basal pecten; tawny fuscous, with white annulations. *Palpi* rather stout, smoothly clothed, the terminal joint not longer than the median; white, sprinkled with tawny fuscous. *Head* and face densely clothed; white, with slight tawny sprinkling above. *Thorax* yellow, shaded with brownish ochreous. *Forewings* rather short and broad, the costa moderately straight, apex obtuse, termen oblique; yellow, shaded with olive-brown, and much mottled beyond the base with a sprinkling of tawny fuscous scales, especially in a broad median dorsal patch, of which the ground-colour and margins are white; this patch is produced upward and outward to above the end of the cell where it is rounded off, but connected by scattered tawny scales to the tornus, thence widely along the termen reaching the commencement of the costal cilia in a small tawny fuscous patch; the anterior outline of this undulated marking is whitish throughout, encircling and almost enclosing a rich olive-brown blotch just beyond the end of the cell; cilia yellow, with indistinct bars of tawny fuscous sprinkling. *Exp. al.* 11-12 mm. *Hindwings* shining, whitish, much suffused beyond the base and around the margins with brownish grey; cilia white, shaded with brownish grey towards the apex. *Abdomen* blackish above, white beneath. *Legs* white, with blackish sprinkling on the tarsi.

*Type* ♂ (96731); ♀ (96732) Mus. Wlsm., British Museum.

*Hab.*: ALGERIA: Hammam-es-Salahin, ⊕ *Salsola vermiculata*, 29.I, ex. 1-30.IV.1904 (*Wlsm.*); Biskra, 31.III.1904, 16.IV.1903 (*Wlsm.*); El-Kantara, 10-20.V.1903 (*Wlsm.*). Twenty-four specimens.

This species is named after my able assistant, Ignatio Sola, whose name has been mentioned in previous papers. We met with this in some abundance among the remains of an old Roman settlement at the mouth of the Gorge of Tilatou, where it was invariably beaten from *Salsola vermiculata*. Sola found some empty pupa-cases attached by webs to the stems of this plant from which there was little doubt that

the moths had recently emerged. In 1904 six specimens were bred at Hammam-es-Salahin from pale slate-coloured larvae with black head and pronotal plate.

Neuration FW : 7-8 stalked, 7 to termen—in *Borkhausenia* Hb. FW : 7 runs to costa.

### 379. BORKHAUSENIA Hb.

3355·2. BORKHAUSENIA SEMIFUSCATA, sp. n.

*Antennae* biserrate and minutely ciliate, with large basal pecten ; pale stone-grey, with faint darker annulations, the basal joint slightly tinged with ochreous. *Palpi* stone-grey, somewhat darker externally. *Head* pale stone-grey. *Thorax* shining, stone-grey. *Forewings* shining, stone-grey, with greyish fuscous dusting throughout, more thickly distributed along the costal third and on the outer portion, the paler median area containing three fuscous spots, one on the middle of the cell, a smaller one below it on the fold (usually a little beyond it), and a third, larger, transversely placed at the end of the cell ; cilia stone-grey, without dividing line. *Exp. al.* 14-15 mm. *Hindwings* shining, leaden grey ; cilia stone-grey. *Abdomen* stone-grey, sometimes with an ochreous tinge. *Legs* pale stone-grey.

*Type* ♂ (97721) ; ♀ (97722) Mus. Wlsm., British Museum,

*Hab.* : ALGERIA : Philippeville, 12.V.1904. (Wlsm.). Thirteen specimens.

Most nearly allied to *fuscifrontella* Cnst., from which it may be distinguished by its paler head, and by the less uniform obscure colouring of the forewings—*fuscifrontella* showing no contrast between the shade of the costal and median areas.

3355 : 1. *Borkhausenia fuscifrontella* Cnst., is distinct from 3355 *lavandulae* Mn., of which *ardosiella* Cnst., and *pulverisquamis* Wlsm., are synonyms [*vide* Wlsm., Ent. Mo. Mag., XXXVII. 180-1 (1901)].

### GELECHIADAE.

321·1. CECIDOPHAGA, gn. n.

(κηκίς = a gall ; φαγεῖν = to devour).

*Type* : CECIDOPHAGA TAMARICICOLA Wlsm.

*Antennae* 3, simple, slightly serrate towards apex ; basal joint with strong pecten at base. *Labial Palpi* recurved, median joint somewhat clothed at end ; terminal joint shorter than median, pointed. *Maxillary Palpi* minute. *Hau-stellum* moderate. *Ocelli* absent. *Head* with appressed scales. *Thorax* smooth. *Forewings* with long dorsal cilia, giving a widened appearance, but when denuded elongate-lanceolate, acute, gradually tapering from the base ; *neuration* 12 veins ; 7 and 8 stalked, to costa, 6 out of their stalk ; 9 closely approximate to (8-6) ; rest separate ; 1 basally furcate. *Hindwings* with straight, parallel

margins, extended apex, and sinuate termen; cilia  $1\frac{2}{3}$ ; *neuration* 9 veins; 6 and 7 separate, but approximating towards base; 7 to apex, stalked with 8, which is emitted near costa; 2-5 separate, 5 cubital; 4 nearer to 3 than 5; discoidal subobsolete between 5 and 6; radius approaching 12 and connected to it by 11 beyond half cell-length. *Abdomen* smooth, rather flattened. *Legs*, hind tibiae hairy.

Perhaps most nearly allied to *Sitotroga* Hnmm.; several correlated genera occur in Algeria.

2902-1. CECIDOPHAGA TAMARICICOLA, sp. n.

*Antennae* ochreous. *Palpi* ochreous, brownish externally, except at base of median joint. *Head* and *Thorax* pale fawn-ochreous. *Forewings* pale fawn-ochreous, unmarked, except for a very slight sprinkling of minute brown scales toward the apex, and sometimes a few groups of the same around the end of the cell; underside shining. *Exp. al.* 17-23 mm. *Hindwings* shining, pale brassy ochreous; cilia pale fawn-ochreous. *Abdomen* pale ochreous. *Legs* pale ochreous.

*Type* ♀ (88705); ♂ (88708); ⊕ (88753) Mus. Wlsm., British Museum.

*Larva* white, without markings. *Head* olivaceous, paler above. *Thorax* with very pale olivaceous pronotal plate. *Legs* white. *Long.* 11 mm.

*Hab.*: ALGERIA: Biskra and Hammam-es-Salahin, ⊕ in galls on *Tamarix* sp., I-IV, excl. 12.IV—28.VI.1903 (Wlsm.). Forty-eight specimens.

The galls made by the larvae on the branches of the Tamarisk are not terminal, and are usually somewhat lateral, or larger on one side than on the other; they are at least half-hollow. I found these galls abundant at Biskra, and at Hammam-es-Salahin from January to April, and bred specimens continuously from April to the end of June.

TINEIDAE.

435. STIGMELLA Schrank.

STIGMELLA Schrank *Fn. Boica* II. (2). 139 no. 1890 (1802); Oken *LB. Naturg. Zool.* I. pp. 655, 667, xxiii (1815); Wlsm. *Pr. Z. Soc.* Lond. 1907. 1008-12 (1908).

= NEPTICULA Hdn (1843); Z. (1848); Stgr-Rbl. *Cat. Lp. Pal.* II. 221-8 no. 435 sp. 4289-4418 (1901).

4416-1 STIGMELLA ZIZYPHI, sp. n.

*Antennae* greyish fuscous; eye-caps pale golden yellowish. *Head* dark fuscous. *Thorax* fuscous, sprinkled with pale golden yellow. *Forewings* dark

fuscous, sprinkled throughout with elongate groups of pale golden yellow scales; cilia dark grey *Exp. al.* 4.5-5 mm. *Hindwings* shining, dark grey; cilia concolorous. *Abdomen* dark grey. *Legs*: posterior pair golden yellowish.

*Type* ♀ (96915); mine (96920). Mus. Wlsm., British Museum.

*Hab.* ALGERIA: Beni Mora, near Biskra, ⊕ *Zizyphus* sp., 16. II, ex. 21-28.III.1903 (*Wlsm.*). Five specimens.

Allied to *euphorbiella* Stn. The yellowish larva makes a broad contorted mine, in which the frass appears as a narrow black, track in the leaves of *Zizyphus*.

*Homalota picipennis*, Mannh., in Bucks.—It will be remembered that Dr. Joy introduced this species to the British List on specimens taken by him as far north as Inverness-shire (*Ent. Mo. Mag.*, xxi, 252). It may therefore be of interest to record its occurrence in Buckinghamshire. I took an example last October in rotting fungus in a wood near Little Marlow, which Dr. Joy has been good enough to confirm as referable to this species.

*H. sodalis*, Er., was abundant in the same fungus, and it seems probable that, as Dr. Joy suggested in his note, *H. picipennis* has a much wider range in this country than the first capture might lead one to suppose, and has perhaps hitherto been overlooked.—W. E. SHARP, South Norwood: *July 4th*, 1911.

*Notes from the Isle of Sheppey.*—I was at Sheerness from June 12th to 26th, and despite the cool and windy weather which set in on the evening of my arrival and prevailed during the whole of my stay, succeeded in taking a good many of the *Coleoptera* characteristic of this well-known locality. These are, I find, more difficult to obtain in every successive year, as all the choicest spots for insects in the Island are being slowly but surely destroyed. Thus I have good reason to fear that *Hæmonia curtisii*, which is still to be found freely in its special ditch close to Sheerness, will soon be a thing of the past, owing to the near approach of building operations; *Berosus spinosus*, usually found in plenty in its company, is fortunately much more widely distributed. In wet moss at the edge of a little pond near Leysdown, no fewer than seven species of *Ochthebius*—*exaratus*, *nanus*, *punctatus*, *viridis*, *marinus*, *pygmaeus*, and *bicolor*—were found together, the four last-named being very plentiful. One of the chief objects of my search was *Malachius vulneratus*, Ab., but this I found on one occasion only, by sweeping the luxuriant herbage of a salt-marsh which is covered by the highest tides of the Medway, all the specimens taken being ♀'s.; its ally, *M. marginellus*, Ol., was not scarce on the remains of the once productive little salt-marsh on the Thames foreshore just beyond Sheerness. The habitat of *Quedius hammius*, Sharp, of which I found a very few specimens outside the sea-wall, is also of a decidedly saline character. Only one noteworthy beetle, a fine ♂ *Magdalinus barbicornis*, a species not previously noted in Sheppey, was obtained by cliff-sweeping. *Lepidoptera* were notably

scarce, but I was very glad to see once more the beautiful larva of *Clisiocampa castrensis* in abundance on the salt-marshes, a large proportion being already full-fed.—JAMES J. WALKER, Oxford: *June 18th, 1911.*

*Re-occurrence of Pyralis tenigialis, Zell., in the Oxford district.*—I am glad to be able to record the fact that this rare and interesting little Pyrale has turned up again in the Oxford district. On the evening of July 5th I found a freshly emerged ♂ specimen at Wolvercote, Oxon, sitting with up-turned abdomen on the stone wall of a barn, in exactly the same attitude as its common congener, *P. farinalis*. A close search of this and similar places, as well as a moderate amount of thatch-beating, has up to now failed to produce any further specimens.—*Id.*: *July 18th, 1911.*

*Capture of Deilephila galii at Boston, Lincs.*—On the evening of July 10th I took a perfect specimen of *Deilephila galii* in my garden. I was standing and watching a bed of red valerian, and about 9.45 p.m. this moth swooped down and hovered over the flowers. I caught him in the net at once. This record may be interesting to readers of your Magazine. Is this to be a “*galii*” year? I have also taken several *Trochilium crabroniformis* on my aspen trees. I cannot keep an aspen or a sallow long on account of these “wood-borers.”—C. W. PILCHER, Boston, Lincolnshire: *July 12th, 1911.*

*Plusia moneta, Fab., in Notts.*—Mr. Porritt has asked me to place on record the occurrence of this species in the garden here, as a contribution to the records relating to the gradual extension of *Plusia moneta* over Northern England. The larva was found on a plant of *Aconitum napellus*, and there were traces of a second having been at work on another shoot of the same plant. The moth, a ♀, emerged successfully last month. Professor Carr, of University College, Nottingham, who is collecting the county records for Entomology, tells me this is the first occurrence of *P. moneta* in Notts which has come to his knowledge.—E. MAUDE ALDERSON, Park House, Worksop: *July 12th, 1911.*

*Halonota turbidana, Tr., bred.*—Referring to my note in the May number of Ent. Mo. Mag., pp. 111 and 112, recording the finding by Mr. Corder and myself of what we concluded were the larva of this species in the roots of *Petasites*, at Greatham, on March 25th of the present year, we have now, both of us, bred the moth, and placed the matter beyond doubt. Mr. Corder writes me with reference to the larvæ he got: “I find these leave the roots in late spring, and spin tight oval cocoons of earth and particles of sand lined with white silk, and near the surface; the insect forces its way out when ready to emerge, leaving the empty pupa skin on the surface.” The few larvæ I had behaved in exactly the same manner, excepting that one attached itself to the outside of a dried root; but I have not heard from Dr. Chapman as to his experience with the larvæ I sent him.—J. GARDNER, Laurel Lodge, Hart, West Hartlepool: *July 17th, 1911.*

*Libellula fulva*, Müll., abundant near Askern, Yorkshire.—On Thursday last, June 15th, Dr. H. H. Corbett, of Doncaster, took me to the locality near Askern, where two years ago he casually took a specimen of *Libellula fulva*, and near to where Mr. S. L. Mosley had taken it so long ago as June, 1888 (see Ent. Mo. Mag., July, 1909, p. 166). The place is called Shirley Pool, and is one of the very few pieces of undrained fen land still remaining in Yorkshire. It is situate one and a half miles from Askern, and about seven miles from Doncaster. Before we reached the "Pool," we saw that there were plenty of *L. fulva* about, as on a small, round pond adjoining it, and to which we first came, they were flying in numbers, and we captured nearly a dozen specimens on that pond alone, although from the wide margin of reeds all around, it was but rarely that the insect came near enough to be netted. The "Pool" itself is a fairly extensive piece of water, and the species appeared to be plentiful all over it, and was indeed more abundant than I have ever seen it even in the Norfolk Broads. There were many scores of *fulva* about, and I do not think it would be any exaggeration to say there were hundreds. The locality is exactly similar in character to the places in the Norfolk Broads which *fulva* frequents, but still wilder, as the growth of aquatic vegetation (reeds, rushes, and other plants) is denser and more luxuriant. And being private property, with the wild fowl, fish, &c., preserved, there are not the paths, roads, &c., which now give to the Broads a more frequented appearance. The flowers of the yellow iris on the drier ground, in all the beauty of their freshness, were a sight to be remembered.

It was most satisfactory to find the fine and local *L. fulva* so well established in a locality so far north. The other dragon-flies accompanying it were *Brachytron pratense*, *Libellula quadrimaculata*, *Pyrrhosoma nymphula*, *Ischnura elegans*, and *Agrion puella*, all common, but of the three larger species, *L. fulva* quite took the lead in point of numbers.—GEO. T. PORRITT, Dalton, Huddersfield: June 17th, 1911.

*Entomological work in India.*—In a recent report by Dr. Annandale, comprised in that of the Board of Scientific Advice for India, 1909–10, that gentleman, referring to the volume on *Diptera* that I am preparing for the "Fauna of British India" series, says: "The large additions recently made to our collection of *Diptera* by himself and others having made it possible to undertake this important work, which could not have been contemplated elsewhere than in Calcutta."

From the direct connection of this work of mine with the opinion that it "could not have been contemplated elsewhere than in Calcutta," it may be inferred that this opinion is shared by me, whereas the direct opposite is the case.—E. BRUNETTI, Calcutta: June 5th, 1911.

## THREE WEEKS IN THE SUDAN.

BY G. B. LONGSTAFF, M.A., M.D., F.R.C.P.

*(Continued from page 127).*

Quite the most obvious Khartûm beetle was the dark brown and gold Cetoniid, *Pachnoda sarigayi*, G. and P., which was very commonly to be seen flying around, or settled upon, the flowers of *Acacia* or *Tecoma*. When settled on a flower it was easily alarmed, and readily took to its wings. Many specimens in the British Museum have the brown replaced by yellow, but I saw none so coloured. At Burri I took flying about *Acacia* flowers two of the large green *Steraspis speciosa*, Klug, a species common in Upper Egypt, also at the same flowers a very finely coloured example of the magnificent *Julodis fimbriata*, Klug—green, yellow, and orange-red. The electric lights of the hotel attracted the small chafers, *Adoretus clypeatus*, Burm., and *Schizonyche* sp., as well as two specimens of the small scarab, *Catharsius sesostris*, Waterh. (= *pylades*, Péringuey), a species which ranges from Egypt to Sierra Leone, in one direction, and to South Africa in the other. Amongst the odds and ends attracted by light was an *Opatrum*, as usual dingy and nameless. Of *Himatismus villosus*, Haag, I found one on the Cathedral site, while three others came to light. Débris under bushes of *Calotropis* gave shelter to a *Sceliodis castaneus*, Esch., and a number of the abundant *Ocnera hispida*, Forsk.; of the last named Mrs. Duckett took one in the hotel. *Zophosis plana*, F., crawled upon the sand near the rifle ranges. Other beetles met with were *Coccinella 11-punctata*, L., and five specimens of *Bukea lichatshovii*, Hummel, var. *pallida*, Muls.

Unfortunately, when we reached Khartûm the dry season was so far advanced that with the water at such a low level it was not possible to make the usual excursion up the Blue Nile. However, after a good deal of difficulty I managed on February 15th, to hire a small oil-fed steam-launch, in which we got to Sôba, fifteen miles up stream, where mounds and brickbats are all that remains of the evidently once considerable capital of the Christian kingdom of Aloa. We landed on the north side of the river at about noon, and had to climb up a steep bank sheltered from the north wind, but with the sun's rays pouring down upon our backs with a power that I have seldom experienced, so that I fully expected to be struck down. At the top we found ourselves in a somewhat scanty thorn-scrub, but the cruel prickles, the great heat, and the strong wind, contributed to make collecting difficult.



With the exception of a female of the common *Eumenes tinctor*, Christ, found in the "Rest house," and two Sphegids, *Bembex mediterraneus*, Spin., and *Tachysphex fluctuatus*, Gerst., both females, all my captures were butterflies. Of the orange-tipped *Teracolus ephyia*, Klug, I took four males, in one of which I detected a sweet scent; a male *Belenois mesentina*, Cram., also had a sweet scent, which was lacking in two females. *Tarucus theophrastus*, F., was in abundance about bushes; one at rest was seen to move its wings after the manner common among Lycaenids. The take of the day was a nice little series of seven males of *Calopieris eulimine*, Klug, four of them in fine condition. This is not only a scarce, but a most beautiful insect; the orange-tips to its fore-wings are delicately shot with violet, while the veins on the under-side of the hind-wings are brilliant orange.

#### THE WHITE NILE.

Feb. 16th—Feb. 20th, 1909.

Unfortunately a projected journey as far as the Bahr-el-Ghazâl fell through, and I was able to carry out but a very short expedition, which, nevertheless, was the most interesting part of the whole tour.

The steamer was very comfortable and the manager civility itself: indeed so luxurious is travelling now-a-days that we were somewhat disposed to grumble when the supply of ice failed! Yet one might well plead extenuating circumstances, for aerated water without ice is apt to taste flat at 114° F. in the shade. It was, however, really tantalizing to be five days in a country of such possibilities, and yet to get in all less than twelve hours collecting. An entomologist ought, if possible, not to be pressed for time, and he ought to travel in a private steamer.

On February 16th, when about 40 miles above Khartûm, at 4.50 p.m., there being a gentle breeze from the *westward*, numerous lady-birds coming from the *eastward* settled upon the ship. All those examined proved to be *Coccinella 11-punctata*, L., a common Egyptian species. The flight lasted a little over an hour and there must have been hundreds of the beetles.\*

During the greater part of the way the steamer passed through absolutely flat country elevated but little above the river. At this stage interest centred on the number and variety of large birds. We soon came to cranes—grey, demoiselle, and others—storks, ibis, herons; geese of several sorts; ducks and teal innumerable. On low muddy

\* Proc. Ent. Soc. Lond., 1909, p. xxxii.

islands the cranes stood in rows like soldiers, each kind by itself, in scores or hundreds. Of pelicans we saw but few, of flamingoes possibly one or two. Then there was the marabout, which is a very handsome bird; so is the less common fish eagle. There were also kingfishers and other smaller fowl.

Crocodiles were common enough. We soon reached papyrus, at first a plant or two, but later plenty. With the papyrus appeared the hippopotamus. At one stopping place we were brought what we were told was "lotus"—but it was not the *Nelumbium*, but a white water-lily somewhat larger than our English *Nymphæa alba*, L.

Later we entered a very scanty forest which appeared to consist chiefly of acacias and other prickly trees.

The first night, at Getêna (63 m.), three *Noctuæ* came to the steamer's lights, all Egyptian species:—*Agrotis segetum*, Schiff.; *Caradrina exigua*, Hübn.; and *Sesamia* [*Nonaqria*] *cretica*, Led.

The following day, Feb. 17th, I got an hour and a half's collecting in the middle of the day at Ad Duwêm (125 m., lat. 14° 10' N.), but unfortunately much of this precious time was wasted in looking for good collecting ground. A female *Polyommatus bæticus*, L., two males of *Tarucus theophrastus*, F., and a male of *Azanus ubaldus*, Cram., were all Khartûm friends, as were *Beleuois mesentina*, Cram., a male, *Teracolus दौरα*, Klug, of which I got one of each sex, and *T. protomedia*, Klug, of which I also got one of each sex. The last is a strong flier and I missed some in consequence. I did however add one species to my list in the shape of *Teracolus halimede*, Klug (var. *leo*, Butler), of which I got a male, but unfortunately damaged its hind-wing in pinching it. I also got the common wasp, *Eumenes tinctor*, Christ, a female, as well as *Icaria cincta*, Lep., also a female (Mr. Morice regards this as quite a tropical form); the Chrysid *Paruopes viridis*, Brullé; the fly *Agria* [*Sarcophaga*] *auha*, Wied.; *Coccinella 11-punctata*, L.; and the widely distributed *Utetheisa pulchella*, L., of which several were seen. That afternoon, further up the river, a female *Xylocopa æstuanus*, L., came on to the steamer and was captured by Miss Marriage.

On the return voyage three days later (Feb. 20), I got another two hours ashore at Ad Duwêm, from 8.45 to 10.45 a.m. Butterflies were fairly common in and near some gardens a short way up stream, but there was a strong wind and many of them were much torn. On this occasion *Danaïda chrysippus*, L., put in an appearance and I took a male, a fine specimen of the *aleippus* form with hardly any fulvous

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All Communications and Subscriptions during July and August will be attended to by Commander J. J. WALKER, R.N., Aorangi, Lonsdale Road, Summertown, Oxford.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January, 1910, having been so much appreciated by our readers, a third (devoted to *Coleoptera*) was given with the September number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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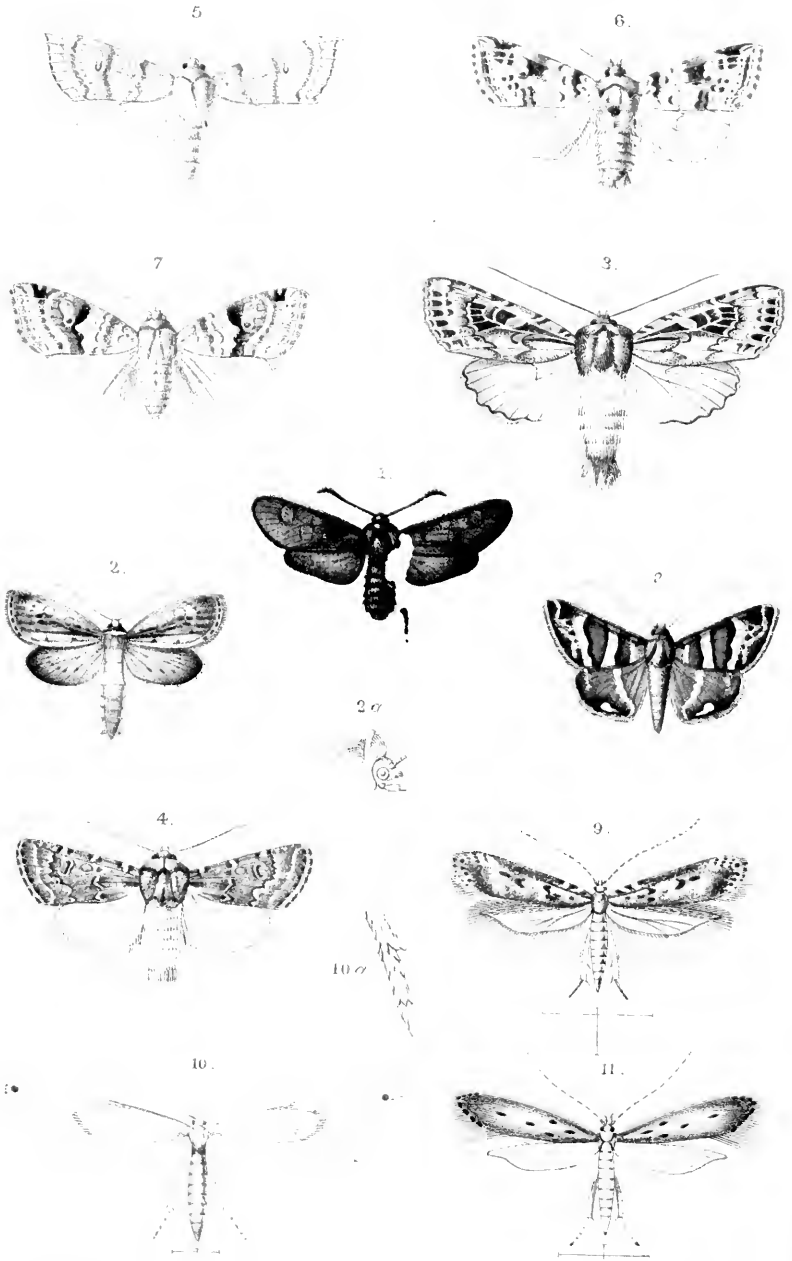
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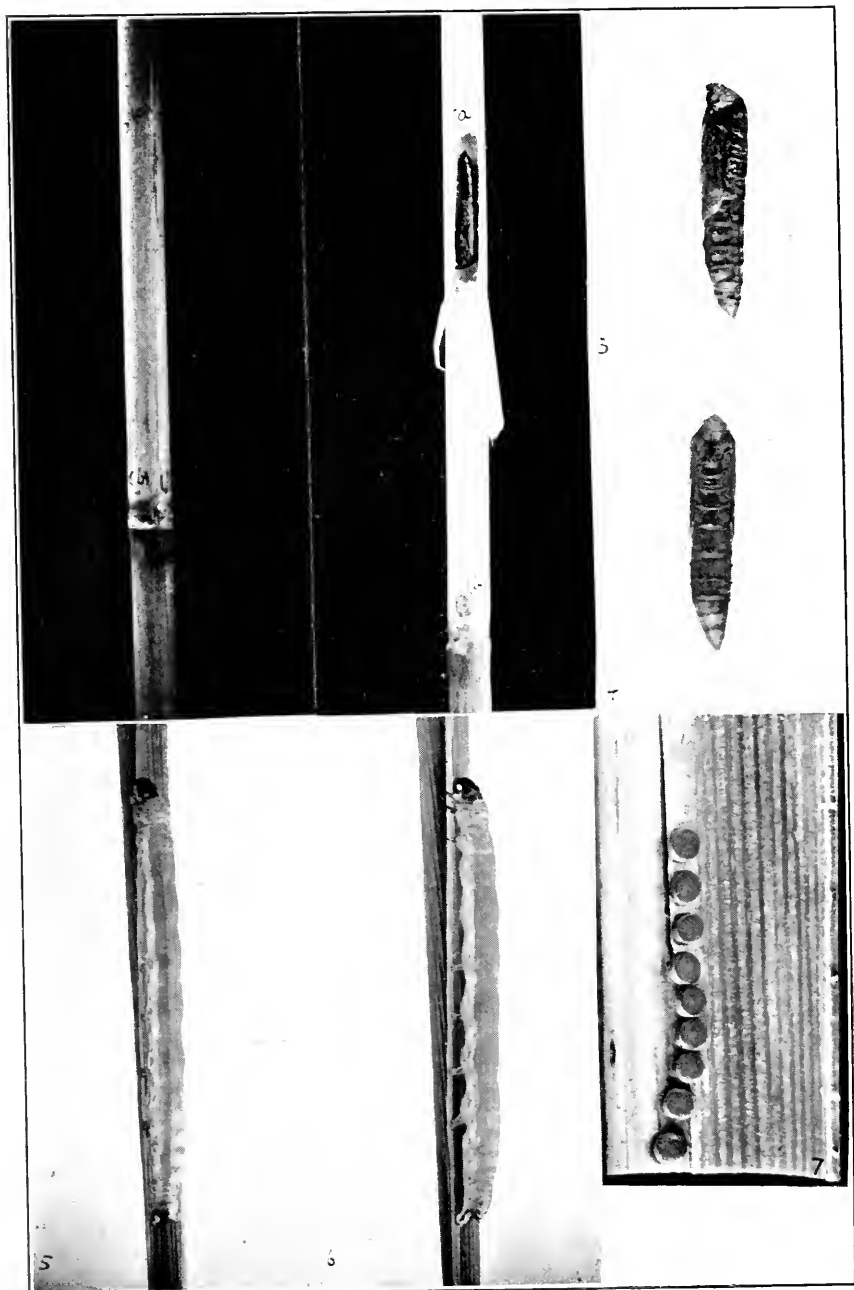




H. Knight & F. O. P. Cambridge del.

Fa. Trap, Leiden, lith.





*Photo—Hugh Main.*

NONAGRIA NEURICA, Hb.



upon the hind-wing; it had the characteristic odour of the species strongly developed. The most conspicuous insect however was *Teracolus protomedia*, Klug, which was common enough, but not very easy to catch in the high wind, though I managed to secure nine, all males. This butterfly seemed to be especially attracted by the red flowers of a *Cesalpinia* in one of the gardens; in three of the specimens I detected a scent, slight but distinct, which was noted at the time as "a somewhat unpleasant stuffy smell"; "a slight scent, scarcely agreeable"; "distinct, dusty, hard to describe." The commonest butterfly would appear to have been *Teracolus दौरα*, Klug, of which I brought away five males and three females, one of the former being a dwarf; a female is recorded as having had a clove-pink scent, both in the field and at home. Of *T. halimede*, Klug, I got one female; of *T. (?) liagore*, Klug, a male. This last must be a very rare species. Dr. Dixey told me that he had never seen a specimen, but he thought that mine must be Klug's *liagore*. I also took five males of *Belenois mesentina*, Cram., three of which had a slight, somewhat hay-like scent.

The flowers of *Parkinsonia* attracted, besides the common *Xylocopa æstuanus*, L., and *Eumenes tinctor*, Christ, the large handsome grey, black and white bee, *Anthophora nubrica*, Lep., of which I secured one of each sex; in company with these was an *Anthophora* that Mr. Morice thinks likely to be the undescribed male of *A. incana*, Klug, of which I seem to have taken the female at the same flowers in the suburbs of Khartûm.

Late at night we reached Kosti, 192 miles from Khartûm. This is the place that is often called after the name of the district, Gôz Abû Gâma. Quite a number of insects came to the lights of the steamer during the evening. Among them was *Cirphis loreyi*, Dup., a rarity in England, but common enough in Egypt. There were also two specimens (males) of a *Trichiura*, which Sir George Hampson thinks to be *obsoleta*, Klug. My Egyptian specimens quite agree with those in the British Museum from Cairo, but the two from Kosti are identical with three from the Blue Nile, and differ from the others in being smaller, darker, and of a blue-grey tint;\* Then there was a little ochreous Noctuid, a species of *Antarchæa*, which is not in the British Museum, also a very distinct Lymantriid, a tiny moth nearly black, with an orange body spotted with black, which Sir George Hampson has described as *Euproctis xanthosoma*, *sp.n.*, adding "very distinct

\* Mr. G. T. Bethune-Baker has described this form as *Trichiura deivita*, *sp. n.*, *Annals and Magazine of Nat. Hist.*, Ser. 8, Vol. vii, June, 1911, pp. 565-566.

from all other species known to me"\*; also a *Schoenobius* and a *Chilo*, both of which appear to be new. With these novelties were the less remarkable *Endotricha consobriualis*, Zell., and the very generally distributed *Hypsopygia mauritialis*, Gn., a species near the British *Pyralis costalis*, Fab.

It is curious in how many places and under what different circumstances I have taken single specimens of *Acridium aegyptiacum*, L. Here it came to light, accompanied by other Acridians and crickets (not yet named), as well as the Mantid *Empusa egea*, Charp., and the cockroach, *Derocarymma porcellio*, Gerst.

The huge but dingy water-bug, *Limnogeton fieberi*, Mayr, was accompanied by a number of beetles, many of them obscure species that I have been unable to identify:—*Opatrum subsulcatum*, Reiche, in some numbers; *Opatrum* sp.; *Tauymecus* sp.; *Teniolobus* sp.; *Chlwinus* sp.; *Pæderus* sp.; *Luciola* sp., not in the British Museum; and lastly a male of the common ant *Myrmecocystus viaticus*, Fab.

At our most southerly point, Gebel En, Lat. 12° 40' N., 238 m. from Khartûm, I had a very short time for collecting. The thin scrub was very dry, there was scarcely any herbage, and but one or two shrubs were still in flower. The heat was intense, 114° F. in the shade, at the same time the sense of hurry was most disconcerting. Under these adverse conditions all that I succeeded in taking back to the ship were two dragon-flies and six butterflies. A male *Danaïda chrysippus*, L., with the usual scent, differed from the type only in having the veins of the hind-wings margined with white; of two *Teracolus halimede*, Klug, one had a large piece missing from a hind-wing; two *T. eupompe*, Klug; and, lastly, a *T. evarae*, Klug, the only specimen that I met with. All these *Teracoli* were males, and the two last named species decidedly "dry."

That night we slept at Rosires (not to be confounded with the place of the same name on the Blue Nile). Here again insects came to light, viz.:—*Cirphis loreyi*, Dup., as before; the ubiquitous *Nomophila noctuella*, Schiff.; a yellowish Arctiid, superficially rather like a *Nomagrila*, not known to Sir George Hampson; another specimen of the new *Antarchaea* previously taken at Kosti; a Lymantriid which Sir George Hampson considers to be the male of an undescribed female from British East Africa, and has described as *Lælia semiunda*, sp. n.†; and the Acridian *Oxyoryphus compressicornis*, Latr. The next morning a

\* Annals and Magazine of Nat. Hist., Ser. 8, Vol. V., May, 1910, p. 437.

† Annals and Magazine of Nat. Hist., Ser. 8, Vol. V., May, 1910, p. 441.

Mantid, *Calidomantis sarignyi*, Sauss., was found on a water-lily on the breakfast table; doubtless it had been attracted by the lights the night before. Several beetles also visited the lights—which were acetylene and not very brilliant—*Cocciuella rufescens*, Muls.; *Brachinus* sp.; *Ora* sp.; *Tanygmeus* sp. (the same as at Kosti); *Pæderus* sp.; and *Chlaenius* sp.

The next morning we left Hillet Abbas at 10.30 a.m., a bare, miserable place, not improved entomologically by a tearing wind. However, besides three dragon-flies, I managed to get hold of one *Azanus ubaldus*, Crum., a female; a female *Teracolus दौरा*, Klug; and two males of *T. halimede*, Klug, var. *leo*, Butler. This last is a delicate insect, white with a cadmium-yellow flush; it appears to have a slight somewhat disagreeable scent. I missed a Blue, probably *Polyommatus batiscus*, L.

On our way down stream again I got three quarters of an hour's collecting at Kosti in a small vegetable garden close to the landing place. Only two butterflies rewarded my efforts, a male *Zizera lysimon*, Hübn., and a male *Danaida chrysippus*, L., the last, taken at onion flowers, was almost typical, with merely a little white along the veins of the hind-wings. It proved tenacious of life and had the usual characteristic scent.

The flowers of carrot yielded a female of *Elis scutalis*, F., a Scoliid of which I had taken several males at Khartûm. When I first met with this in Egypt I had no idea that the sexes were conspecific. The male, very variable in size, is smaller, its abdomen orange-red, ringed with black, its head and thorax covered with grey pubescence (whence the name), its wings transparent. The female is larger and stouter: the pubescence orange, abdomen blue-black, and about two-fifths of the wings purple. On the same flowers I took the beautiful *Eumenes lepelletieri*, Sauss., one of each sex, a fine yellow insect with a black cross on its abdomen; a pair of the yellow-eyed *Tachysphex fluctuatus*, Gerst.; a male of *Odynerus* (?) *bellatulus*, Sauss.; also a Pompilid which puzzles Mr. Morice, but which he thinks may be *Salix bretonii*, Guér. With these was an Egyptian grasshopper, *Chrotogonius lugubris*, Blanch.

We stopped at Tawila (185 m. above Khartûm) to fill up with fuel. Fortunately the process of "wooding" was a slow one and I got ashore from 1.0 to 4.30 p.m. The terrain was covered with a scanty scrub just above the level of the river; the small trees were mostly acacias, but all were exasperatingly thorny. Collecting was good, in spite of

the wind, nearly all my captures being made at one or two late acacias that were still in flower. The sense of hurry and the desire to catch as many things as the time permitted interfered with observation. In the midst of my work I tore my net very badly, but fortunately the steamer was not far off and I ran back to get a new one; curiously enough, two of my best specimens were taken with the damaged net, in spite of a hole quite a foot across. Most of my captures were by this time old friends, e.g., *Tarucus theophrastus*, Fab., two males and a female; *Belenois mesentina*, Cram., a solitary male; *Teracolus protemedia*, Klug, a male with a sweet scent; *T. daira*, Klug, three males and two females, one of each sex was unusually large, but on the other hand one female was a veritable dwarf; *T. eupompe*, Klug, seven males and one female; *T. halimede*, Klug, var. *leo*, Butl., two males and one female.

But besides these old friends I made some new acquaintances, to wit, *Teracolus phisadia*, Godt., six of each sex. The male is very pretty and delicately coloured, being pink with a black border to the wings, one of them was noted as having a sweet luscious scent; the female is sulphur yellow. I also got two *T. calais*, Cram. (a Delhi acquaintance), one of them small. Of *Herpænia criphia*, Godt., I took one of each sex, both quite remarkably small specimens. Two old South African friends also turned up, *Leuceronia buquetii*, Bsd., a female, and three *Virachola antalus*, Hopff.

The only moth that I saw was *Sterrhæa sacraria*, Linn., which I kicked up. There were but two Aculeates in my bag: a male *Eamenes tinctor*, Christ, and a female *E. lepelletieri*, Sauss.

Late that afternoon we stopped at Fachi Shoya, on Abba Island (176 m. above Khartûm), where the Mahdi used to live. I landed and collected from 5.15 p.m. to dusk. The following were for the most part disturbed from grass, &c.:—a nearly typical male *Danaïda chrysippus*, L., only slightly dusted with white; it was tenacious of life and had the characteristic scent; five females of *Teracolus halimede*, Klug; also a female of *T. eupompe*, Klug, lacking the red tip. It is notable that at Tawila, earlier in the day, males prevailed over females. The female of *halimede* is variable, the ground colour is usually white, but in a specimen from Ad Duwêm it was yellow; sometimes there is a mere trace of the yellow flush, but occasionally it approaches that of the male, moreover the black markings vary in intensity.

At Fachi Shoya I got a single moth, a Lithosiid which is almost certainly a new species. A native sailor brought me two beetles, *Rhytina scabriuscula*, Esch., and Mrs. Longstaff found a beetle in our

cabin, *Pheropsophus* (?) *lafertei*, Arrow. That night there was a violent gale from the north, which blew out of my cabin two of my precious Tawila butterflies in their papers! What they were I shall never know, but have an impression that they were *Teracoli* of which I had others. In spite of the gale a Catocaline Noctuid came to light, *Pandesma quenavadi*, Gn., a common Indian form.

On my last night on the White Nile, Feb. 20th, above Geteina, *Phyllodromia treitliana*, Wern., an uncommon cockroach, came to light, and Herr Schwabacher gave me a *Cirphis loreyi*, Dup.

The fauna of the Sudân is extremely interesting from the point of view of geographical distribution. It may indeed be compared to Switzerland, in which country French, Germans, and Italians meet. The insect fauna of Egypt is essentially Palæarctic in character; the great majority of its insects are also to be found in Southern Europe. As examples of Palæarctic species extending through Egypt to the Sudân the following may be mentioned:—*Cirphis loreyi*, Dup.; *Euxoa spinifera*, Hb.; *Caradrina exigua*, Hb.; *Deilephila livornica*, Esp.; *Xylocopa æstuanus*, L.; *Eumenes tinctor*, Christ; *Coccinella 11-punctata*, L.

Another element is the Oriental, which would appear to have reached the Sudân through Persia by way of Arabia. Such insects are *Teracolus calais*, Cram.; *Pandesma quenavadi*, Gn.; *Noorda blitealis*, Walk.; *Arenipses sabella*, Hmps. n.; and *Copicucullia sublutea*, Graes. (though perhaps this last may be reckoned as Palæarctic rather than Oriental).

Other Sudân insects have a far wider distribution such as *Danaïda chrysippus*, L.; *Polyommatus beticus*, L.; *Zizera lysimon*, Hübn.; *Utetheisa pulchella*, L.; *Eromene ocellata*, Haw.; and *Sterrhia saccharia*, L.

Together with these are the almost cosmopolitan *Pyrameis cardui*, L.; *Agrotis upsilon*, Rott.; and *Nomophila noctuella*, Schiff.

Doubtless many at any rate, if not all, of these common insects are to be found in Uganda, yet the fauna of that country may well be considered to be characteristically Ethiopian. From Uganda not a few Ethiopian species have passed to the Sudân, where they meet the Palæarctic and Oriental insects previously named. Such are *Papilio demodocus*, Esp.; *Catopsilia florella*, F.; *Leucronia buquetii*, Bsd.; *Herpænia eriphia*, Godt.; *Calopieris eulimine*, Klug; *Teracolus protomedia*, Klug; *T. daiva*, Klug; *T. chrysonome*, Klug; *T. ephyia*, Klug; *T. halimede*, Klug; *T. phisadia*, Godt.; *T. eupompe*, Klug; *T. liagore*, Klug; and *T. ecarne*, Klug; *Virachola outalus*, Hopff.; and *Lamoria imbella*, Walk.

So far as my slight opportunities enabled me to hazard an opinion, the Palearctic fauna of Egypt extends almost unchanged as far south as Wady Halfa. It would, of course, require much study on the spot to define the line, if such there be, north of which Ethiopian species do not range. The line of demarcation may safely be assumed to be different for different species. For instance, the African butterfly, *Catochrysops elensis*, Dem., is as abundant at Abu Simbel in Nubia, and even at Assouân, as it is at Khartûm; one or two Sudanese moths also, as I have mentioned, extend into Nubia; nevertheless, I was distinctly impressed with the idea that it was south of the Nubian desert, roughly speaking at the River Atbara, say  $17^{\circ} 30' N.$ , that I first came in contact with the Ethiopian fauna, though, on the other hand, forms which occur in the Palearctic Region were common enough at Khartûm and even south of it, but these were for the most part wide-ranging, if not actually cosmopolitan species.

The Hon. N. C. Rothschild stayed for some time at Nakheila, on the Atbara, in 1904, where he and his companions, the Hon. F. R. Henley and Mr. A. F. N. Wollaston, took several species of *Teracolus* and other insects that I met with at Khartûm or South of it.\* Mr. Rothschild informs me that he thinks the *Teracoli* probably extend as far northwards as the thin Acacia scrub, that is to say to some point north of the Atbara, but south of Wady Halfa.

It is interesting to compare with my captures those of Mr. W. L. S. Loat, F.Z.S.,† in 1901 and 1902. Many species are common to the two lists, but not only had he somewhat more time than was at my disposal, but a large number of his insects were taken as far south as lat.  $5^{\circ} N.$ , whereas I did not get beyond  $12^{\circ} 40' N.$ ; it was therefore only to be expected that, as compared with my captures, his were more strongly Ethiopian, including, e.g., a *Neptis* and two species of *Acræa*. Mr. Loat took 11 species of *Teracolus*, I took 10; six species are common to the two lists.

As regards the *Hymenoptera* Mr. Morice writes me:—"I may say that the only insects I had previously examined from Khartûm and the White Nile, were those taken by the Swedish expedition five or six years ago, and you have certainly got much more material than they did—though, strange to say, hardly any of the same species!"

Highlands, Putney Heath:

June, 1911.

\* *Societates Zoologica*, 1905, pp. 21—33.

† *On Lepidoptera from the White Nile*, by F. A. Dixey, M.D., F.R.S.,  
Trans. Ent. Soc., Lond., 1903, p. 141.

## SOME INTERESTING BRITISH INSECTS (IV)

BY G. T. PORRITT, F.L.S., AND E. R. BANKES, M.A., F.E.S.

(PLATE III).

The Plate in this number contains illustrations of nine species of *Lepidoptera* (including a variety), of which little has been known in Britain until the past few years.

Fig. 1.—*Zygæna trifolii* ab. *obscura*, Tutt. This very fine form of *Zygæna trifolii* was taken, and bred from cocoons collected from ling, sparingly, during the three seasons 1908—10, by the late Dr. G. C. Hodgson, in Sussex. It seems to be a parallel variety to the ab. *chrysanthemii*, Borkh., of *Zygæna filipendulæ*, which has also been taken rarely in England. Dr. Hodgson called the form ab. *daimon*, and probably distributed specimens under that name. The form with confluent spots occurs in the variety as in the type. G. T. P.

Figs. 2, 2a.—*Nonagria neurica*, Hübn., ♂.—Taken for the first time in Britain on July 22nd, 1908, by Messrs. Edwin P. Sharp and A. J. Wightman, in the Cuckmere Valley of Sussex. Mr. H. M. Edelsten detected it at once as differing from the species which had for so many years stood in our Lists and Collections as *neurica*, and which must now be labelled *arundineta*, Schmidt. *N. neurica* can be separated immediately by its white collar or crest, which is wanting in *arundineta*. Other differences are, that in *neurica* the central blackish streak contains three white dots, and the underside is without marking. It is, too, a more slender insect than the other. Since its discovery it has been taken in moderate numbers, but as yet, Mr. Sharp tells me, in only one ditch. Fig. 6a shows the form of the crest. G. T. P.

Fig. 3.—*Xylophasia zollikoferi*, Frr., ♂.—The insect figured was shaken out of a bunch of dry leaves at Methley, near Leeds, by Mr. J. T. Wigin, on August 12th, 1910, and is the fifth recorded specimen taken in Britain. The previous records are: one by Mr. Harding, at Deal, early in October, 1867, and now in the late Mr. Henry Doubleday's collection at Bethnal Green Museum; one by Mr. Tait, at Inverurie, near Aberdeen, in September, 1871; one by Mr. T. A. Lofthouse, at sugar, at Linthorpe, Middlesbrough, on September 26th, 1903; and one by Mr. A. Plunkett, at Carrow, near Norwich, on September 4th, 1905. It is a very variable species, and has a fairly wide range in mid Europe, and in Asia, but apparently is not very common anywhere, and nothing whatever seems to be known of its life-history. G. T. P.

Fig. 4.—*Luperina guenei*, Dbl. ♂.—This species was first described and named by the late Mr. Henry Doubleday, in the Entomologists' Annual for 1864, from two out of three specimens taken at Rhyl, in North Wales, by Messrs. T. Porter and H. Stephenson, of Bolton, about 1860 or 1862. Nothing more was heard of the species until 1889, when Mr. T. Baxter found one on the sand-hills at St. Anne's-on-Sea, in Lancashire, and another one two years later in 1891. As the insect was again lost for twenty years, it had become regarded, both in Britain and on the Continent, as a variety of *L. testacea*, but in 1909, Mr. W. Yates found it again at St. Anne's-on-Sea, and he and Mr. T. Baxter then succeeded in getting it in considerable numbers, when its total distinctness from *testacea* was apparent at once. During last year, 1910, it was again taken by several collectors in large numbers. I have seen two specimens of a minor variety (in which the pale line which ordinarily runs parallel with the outer margin is broadened out to the black marginal humules, thus forming a pale stripe), in addition to the melanic form alluded to it in my note on the species in Ent. Mo. Mag., Nov., 1910, p. 263. The specimen figured is from my own series.\*

G. T. P.

Figs. 5, 6 ♂, 7 ♀.—*Xanthia ocellaris*, Bkh., seems to have been first taken in Britain by Mr. E. H. Taylor and Prof. Raphael Meldola, at Wimbledon Common and Twickenham, respectively, as long ago as 1893. Odd specimens continued to turn up year after year, but it was not until Mr. H. O. Mills turned his attention to it, that much was known of it as a British insect. From specimens he took in the Thames Valley in 1907, he reared a considerable number, and has published a history of the species in this Journal (Ent. Mo. Mag., December, 1908, pp. 267-9). From the brood then described, only what is apparently the ordinary form in Britain (Fig. 5) seems to have been bred, but in 1910, a brood reared by Mr. Mills produced two other distinct varieties (Figs. 6 and 7), one of them, as will be

\* Since the foregoing was written, Dr. T. A. Chapman and Mr. H. J. Turner have published (Ent. Record, July-August, 1911, pp. 201-5) an account of investigations by themselves, which go far to establish the correctness of their conclusion that this insect is really identical with the *Luperina nickertii* of Freyer. A close and careful examination of the genitalia of the two show these organs to be apparently absolutely alike; and although, admittedly, there is a good deal of difference in the appearance of the moths, it seems to be the effect of colour only, the markings of both apparently being quite similar. On the other hand, had not the genitalia been examined, it is probable that their distinctness as species would not have been doubted; and as our insular form is, contrary to general experience, as compared with the usual tendency of Continental variation, much the paler form; and that, too, though occurring on ground which distinctly produces melanism in a number of other Noctuae; it seems advisable to await further evidence as to similarity of the eggs, larvæ, &c., before we can be quite certain that both belong to *nickertii*. Moreover, it is likely that Guenee was quite familiar with *nickertii*, and if so, must have been thoroughly satisfied as to the distinctness of *guenei*, or he would not have concurred in Doubleday's suggestion to name it after himself. *Nickertii*, too, is reported as rare on the Continent, whereas *guenei*, although local, is abundant on the spots it does frequent.—G. T. P.



seen from the Plate (Fig. 6), very similar indeed to a form of the well known elm-feeding *Xanthia gilvago*, Esp. *X. ocellaris* feeds on poplar.

G. T. P.

Fig. 8.—*Ophiusa stolidus*, Fab., ♂.—The specimen figured of this beautiful South European Noctua was taken, at sugar, at Galhupton, on the South Devon Coast, by Mr. J. Jäger, on September 23rd, 1903. Its condition was so absolutely fresh, and for a Noctua the species is so frail, that it seems impossible for it to have been an immigrant. And that it had been bred on the spot is still more probable, in that large old bramble bushes (the food plant), which have apparently not been disturbed for many years, abound at the place. Further search in different years, both by Mr. Jäger and myself, however, have failed to produce another, and so it remains at present the only British captured example. The specimen is in Mr. Jäger's collection.

G. T. P.

Fig. 9.—*Gelechia (Lita) salicorniæ*, Hering. (Stgr. and Rbl. Cat. 2703; Meyr. HB. Br. Lp. 592). The references and life-history of this species are given at length in Ent. Mo. Mag., XXX (2nd ser., V), 80, 188-90 (1894), and coloured figures by Mrs. Richardson have been published in the Proceedings of the Dorset Natural History and Antiquarian Field Club, Vol. XVII, Pl. 12, fig. 2 (1896), but as this work is likely to be inaccessible to many Entomologists, the figure of the imago is here reproduced.

E. R. B.

Figs. 10, 10a.—*Argyresthia (?) decimella*, Stn. (Stgr. and Rbl. Cat. 2413).—An account of all we know about the unique example of this species will be found in Ent. Mo. Mag., XXXIV (2nd ser., IX), pp. 263-4 (1878). The species was described by Stainton, Suppl. Cat. Br. Tin. and Pter. p. 10, sp. 61 (1851): the only published figure is that given in F. O. Morris's Nat. Hist. of Brit. Moths, Vol. IV, Pl. 116, fig. 6, p. 150 (1870) from a drawing by the late J. Jenner Weir. The exact record of this specimen was, apparently, Champion Hill, Camberwell, Surrey: June, 1850. Fig. 10a represents the labial palpus.

E. R. B.

Fig. 11.—*Aristotelia tetragonella*, Stn. (Stgr. and Rbl. Cat. 2816; Meyr. HB. Br. Lp. 577). This species, which was described by Stainton, Ent. Mo. Mag., XXII, 99 (1885) as *Gelechia tetragonella*, is now figured for the first time since its discovery in England in 1881. Snellen recorded *A. tetragonella* from Holland in 1889, from specimens taken at Bergen-op-Zoom, in July, 1876; Staudinger and Rebel

(1901), and Spüler (1910) do not extend the distribution. It has been found, as regards the British Isles, in but three localities, *viz.*, Isle of Purbeck (Dorset), King's Lynn (Norfolk), and "near Redcar" (either in Yorkshire or Durham). The larva feeds on *Glaux maritima*; an account of its life-history will be found in Ent. Mo. Mag., Vol. XXXIII (2nd ser. VIII), pp. 5-7 (1897). E. R. B.

June, 1911.

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NOTES ON THE EARLY STAGES OF *NONAGRIA NEURICA*, Hb.,  
IN SUSSEX.

BY H. M. EDELSTEN, F.E.S.

(PLATE IIIA).

The capture of *Nonagria neurica* in England for the first time by Mr. E. P. Sharp, in July, 1908 (Entomologist, xli, pp. 270-1), made me hopeful that at last I might work out its early stages. Accordingly, on June 5th, 1909, I went down to Sussex. Mr. Sharp met me and most kindly took me to the locality. I thought the larva might feed in the same way as that of *N. arundineta*, whose presence is apparent by the withered top of the reed, and, sure enough, it did.

At first we were put off by larvæ of *Nonagria geminipuncta* and *Calamia phragmitidis*, and the larva of some fly, but at last we found a different larva that looked very like that of *N. arundineta*, except that it was not quite so pink along the back. We managed to get about two dozen between us, which produced imagines at the end of July and early August. Eggs were laid on August 4th within the sheathing leaf of a dead reed stem. The egg is of the usual Nonagrid type, coin-shaped, with sides ribbed, about  $\frac{3}{4}$ -1 mm. in diameter. Colour when first laid whitish, afterwards becoming greyish-ochreous. They commenced to hatch on May 16th.

The full-fed larva noted on June 20th was 25 mm. long, of a shining dirty white color, with a very faint tinge of pink in it. Segments tinted with violet posteriorly. Head very deeply indented, color blackish-brown. Thoracic and anal plate greyish-brown; anal plate dotted with numerous tubercles. The dorsal line is very faint, but the spiracular lines are dark grey, and show up much more than the dorsal line. Pro-legs whitish, true legs greyish-yellow. The anal claspers are rather dark marked. The body is covered with numerous tubercles, but they are not so distinct in the full-fed larva as they are in its earlier stages.

When small it is most difficult to distinguish from that of *N. geminipuncta*. The larva is distinct from that of *N. arundineta*,

but does not quite bear out Wilde's statement that it is "of a bluish grey colour." The larva feeds in the same way as that of *arundineta*, entering the reed stem about half way up just above a node, and feeding on the inner lining of the reed. When full-fed it leaves the stem and enters an old stem low down, it makes its emergence hole at the base of the reed, and then walks up the stem as far as the node, makes its puparium, and pupates head downwards.

The pupa is 16 mm. long and very slender, of a bright yellowish brown colour and with a distinct beak. The krenmaster is furnished with many small hooks and bristles. The spiracles are very prominent. As regards the imago, the Continental specimens are paler than ours, especially the Vienna ones, which are of a yellowish olive colour. In addition to the type, we have bred two forms not previously known on the Continent: (1) a blackish-brown form, for which I suggest the name "*fusca*," and (2), a reddish form, which I call "*rufescens*." The insect is extremely local, only occurring in one very small spot at present.

The photographs are by Mr. Hugh Main.

#### EXPLANATION OF PLATE IIIA.

1. Stem showing—
  - (a) Entrance hole of larva.
  - (b) Emergence hole of imago.
2. (a) Pupa *in situ*.  
(b) Emergence hole of imago.
- 3 and 4. Pupa. }  
5 and 6. Larva. } (Enlarged).  
7. Ova *in situ*. }

Forty Hill, Enfield:

August 11th, 1911.

#### ON A NEW SPECIES OF *BARIS* FROM THE SUDÂN.

BY GUY A. K. MARSHALL, F.E.S.

#### *BARIS LORATA*, *sp. nov.*

General colour chestnut-brown; the head and rostrum bare; the prothorax with a longitudinal stripe on each side composed of broad white and yellowish brown scales; elytra rather paler, with a post-median lateral dark brown or blackish patch extending from the margin to the sixth or fifth stria, and with the following markings composed of broad scales:—a large patch surrounding

the humeral angle, brownish yellow dorsally and white laterally, lying between the fifth and tenth striae and extending from the base for one-third the length of the elytra; a small spot just behind the scutellum, composed of six or seven scales and varying from white to yellowish brown; and lastly, a large common apical patch of mixed white and yellow scales, enclosing a dark bare spot on each elytron and having its anterior margin deeply sinuated at the suture; the pygidium closely covered with much smaller scales; the sternum and the median area of the venter clothed with large oblong white or yellowish scales.

*Head* minutely aciculate and with scattered punctures anteriorly. *Rostrum* stout, very strongly curved in the basal half, with coarse confluent punctation at the base, shiny and sparsely punctured anteriorly. *Antennæ* testaceous brown, with sparse scale-like white setæ; joint one of the funicle about equal to the three succeeding joints together, and joint seven connate with the club. *Prothorax* as long as the basal width, very slightly narrowed from the base to beyond the middle, then more rapidly narrowed to the apex, the base strongly bisinuate, the median lobe truncate, the upper surface evenly covered with deep and closely set punctures. *Elytra* broader than the prothorax, broadest at the shoulders and gradually narrowed behind, the posterior callus absent, the apices jointly rounded, the sulci deep and containing large ill-defined punctures, the intervals not broader than the sulci and each with a single row of small distant punctures, from each of which springs a broad recumbent blackish scale-like seta. *Legs* covered throughout with separated elongate white scales, the two basal joints of the tarsi of equal width, claws free.

*Long.*,  $2\frac{1}{2}$ ; *lat.*, 1 mm.

*Hab.*: ANGLO-EGYPTIAN SUBÂN: Khartoum, July, 1910 (*H. H. King*).

*Type* ♀ in the British Museum.

The very characteristic markings of this pretty little *Baris* readily distinguish it from any other described African species of the genus. I have seen three females only, which were bred by Mr. King in July, 1910, from larvæ found boring in the stems of *Portulaca oleracea*, an edible plant used for salads. The species will be figured in the forthcoming Report of the Wellcome Research Laboratories.

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#### ON *CEUTHORRHYNCHUS MARGINATUS*, PAYK., AND SOME ALLIED SPECIES.

BY JAMES EDWARDS, F.E.S.

I propose to discuss here *C. marginatus*, Payk., *C. punctiger*, Gyll., *C. mölleri*, Thoms., *C. rotundatus*, Bris., *C. mölleri*, Schultze, *nee* Thoms., and, incidentally, *Ceuthorrhynchidius distinctus*, Bris. There is a considerable literature dealing with the species in question,

but of the characters therein relied upon for their separation some are certainly illusory and others are subject to great variation, so that one frequently meets with specimens which cannot be certainly determined without reference to the secondary sexual characters; indeed, it may be said that *C. simillimus*, (*nom. nov.* for *C. mölleri*, Schultze) can only be distinguished from *C. marginatus*, Payk., by the difference in the last ventral segment of the male. These secondary sexual characters are worthy of consideration in detail. In the males the last ventral segment has next the hind margin a depression occupying about one-third of the width, and one-half of the length of the segment; this depression is bounded on each side by an elevation which is either as long as the depression (*punctiger*), evident only near the middle of the segment (*marginatus*), or most evident at the hind margin (*mölleri*, *simillimus*); the pygidium is deeply grooved in *punctiger*, and feebly notched in the other species. In the females the last ventral segment has a deep narrow groove reaching from the middle of the hind margin about half way across the segment (*punctiger*), a feeble oval depression in a similar situation (*marginatus*), or is simple (*mölleri*, *simillimus*); the pygidium is deeply grooved (*punctiger*), very indistinctly notched (*mölleri*), or entire (*marginatus*, *simillimus*). *C. marginatus*, *C. punctiger*, and *C. mölleri* (*rotundatus*) are dealt with by Cox (Handbook Col. ii, p. 135) and Fowler (Col. Brit. Isl., V, pp. 344, 345), but in neither case in a manner which would indicate first-hand knowledge of the insects, and the latter author was mistaken in supposing that *mölleri* (*rotundatus*) was entirely omitted by Bedel; on the contrary, M. Bedel characterizes the species in Col. Bass. Seine, VI, p. 169, and on p. 427 refers to its capture at Yport by St. Claire Deville.

Reviewing the material before me, I would separate the species as follows:—

- 1 (6).—Hair-scales on the elytra ochreous, the white scutellar patch therefore very conspicuous.
- 2 (5).—Pygidium of female not strongly grooved.
- 3 (4).—Last ventral segment in male with a broad depression near the middle, bounded on the hind margin by a ridge; on either side of this depression a triangular naked forwardly directed tooth, which is quite free from the hind margin of the segment ..... *marginatus*, Payk.
- 4 (3).—Last ventral segment in male with a large crescent-shaped depression, each horn of the crescent ending on the hind margin in a blunt elevation or tooth ..... [*simillimus*, *nom. nov.*  
(*mölleri*, Schultze).]

- 5 (2).—Pygidium of female strongly grooved. Last ventral segment in male bearing on either side near the hind margin a large ridge-like tooth, which reaches about half the length of the segment; the space between the apices of these teeth excavated in a continuous curve, and not bounded on the hind margin by a ridge. Last ventral segment in female with a deep narrow groove reaching from the middle of the hind margin about half way across the segment .....*punctiger*, Gyll.
- 6 (1).—Hair-scales on the elytra albo-cinereous, the white scutellary patch therefore inconspicuous. Last ventral segment in male with a large crescent-shaped depression, each horn of the crescent ending on the hind margin in a blunt elevation or tooth. Pygidium scarcely perceptibly notched in either sex .....*mülleri*, Thoms.  
(*rotundatus*, Bris.).

*C. marginatus*, Payk.—This may be distinguished from all its allies, except *simillimus*, by the deep irregularly confluent puncturation of the thorax, and a certain square and flat appearance of the front half of the elytra; the interstices of the latter are wide and flat, the striae relatively narrow, and the sides and apex more evidently tuberculated than in the allied species. *C. marginatus* exhibits two well-marked structural aberrations; in one, the *Centhorrhynchidius distinctus* of Brisout, the funiculus is six-jointed, and on comparison of the antennae with those of normal *marginatus*, it is evident that this condition arises from the absence of the suture which would convert the long third joint of the funiculus of *distinctus* into the joints three and four proper to *marginatus*. Of this aberration I have examined eight specimens in coll. Champion from the localities following: Deal, 1 ♂, 3 ♀ (1 ♂, 2 ♀ on the same occasion), Chatham, 1 ♂, Arundel, 1 ♂, Weybridge, 1 ♀, and Reigate, 1 ♂; at Deal, Chatham, and Arundel *marginatus* proper occurred on the same occasion, and I have myself taken ab. *distinctus* at Colesborne, where veritable *marginatus* also occurs. Of the aberration which is distinguished by having the funiculus of one antenna six-jointed and the other seven-jointed, and which might conveniently be called ab. *inequalis*, I have seen but one specimen; this is a male in coll. Champion, and was taken at Deal in 1873 by Commander Walker, who captured ab. *distinctus* on the same occasion; another is recorded by Rye in Ent. Mo. Mag., vi, p. 229. The view here adopted with regard to the relation of ab. *distinctus* and ab. *inequalis* to *C. marginatus* is confirmed by the fact that all Mr. Champion's specimens, as well as my own, exhibit in both sexes the secondary sexual characters proper to *marginatus*.

*C. simillimus*, *nom. nov.* (*mülleri*, Schultze).—This species is described in considerable detail by A. Schultze (*Deutsche Ent. Zeitschr.*,

1895, p. 434), but after examining specimens kindly sent to me by Dr. Everts, who finds the insect commonly in grass fields on *Taraxacum officinale* and allied Compositæ, I can only distinguish it from *marginatus* by the secondary sexual characters of the male; I quite fail to appreciate the difference in contour when seen from the side, which is one of the main features of Schultze's diagnosis. Schultze records the species from all parts of Germany, from Italy, Hungary, Turkey, and East Russia. I have not hitherto seen British examples.

*C. punctiger*, Gyll.—This species is in most cases distinguished from the two preceding by the broadly ovate elytra, and sometimes by having the thorax covered with non-confluent deep close circular punctures; the latter is the state described by Bedel, and the prevalent form here at Colesborne, where I have met with the species very sparingly since 1894. The puncturation of the thorax is not to be relied on as a distinguishing character, because confluence of the punctures occurs in varying degrees, though not so extensively as in *marginatus* and *simillimus*. *C. punctiger* may, however, be easily known in either sex by the very distinct groove on the pygidium. Mr. Champion sends me specimens from the New Forest and Caterham.

*C. mœlleri*, Thoms. (*rotundatus*, Bris.).—Of this very distinct species Dr. Bengtsson has been good enough to lend me two males from Thomson's collection, now in the University Museum at Lund, and these I have, by the courtesy of Mr. Hugh Scott, of the University Museum of Zoology, Cambridge, been able to compare with the only specimen marked *Ceuthorrhynchidius rotundatus*, in Crotch's British collection, and which is presumably referred to in Ent. Mo. Mag., viii, p. 83, as taken by Crotch near London, and confirmed by M. Brisout; there are also four examples, from Caterham and Reigate, in coll. Champion, and Dr. Sharp tells me that he has one. This species has the elytra broadly ovate, as in *punctiger*, but the interstices are evidently narrower in proportion to the striæ, and the colour of the hair-scales is, normally, quite distinctive. Brisout, however, says of the hair-scales "cendrées ou d'un cendré-brunâtre"; I have not seen any British specimens of this latter form, but an example sent by Dr. Everts clearly belongs to it. *C. mœlleri* has the tuberculation of the sides and apex of the elytra less evident than in the other species, but it is nevertheless present.

SPANISH AND MOORISH *MICROLEPIDOPTERA*.

BY THE RIGHT HON. LORD WALSLINGHAM, M.A., LL.D., F.R.S., &amp;c.

[Continued from Vol. XLIV, p. 229 (1908)].

*GELECHIIDAE*.

## 348. SYMMOCA, Hb.

## 30401. SYMMOCA ALHAMBRELLA, sp. n.

*Antennae* brownish cinereous. *Palpi* with the median joint brownish fuscous, tipped with whitish; terminal joint white, dusted with brownish fuscous. *Head* greyish cinereous; face whitish. *Thorax* whitish, dusted with brownish fuscous. *Forewings* whitish cinereous, dusted and shaded with brownish fuscous, of which there is a rather thick sprinkling at the base; a broken fascia, attenuated downward from costa to dorsum at one-third, containing a darker spot on the fold and another at the upper edge of the cell; a broader slightly oblique transverse band just beyond the middle, containing a pair of darker spots, one above the other at the end of the cell; and a broad transverse patch, straight on its inner edge but convex on its outer side, separated from the thickly sprinkled apex and termen by a narrow, outwardly convex, whitish band; there is a slight tinge of ochreous along the cell, and the costal origin of the third pale intermediate band is yellowish; cilia whitish cinereous, dusted with brownish fuscous. *Exp. al.* 13-14 mm. *Hindwings* brownish fuscous; cilia brownish grey. *Abdomen* brownish grey. *Legs* pale brownish cinereous, the tarsi barred with brownish fuscous.

*Type* ♀ (86060). Mus. Wlsm. British Museum.

*Hab.*: SPAIN: GRANADA: Granada, 10.VI.1901 (Wlsm.).

Four specimens, taken in the Generalifé Gardens, among Cypress.

This species is very near to *tofossella* Rbl., but the second dark band is not interrupted nor indented on its outer side, and the dark subapical shade is much wider than in that species.

## SOME INDIAN GRACILARIADS.

BY E. MEYRICK, B.A., F.R.S.

I am desired to publish the following species of *Gracilariadæ*, bred at the Agricultural Institute, Pusa, by the Imperial Entomologist and his staff, in order that they may be quoted in official publications.

## LITHOCOLLETIS CONISTA, n. sp.

♂ ♀. 6 mm. Head ochreous-whitish. Thorax bronzy-ochreous. Forewings lanceolate; shining bronzy-ochreous; two slender, white, transverse fasciæ slightly beyond one-fourth and in middle, angulated in middle, suffusedly edged anteriorly with black irroration; two whitish streaks irrorated with



black from costa before and beyond three-fourths, connected together in disc, and with a similar streak from tornus; cilia whitish, basal half round apex and termen pale shining bronzy-ochreous sprinkled with black. Hind-wings grey; cilia grey-whitish.

Hab.: PUSA, Bengal, bred in June from larvæ mining leaves of *Triumfetta neglecta* (*Tiliaceæ*); two specimens (Fletcher).

ACROCERCOPS ACIDULA, n. sp.

♂ ♀. 6 mm. Head whitish, more or less partially suffused with dark fuscous. Palpi whitish with three dark fuscous bands. Thorax fuscous, irrorated with darker, posteriorly with some whitish scales. Fore-wings elongate-lanceolate; purplish-fuscous irrorated with dark fuscous; three slender yellow-whitish transverse fasciæ edged with some blackish scales, first at one-fourth, rather oblique, tending to be interrupted near dorsum, second median, direct, third at four-fifths, slightly incurved, hardly reaching termen; cilia greyish, with rows of blackish points. Hind-wings and cilia grey.

Hab.: PUSA, bred in June from larvæ mining leaves of *Albizia stipulata* (*Leguminosæ*); three specimens (Fletcher).

ACROCERCOPS TELESTIS, n. sp.

♂ ♀. 7-8 mm. Head whitish. Palpi whitish, second joint fuscous except apex, terminal joint with two fuscous rings. Thorax light brownish. Abdomen white, on dorsum suffused with grey, on sides with series of oblique black marks. Fore-wings very narrowly elongate-lanceolate; light brownish, costal edge dark fuscous; markings white, edged with fuscous; some strigulae at base and on basal portion of dorsum; a slender irregular slightly oblique transverse fascia at one-fourth, enclosing a dark fuscous dot on dorsum; two dots on costa and one on dorsum beyond this; a slender median fascia, furcate on lower half to enclose a triangular dorsal spot of ground colour; an elongate spot on costa beyond this: a rather inwardly oblique slender fascia at three-quarters, also furcate on lower half to enclose a triangular dorsal spot of ground colour; beyond this a slightly upcurved longitudinal black mark edged above with white; two costal wedge-shaped strigulae before apex, second edged posteriorly with black; cilia grey, round apex with a whitish basal shade and black median line. Hind-wings rather dark grey; cilia grey; in ♂ beneath with a long dark grey hair-pencil from base.

Hab.: PUSA, bred in August from larvæ mining leaves of *Trewia nudiflora* (*Euphorbiaceæ*); three specimens (Maxwell-Lefroy).

Thornhanger, Marlborough:

June 30th, 1911

*Caustic fluid of Carabus violaceus.*—Strolling along a road at Monk Soham about late dusk (9.15 p.m.) on July 15th, I picked up a *Carabus violaceus* which was running across it, and, on account of the failing light, held it close to my eyes to see its species. Instantly two squirts of fluid (which burned exactly as did caustic acid some facial moles when I was a boy at school) struck me on the cheek just below the eye, raising small white blisters, which became red in half an hour or so, and shortly disappeared.—CLAUDE MORLEY, Monk Soham, Suffolk: 24th July, 1911.

*Atheta picipennis*, Mann., in the New Forest.—I have taken several specimens of this insect recently in carcasses of rabbits near Brockenhurst. Having devoted a good deal of time during June and July to work in this habitat, I record the following as well, all having been met with in sufficient numbers (except when otherwise noted) to exclude them being reckoned as "strays":—*A. occulta*, Er., *A. corrina*, Th., *A. puberula*, Sharp (two only), *A. canescens*, Sharp, *A. cadaverina*, Bris., and *A. cribrata*, Kr. *A. sordidula*, Er., is common in the district, with *A. cinnamoptera*, Th., in dry dung, and only occasionally occur as strays in carcasses.—M. CAMERON, H.M.S. Attentive, Home Fleet: 19th July, 1911.

*Aleochara discipennis*, Muls., in the New Forest.—Yesterday I had the pleasure of taking a fine fresh specimen of this insect, in horse-dung, in the New Forest. It is not likely to be confounded with any species of the genus other than those having a red mark on each wing-case, and from most of these it is easily distinguished by its more slender antennæ. The red-marked elytra and comparatively slender antennæ bring it nearest perhaps to *A. cuniculorum*. But *discipennis* is about twice the size of the largest *cuniculorum*; it has darker legs and the base of the antenna is black. There is also a good deal of difference in the sculpture of the two species. *A. discipennis* has been found throughout Central Europe, from France to the Caucasus, but is everywhere rare, and I anticipate that it will prove to be very scarce in this country.\* It is placed by Mulsant and Rey in the sub-genus *Polychara* of *Baryodma*.—D. SHARP, Brockenhurst: August 16th, 1911.

*Note on the food-plant of Nanophyes gracilis*, Redt.—Since I first met with this interesting little weevil, at Esher, in August, 1873, and subsequently at Tilgate, Woking, and Brockenhurst, its food-plant has always been an enigma to me, though it is said by continental authorities to have been found on *Lotus uliginosus* and *Erica cinerea*. On August 5th, however, I found specimens of it under more than one plant of *Peplis portula* (water purslane), in a dried up pond near Woking. *Peplis* belongs to the *Lythraceæ*, and it seems to me to be far more likely to be the actual food-plant than either *Lotus* or *Erica*; in fact, I have no recollection of seeing either of these latter in some of the localities where the beetle occurs.—G. C. CHAMPION, Horsef, Woking: August 11th, 1911.

*Criocephalus ferveus*, Muls., near Guildford.—A female of this species has recently been brought me from Guildford. It was found on July 24th crawling

\* This species has been recorded as British in Ent. Mo. Mag., xliii, pp. 102, 103 (1907).—G. C. C.

on the coat of a young friend of mine in his house at that place, the day after he had walked beneath some burnt pines a few miles from the town. *C. ferus* therefore seems to be spreading in Surrey, as it was also taken (singly) in a fresh locality in the Woking district on August 7th. It has almost disappeared from its old habitat at Horsell, a single example only having been taken as yet this season, on August 8th. I have myself found it either on my coat or about the house after arriving home from a walk in the pine-woods, showing that the beetle possesses extraordinary clinging powers.—Iv.

*The habitat of Eristalis æneus, Scop.*—At the northern end of Constantine Bay, St. Merryn, Cornwall, the shore consists of shelving layers of contorted slate sloping down from a height of about 15 feet. These shelves contain many rock pools of different sizes, most of which at different periods are filled by the sea. Those high up are rarely filled and either dry up completely or are supplied with fresh water from small springs; those a little lower down get filled only at the high spring tides (which have an amplitude of some 30 feet), and even then only if those tides coincide with a ground sea. Every gradation exists down to pools filled every tide. On examining the spot about June 19th, I noticed the presence of rat-tailed larvæ in some of the pools that are only filled at the spring tides. The dimples formed by their tails were about one per two square inches, and covered several square feet, so that there was quite a large colony. It appeared that some weeks before there had been a heavy sea that filled these pools with sea-wrack and weed, which was subsequently covered up to a great extent with sand. The hot weather that followed caused active decomposition to set in, so that the pools became filled with the rotting debris and a sort of evil smelling "soup." Some of the pools were tinged deep red with the colour extracted from the weed, and were full of various larvæ, such as *Chironomus* and *Fucomyia*. In certain somewhat shallower pools the *Eristalis* larvæ were found, their bodies being in the rotting weed at the bottom, or more rarely buried in the sand below, with the tube only showing.

Normally the situation is such that the high spring tide sweeps out the pools, but the previous springs had been accompanied by exceptionally smooth seas, so that they did not disturb the pools, and hence the favourable conditions lasted longer than usual. The spring tides of June 26th were accompanied by a moderate ground sea, and the pools were mostly swept by the waves, so that a great many of the larvæ were destroyed. On the return of the neaps the conditions quickly reverted to their former state, but there remained but one small colony of *Eristalis*, and that in a fairly sheltered nook in one of the pools. This colony was progressing well when I left on July 13th, and the perfect insect was flying about the site.

The habitat is such that the pools are exposed for many consecutive days to the hot sun without any chance of replenishment of the water, so that the salinity must vary considerably, and this is apparently without harm to the larvæ. About June 22nd several larvæ were taken from the pool and placed in glass vessel containing water and weed from the pool; this vessel was placed in a tray with a few inches of sand in it, and a strip of slate was placed in the

vessel so that the larvæ could crawl out and drop into the sand to pupate. The whole was placed in the sun, and the water soon evaporated down to about one-third its original amount. The vessel was then replenished with rain water; this was done some two or three times, and in spite of the sudden and great variations in salinity, the larvæ prospered well, pupated, and emerged about July 20th.—C. G. LAMB, Zoological Laboratory, Cambridge: *Aug.*, 1911.

*A case of antennal teratology in the Diptera.*—Among several specimens of *Ptilonota guttata*, Mg. (*Ortalidæ*), which were taken at Tatsfield, Surrey, at the end of last May, one exhibited a remarkable teratology of one antenna. This is shown in the figures, and it will be seen that there is an extra third joint which apparently consists of two fused together, and two complete additional aristas. The upper figure shows the head with the two antenna, the lower

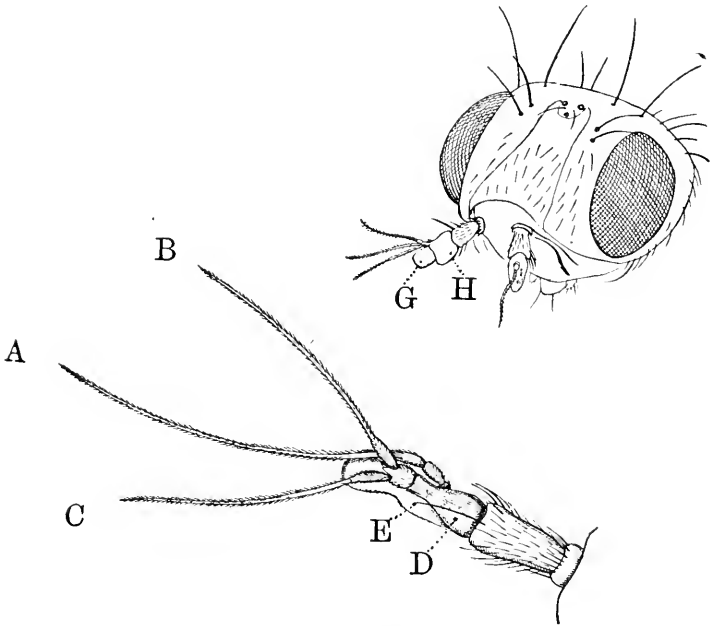


figure is an enlarged view of the left antenna seen from above. A is the normal arista, B and C the accessory ones. G is the accessory fused third joint; its double nature is evident from the fact that, when viewed perpendicularly to the tip, the latter is seen to be deeply sulcate in the plane of the joint. The demarcation between the normal third joint H and the accessory one G, is not quite so definite as shown in the figure, except in the particular view figured.

The accessory aristas are complete and well formed, but are a little smaller than the normal one as shown in the lower figure; the parts indicated by D and E in that figure are both portions of the normal third joint, but owing to a well marked convexity in the side of that joint, a distinct line of demarcation is visible on viewing the antenna in the direction in which the view is drawn.

It will be noticed that the accessory structures agree with Bateson's view of such cases.

The species seems somewhat unstable. There are often accessory veinlets in the wings, and the acrostichal bristles vary in number and in their arrangement. It appears to be of interest to put this case on record, as antennal teratology in the *Diptera* seems very rare. I cannot trace any recent records of such a case, and the present one is the only one that has come under my observation. This is confirmed by Dr. D. Sharp and Mr. J. E. Collin, both of whom inform me that in their experience they have not met with such a case.—ID.: *Aug.*, 1911.

*Colias hyale* in *Oxfordshire*.—On August 16th, while Mr. J. Collins and I were hunting for *Coleoptera* at the celebrated "peat-pits" at Weston-on-the-Green, Oxon, we caught sight of a distinguished-looking butterfly among the "Whites" and other common species in a patch of lucerne adjoining the marsh. A determined joint effort at its capture with our heavy sweeping-nets naturally resulted in failure, but we both got to sufficiently close quarters with the insect to see that it was a very fine freshly emerged ♂ of *Colias hyale*.—JAMES J. WALKER, Oxford: *August 18th*, 1911.

*Vanessa cardui* in *N. Marinc, Shetland*.—On Tuesday morning, 25th July, between 9 and 10, I watched for some time a fine specimen of the "Painted Lady," as it fluttered about or basked in the sunshine by the roadside near the manse.—JAMES WATERSTON, The Manse, Ollaberry, Shetland: *August*, 1911.

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## Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, June 8th*, 1911.—Dr. T. A. CHAPMAN, F.Z.S., in the Chair.

Mr. H. W. Andrews exhibited many species of the Dipterous family, *Syrphidæ*, most of them being from Kent. Capt. P. A. Cardew, an example of *Anarta cordigera*, from Rannoeh, in which the hind margin and base of the fore-wings were of an unusually pale grey. Mr. S. Blenkarn, more than 150 species of *Coleoptera* taken in the Isle of Wight from April 23rd to May 10th, mostly *Geodephaga*. Among them were *Tachyusa umbratica* and *Galerucella calmariensis*, new to the district. Mr. Gadge, a box of *Lepidoptera* set so that the pin did not show through the thorax. Mr. Edwards, a box of the species comprising the genus *Charaxes*, and a larva of *Diloba cæruleocephala*, feeding on laurel. Dr. Chapman, living larvæ of *Collophrys avis*, from the south of France.

*July 15th*, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. Percy Harris, of Streatham Hill, was elected a Member.

Mr. Tonge, ova of *Manduca atropos* dissected from a captured ♀ by the Rev. C. R. N. Burrows. They were infertile, but an ovum laid previously had produced a larva which he now exhibited in the 3rd instar. Mr. Dennis showed some remarkably light coloured pupæ of *Vanessa io* from Claudon. Mr. R. Adkin, a series of *Biston hirtaria* that had remained for three winters in

pupæ and contributed notes. Mr. West (Ashtead), a series of *Dianthæcia capsicola*, bred from *Silene* in his own garden, and a captured headless moth of *Xylophasia hepatica*. Mr. Blenkarn, a selection of *Abraeus grossulariata*, bred from about 2500 Gateshead larvæ. Two nice asymmetrical forms were perhaps the most striking of a scarcely more than ordinary series. Mr. Jäger, a series of twelve *Callimorpha hera*, bred on June 22nd of this year, quite a month earlier than he had ever bred the species before. Mr. W. J. Kaye, a fine aberration of *Mimas tilia*, with the usual transverse fascia of the fore-wings reduced to a very small elongated central spot. Mr. Step read the Report of the Delegates to the Annual Congress of the South Eastern Union of Scientific Societies held at St. Albans in June.—HY. J. TURNER, *Hon. Secretary*.

## Reviews.

A MONOGRAPH OF THE ANOPHELINE MOSQUITOES OF INDIA. By Drs. JAMES and LISTON. Second Edition, re-written and enlarged. Price, £1 5s., from Messrs. Thacker & Co., 2, Creed Lane, London, E.C.

The arrangement of the chapters and the number of coloured plates are the same as in the first Edition published in 1904, but whereas in that Edition the authors were very much opposed to the use of differences in scale structure for the purposes of classification, in the present Edition they have adopted it. It is to be noted, however, that the conclusions they arrive at often differ from those of Theobald, and they state that their classification applies to the females only, and *the scale ornamentation of male anophelines is sometimes different from that of female anophelines* (v, p. 68).

They recognise 12 genera (4 being described as new), and about 30 species (2 new) with 5 varieties (2 new), and give elaborate directions as to the way to proceed in naming a species. The authors evidently consider that the mention of the generic name, *Pseudomyzomyia*, by Theobald in the Errata and Addenda at the beginning of Vol. iv of his Monogr. Culic. (1907), does not constitute publication, for they have re-named the genus *Nyssomyzomyia*. In this they may be right, but their *Nyssorhynchus maculipalpis*, as it is not Giles' species of that name, must be known as *indiensis*, Theobald; it cannot be called *maculipalpis*, James and Liston. The whole work is profusely illustrated, and is a genuine and probably successful attempt to enable fellow-workers to name the Anopheline Mosquitoes of India.

A HANDBOOK OF THE TSETSE-FLIES. By ERNEST E. AUSTEN. Printed by Order of the Trustees of the British Museum. Pp. xx, 110, ten Plates and one Map.

This Handbook is a useful addition to the works on this subject, as it brings together the results of all the work on the genus since the author published his "Monograph" in 1903. It is only necessary to mention that fifteen species are dealt with, in the place of seven in the Monograph, to show

the great strides that have been made in our knowledge of these flies during the last eight years, while a comparison of the map with that published in the Monograph, shows at a glance the remarkable increase in our knowledge of the distribution of these insects. Most of the plates and figures are reproductions of those appearing in the Monograph, the new plates being those of *G. caliginea*, *G. tachinoïdes*, *G. brevipalpis* (*G. fusca* of the Monograph re-drawn), and true *G. fusca*. The two new species described are *G. fuscipleuris* and *G. medicorum*, while the author considers that *maculata*, Newstead, is a synonym of *palpapis*, and *submorsitans*, Newstead, only a form of *morsitans*. There is every appearance of great care having been taken in the preparation of this Handbook, and its publication should be welcomed by those interested in the study of these particular flies.

---

#### A TRIP TO SARDINIA IN 1910.

BY G. C. CHAMPION, F.Z.S.

In 1894 (Trans. Ent. Soc. Lond., pp. 225-242) I published an account of an Entomological excursion to Corsica. I propose now to record briefly my experiences in Sardinia, in 1910, when my friends, MM. A. Dodero and F. Solari, of Genoa, kindly invited me to join them in an excursion to that island. Leaving Genoa by the night train on May 26th, we reached Civita Vecchia early the next morning, spent the day there, and then took the steamer starting in the evening for the Sardinian port of Golfo Aranci, arriving there the following morning at 4 a.m. Our objective point being Aritzu, on the western slope of the Gennargentu range of mountains, in the central portion of the island, a very long detour by train had to be made to reach that place, first to Cagliari (12 hours), and then again northward, by a narrow gauge line to Aritzu (8 hours), this branch terminating at the little inland village of Sorgono. Three days were spent at Cagliari (May 28th-30th), and Aritzu was reached on May 31st, where we remained till June 10th. Fair accommodation was obtained at this mountain village (alt. about 2500 feet), and daily excursions were made from thence to the adjacent slopes, up to perhaps 4500 or 5000 feet. The projected visit to the summit of the main Gennargentu range (alt. about 6000 feet, the highest portion of the island) had, however, to be abandoned, on account of the refuge (where rough sleeping-quarters were formerly obtainable) having fallen to pieces during the previous winter. The mountain slopes immediately above and below Aritzu are thickly clothed with small chestnuts and oaks, followed higher up by a dense growth of heather, cistus, &c., this again being succeeded by oak forest. My friends' chief quest was the

minute blind *Colcoptera* living beneath the immense boulders scattered about this same oak-forest, for which purpose men had to be taken from the village to assist in lifting the stones, carrying the sifted earth, &c. As I had not prepared for serious work of this kind, more time was available for general collecting, and I was therefore enabled to secure specimens of many of the beetles of the district. Under the large stones, in addition to the minute blind insects briefly alluded to in a recent number of this Magazine (*antea*, pp. 138, 139), a *Percus (siculus)*, closely related to the Corsican forms, was abundant, and with it occurred *Calosoma sycophanta*, *Carabus genei*, *Læmosthenes carinatus*, *Machærites ajmerichi*, *Medon apicalis* and *dilutus*, &c. The oak stumps and logs left by the charcoal burners harboured amongst other species the following insects: *Dorens musimon* (the sexes of which are so dissimilar as to appear specifically distinct), *Endophilæus spinulosus* (in abundance), *Colydium elongatum* (in plenty), *Teredus nitidus*, *Brontes planatus*, *Silvanus bidentatus*, *Hypophlæus fasciatus*, *Elater præustus*, *Carpophilus sexpustulatus*, *Epuræa obsoleta*, *Ips quadripustulatus*, *Platypus cylindrus*, *Xyleborus saxeseni*, *Dryocotes villosus*, *Sinoxylon scindentatum*, &c. On the foliage of the oaks, &c., on the steep slopes, were found *Helops genei*, *Atelabus curcutionoides* (varying to wholly black, var. *obsidianus*, Costa), *Phyllobius pilipes*, *Metallites parallelus*, all in abundance; the remarkable Cryptorrhynchid, *Camptorrhynchus simplex*, *Brachyleres incauus*, a *Balaninus*, *Strophosomus coryli*, *Anthonomus spilotus*, *Caulostrophus clarouzei*, *Plinus anbei*, *Malthinus armipes*, *Sphinginus apicalis*, *Telephorus præcox*, *Vibidia 12-guttata*, &c. In the small streams on these slopes were found *Eluis damryi*, and *Hydræna evanesceus*, and *subacuminata*. By sweeping the grass and low plants in the shady spots beneath the chestnuts on the lower slopes were taken, amongst others, the minute black Lycid, *Thilmannus obscurus* (peculiar to Sardinia and Corsica), *Homaligus unicolor*, *Leistus sardous*, and a *Borboropora* (? *reitteri*, Weise); in these places an *Asida* (not yet determined) occurred in plenty, crawling on moss on the ground; and *Heterius ferrugineus*, in an ants' nest, and *Reveliera genei*, both beneath large stones. On the Umbelliferae and other flowers hereabouts, *Valgus hemipterus*, *Anthaxia cæsus*, *Attagenus fallax*, *Hadrotoma variegata* *Trichodes alvearius*, various *Danacæa* and *Haplœcnemus*, and *Cardiophorus ulcerosus*, were more or less common, but the Longicornes were conspicuous by their absence; and from the hedges about the cultivated ground were beaten *Otiorrhynchus koziorowiczi*, Reitt. (det. Solari) and *O. rugosostriatus*, various *Acalles*, *Hypera philanthus*,



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It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, and January and September, 1910, having been so much appreciated by our readers, a fourth (devoted to *Lepidoptera*) is given with the present number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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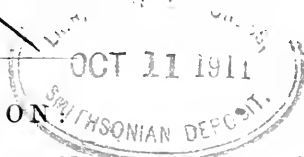
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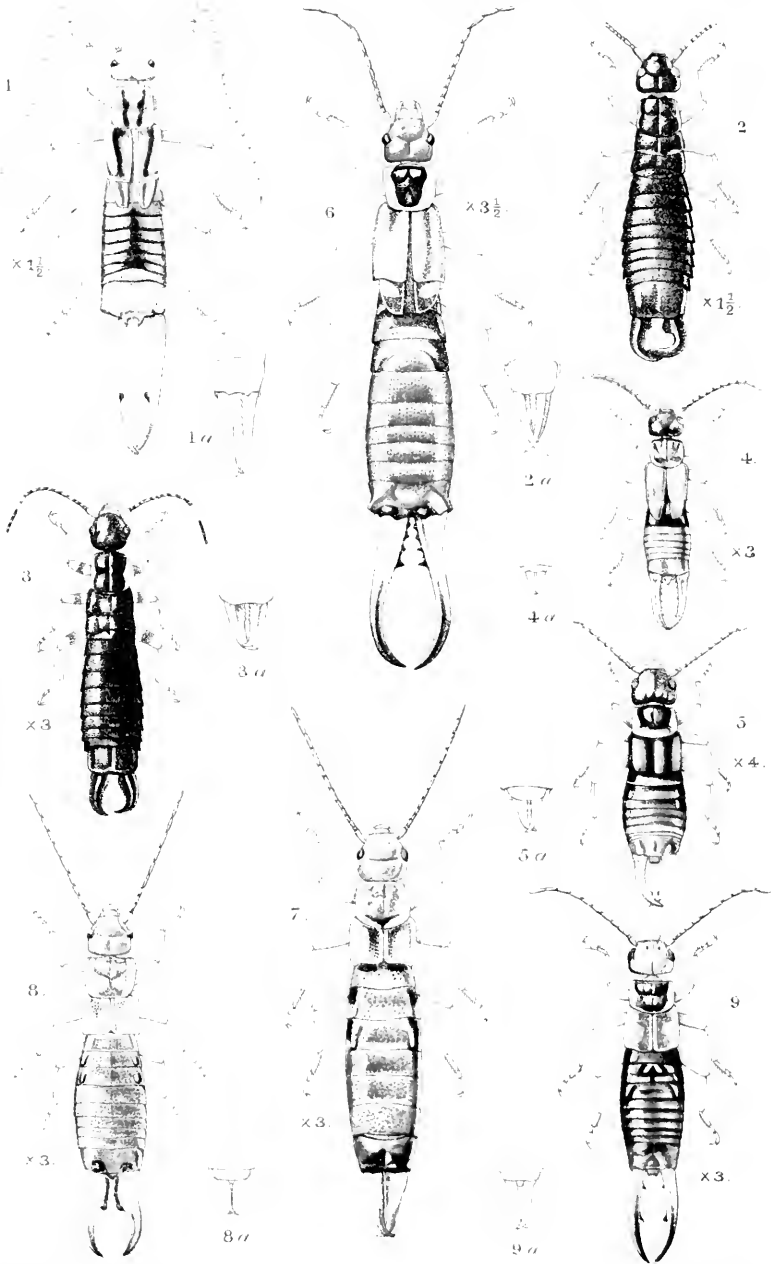
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BRITISH FORFICULIDAE.

*Xylocleptes hispinus*, &c. On the heath, *Nanophyes niger* was to be found, and on *Cistus* two species of *Auletes*—*pubescens* and *politus*. The coprophagous beetles mostly in evidence were *Scarabæus laticollis* and *Sisyphus schæfferi*, both common on the roads, where an occasional *Pimelia* was sometimes seen.

Leaving Aritzu on June 10th we proceeded by train to Sorgono, intending to make our way across country to the main line of railway to the north of Oristano (the west coast near Oristano looking deceptively near from the range of mountains above Aritzu); but this we found on arrival involved a fatiguing journey on rough roads, so there was no help for it but to return again to Cagliari before going northward. From this place excursions were made on May 29th and 30th—one, by driving along the coast westward for about ten miles, to Orra, crossing the extensive estuary to some wooded slopes running down to the sea; the other eastward to the saltings near San Bartolomeo, the great pyramidal mounds of salt (a Government monopoly), being everywhere very conspicuous in these places. In the last mentioned locality *Syrdenus filiformis* (an insect related to *Pogonus*) and one or two *Cicindela*'s abounded on the mud, and with them occurred two local *Anthici*—*doderoi* and *revelierei*; *Pseudophytobius acalloides* (a peculiar Curculionid with strong saltatorial powers) was swept in some numbers from the long grass; *Nephodes metallescens* (an active winged Helopid), *Sphæricus gibbioides* (a very minute Ptinid), *Cardiophorus eleonoræ* and *ulcerosus*, &c., were taken on the Umbelliferæ and other flowers; two *Pimelias* and an *Erodius*, were occasionally seen on the ground; and *Cebrio sardous* was captured on the wing towards dusk. At Orra, various *Nanophyes*, *Coniatus*, *Berginus tamarisci*, *Stylosomus tamaricis*, &c., abounded on the tamarisks; *Agapanthia irrorata* was not rare on the stems of *Ferula*; *Nephodes*, &c., were again met with on the Umbellifers; and *Scymnus kiesewetteri*, *Troglops brevis*, *Dasytes cærulescens*, *Ptinus spitzyi*, *Ceuthorrhynchus molitor* and *assimilis* v. *sardeanensis*, *Baris opiparis* and *cærulescens*, *Pachytychius squamosus*, &c., taken by sweeping.

Leaving Cagliari on June 12th we took the train northward to Golfo Aranci, my friends having to return by the steamer that night to Civita Vecchia. At Golfo Aranci I remained at the small railway hotel till the 19th, a local native collector occasionally accompanying me in my excursions. The country hereabouts is entirely uncultivated and covered with bushes, amongst which many cattle are pastured; it proved to be so infested with ticks that after a time, to avoid their

attacks, my attention had to be restricted to the sandy beaches and adjacent fresh water marshes. In this place, and at Marinella, *Phaleria reyi*, *Scarites lævigatus*, *Saprinus maritimus*, and *Trachyscelis aphodioides* were more or less abundant; the tamarisks produced insects similar to those found at Cagliari; on the mud, about the fresh water marshes, two species of *Ciciadela* (*flexuosa* and *littoralis*), *Bledius spectabilis* and *unicornis*, various *Dyschirii*, and *Tachys scutellaris* were in greater or less numbers; the small streams harboured many *Hydrobius convexus* and *Agabus brunneus*; the small flowering plants on the sand attracted *Clytus rhamni* and *Clytanthus massiliensis*, both in profusion, and the Umbelliferæ on the slopes, *Stenopterus ater*, *Tillus transversalis*, and *Anthaxia cæsus* and *inculta*, amongst others. On the bare ground, amongst the spiny bushes, a *Pimelia* occurred abundantly, and in a small cave on the cliffs near the Capo de Figari, I was introduced by my companion to the blind Curculionid, *Trogloorhynchus doderoi*; *Colaspidea oblonga*, too, was found freely, by sweeping, in marshy places, as well as *Sitones hirsutus* and *revecundus*, a *Bagous*, *Nanophyes nitidulus*, *Triodontu raymondi*, *Anthicus 4-decoratus*, &c.

A long day's excursion to Terranova (about ten miles by train) produced many species not seen elsewhere, the sandy bed and banks of a partly dried up stream in that district harbouring a great variety of insect life. The most noteworthy captures were as follows:—*Omophron variegatus*, *Lionychus sturmi*, *Bembidium küsteri* and *laterale*, *Tachys quadrisignatus*, *Philonthus alygoueus*, *Lathrobium labile*, *Bledius verres*, &c., in the sand; and *Bidessus bicarinatus*, *Hydroporus flavipes* and *rarius*, *Hemisphæra infima*, *Limnebius oblongus*, *Laccobius revelierei*, *Hydroscapha gyrioides*, &c., in the shallow pools, mostly in abundance. *Oberca oculata* was here beaten from sallow; a male of *Pachypus cæsus*, taken on the wing; and a peculiar little Hemipteron, *Sigara leucocephala*, captured in abundance in the gravelly bed of a running stream (in which I happened to rest to bathe), this insect, to my astonishment, jumping like a *Haltica*.

The above list includes only such insects as have at present been identified, but it will give a fair idea of the beetle fauna of the island. From what I saw while travelling up and down Sardinia, there seemed to be vastly more cultivation than in Corsica, especially of cereals, and in places vines. What forest there was seemed to be almost entirely oak, and not much of this could be seen, except in the mountains, though about Macomer a large tract of open oak wood on stony ground was passed through along the main line of railway. There are no Conifers, except where planted, and no forests of beech, such as are to be found



in parts of Corsica; the oaks, moreover, seemed to be in rapid course of destruction, to judge from the continuous stream of bullock carts met with at Aritzu bringing down charcoal from the mountain slopes to the nearest railway station. The mountains, too, are not so high and rugged as in Corsica, and no scenery was seen comparable to that to be found between Vizzavona and Corte in the last named island. Good accommodation is obtainable at the small hotels at the railway stations of Macomer and Golfo Aranci, and rough quarters in the villages. It was, I found, generally considered to be not altogether safe to go about alone in the mountains, the "pastores" having a somewhat doubtful reputation, but I suffered no molestation from them while in such places. As regards *Rhopalocera*, I may perhaps add that I saw none but the generally distributed species, and those mostly hibernated, the best being an occasional *Vaussia urticæ*, var. *ichnusa*. The special butterfly of Sardinia, *Epinephele nurag* (the specific name of which is derived from the ruined circular towers to be seen scattered about the island), could not of course be expected to appear so early in the season.

Horsell: August 11th, 1911.

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ATHETA LILIPUTANA, BRIS., IN BRITAIN.

BY MALCOLM CAMERON, M.B., R.N., F.E.S.

I captured five examples of this insect in small carcasses near Brockenhurst in May and June last. The following description is taken from Ganglbauer (Die Käfer von Mitteleuropa, Vol. II, p. 195).

Very similar to *A. amicula*, from which it is distinguished by its smaller size, more shining thorax and elytra, and much more scattered puncturation.

Black, rather shining, elytra brown, legs brownish-yellow. Head broad, with moderately large prominent eyes, extremely finely punctured. Antennæ rather short, finely ciliated, the first two joints stout, the third much shorter and narrower than second, fourth to tenth transverse, gradually increasing in breadth, the last joints nearly double as broad as long, the terminal one scarcely as long as the two preceding together, oval, pointed. Thorax narrower than elytra, almost half as broad again as long, sides but slightly rounded, shining, very finely and not thickly punctured, and very finely pubescent, with fine cilia at the sides. Elytra about one-third longer than thorax, very finely and somewhat sparingly punctured, finely pubescent. Abdomen shining, the first three visible segments very finely and rather sparingly punctured, the others very sparsely or scarcely punctured. Long, 1.3 mm.

Fauvel states that the ♂ has the head and thorax channelled, and

this feature is present in some of my examples. The same author in his note on *A. puberula*, Sharp (Fn. Gallo-Rhenane, p. 704, obs. 2), states that this insect only differs from *A. liliputana* in having the thorax smoother, the antennæ black, the abdomen a little more distinctly punctured, and in being twice the size. To the above I may add that *A. liliputana* is a parallel-sided insect, in point of size intermediate between *A. inquinula* and *A. mortuorum*, and although the puncturation is fine it is rather rough. From *A. inquinula*, its broader, more robust build, broader and flatter head, and different puncturation will distinguish it; whilst from *A. mortuorum* it may be separated by its smaller size, much more shining head and thorax, and more finely punctured abdomen.

It is, of course, very difficult to draw up a table to distinguish species whose characteristics are, in the main, comparative, but I endeavour to do so in the hope that it may be of some use in the elucidation of the British members of the sub-genus *Microdota*, Rey.

Small or very small species (length 0.7 to 2 mm.), with transverse thorax and parallel-sided abdomen.

A. Fourth joint of antennæ strongly transverse.

1. Length not exceeding 1 mm.

- (a) Puncturation of head and thorax fine but distinct,  
length 0.7 mm. [*inquinula*]  
(b) Puncturation of head and thorax almost effaced, length 1 mm  
[*perezigua*]

2. Size larger.

- (a) Species in great part testaceous .....*palleola*  
(b) Species dark.  
(1) Head, thorax, and elytra dull .....*mortuorum*, *atricolor*\*  
(2) Head, thorax, and elytra shining.  
(a) Legs dark or pitchy .....*atomaria*  
(b) Legs testaceous .....*amicula*

B. Fourth joint of antennæ quadrate or but slightly transverse.

1. Species in great part reddish-testaceous .....*ægra*

2. Species dark.

- (a) Legs dark .....*indubia*  
(b) Legs testaceous, thighs sometimes slightly infuscate.  
(1) Head and thorax very finely, sparingly, obsoletely punctured.....*puberula*  
(2) Head and thorax with distinct puncturation.  
(a) Size larger, more robust, less parallel ...*subtilis*,  
[*indiscreta*\*]  
(b) Size smaller, narrow, more parallel .....*liliputana*

H.M.S. "Attentive,"

Home Fleet:

Sept. 8th, 1911.

\* I do not know these species, but they must be very similar to *A. mortuorum* and *A. subtilis* respectively.

OUR BRITISH *DERMAPTERA*.

BY MALCOLM BURR, D.Sc., M.A., F.E.S., F.L.S., &amp;c.

(PLATE IV).

We have but few *Dermaptera* in Britain, although individuals are often numerous enough. These are generally of one species, for the others are mostly rare and local. There is, moreover, little chance of any additions being made to our list, with the exception of introduced species, unless *Chelidurella acanthopygia*, Gén e, be discovered in this country. It occurs in France, and is not rare in Belgium, so that we may reasonably hope that it may yet be discovered. This insect has been figured and discussed in the *Entomologist*, vol. xxxi, p. 125, pl. ii, figs. 1 and 2 (1898).

In the accompanying Plate, every known truly British species of earwig is figured, and also one or two foreign species which have established themselves here.

Figs. 1, 1a.—*Labidura riparia*, Pallas, ♂; fig. 1a, forceps of ♀.

This well-known species is now absolutely cosmopolitan, and is split into a number of subspecies, varieties or races; its home is probably the Pal arctic Region. It is undoubtedly indigenous in this country, having been recorded from several localities on the south coast, the best known of which is Boscombe, where it occurs on the sandy cliffs by the shore.

Figs. 2, 2a.—*Anisolabis maritima*, Bon.; fig. 2a, forceps of ♀.

This is probably a Pal arctic species also; it is cosmopolitan, and has been taken in this country under artificial conditions in 1856.

Figs. 3, 3a.—*Anisolabis annulipes*, Lucas; fig. 3a, forceps of ♀.

Another cosmopolitan species, occurring in this country in several localities, in bake-houses in Tavistock, under artificial conditions.

Figs. 4, 4a.—*Labia minor*, Linn.; fig. 4a, forceps of ♀.

This species is common enough in Britain, but generally escapes notice; it takes readily to flight, and is often captured on the wing. Truly European, *L. minor* occurs also commonly throughout Africa to as far south as Cape Town, and has been introduced in America. It is apparently not uncommon in Canada and the United States, and also in the Argentine Republic.

Figs 5, 5a.—*Prolabia arachidis*, Yersin; fig. 5a, forceps of ♀.

Another cosmopolitan species of doubtful origin, probably Oriental. It occurs under artificial conditions at Queenborough, Kent.

Fig. 6.—*Forficula auricularia*, Linn., ♂.

The common earwig is familiar to everybody. The figure shows the form *forcipata*, Steph., which is commonest in mountain districts and islands.

Fig. 7.—*Forficula auricularia*, Linn.? ♀.

This figure shows the normal forceps of the female, but the specimen is abnormal in the absence of wings. It is one of two examples taken by me at Compton Bay, Isle of Wight, and discussed in the Ent. Mo. Mag. (2) xviii, p. 173 (1907). It should be noticed that the elytra are somewhat shortened, and that the pronotum is a little broader than in the ordinary male figured. This specimen is practically indistinguishable from the female of *F. decipiens*, Gén e, a common South European insect, and from the female of *F. silana*, Costa, a rare Italian species. I spent a long time hunting in vain for the male, without which it is impossible to settle the question of its identity. A new earwig is not often added to our list, so I hope that all Coleopterists and Hemipterists will keep a good look-out for what appears to be a common earwig with abbreviated wings, and when they find one, send it to me, so that this interesting puzzle may be cleared up.

Figs. 8, 8a.—*Forficula lesuei*, Finot, ♂; fig. 8a, forceps of ♀.

This earwig has been proved to be fairly common and widely spread in the southern counties, and is found as far north as Berkshire; it probably occurs also in Ireland. On the Continent, *F. lesuei* inhabits north-western France and the north-western corner of Spain. It may be taken, often in numbers, by sweeping beds of nettles about dusk.

Figs. 9, 9a.—*Apterygida albipennis*, Meg., ♂; fig. 9a, forceps of ♀.

This common Central European species is now known to be numerous in certain localities in Kent; it appears to prefer the neighbourhood of hop-gardens. *A. albipennis* is probably widely spread, since it is recorded from Norfolk. The female is practically indistinguishable from that of *F. lesuei*. It has the pronotum a trifle broader and squarer than in *F. lesuei*, instead of being very gently widened posteriorly, and somewhat rounded posteriorly, as in the last named insect.

## DESCRIPTION OF A NEW STAPHYLINID BEETLE.

BY DAVID SHARP, M.A., F.R.S.

HOMALOTA (HYDROSMECTA) MUIRI, *sp. n.*

*Depressa, nigra, tibiis extrorsum tarsisque sordide testaceis, omnium densissima punctata, pubescentia densa agre discernenda; antennis gracilibus, extrorsum-leviter crassioribus; capite subquadrato, prothorace haud transverso, posterius leviter angustato. Long.  $2\frac{1}{4}$ — $2\frac{1}{2}$  mm.*

This delicate little creature belongs to a division of *Homalota* containing but few species, from all of which it may be separated by its blacker colour and the excessive minuteness of its dense pubescence. Its place is next to *longula*, Heer. *H. muiri* is distinguished from that species by the characters just mentioned, as well as by the fact that the antennæ certainly become slightly stouter at the extremity. The thorax appears to be quite as long as broad, but measurement shows that the width is slightly greater, in proportion of about 9 to 8. The external differences of the sexes are very slight. The species was first captured by my friend, Mr. F. Muir, a few days ago, in the shingle on the banks of one of the small rivers here. A return to the spot resulted in a few additional specimens. The insect, however, is a very difficult one to secure. The shingle must be pushed into the water, and then the beetle is immediately seen floating on the surface; but so active is it, that it takes flight almost as quickly as the eye can see it.

Brockenhurst:

September 2nd, 1911.

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PERICLISTA PUBESCENS, ZADD., AN UNRECORDED BRITISH SAW-FLY.

BY THE REV. F. D. MORICE, M.A.

*(Pres. Ent. Soc. Lond.).*

I am again, as last year (*Ent. Mo. Mag.*, July, 1910), indebted to my friend Mr. Horace Donisthorpe for the pleasure of making an interesting addition to the List of British *Tenthredinidæ*. On April 28th last he swept or beat from oak leaves at Porlock (Somerset) a ♀ *Periclista*, evidently differing from anything previously known in this country, and agreeing completely with Zaddach's description of his *Selandria* (sic) *pubescens*.

Before venturing, however, to record it under that name, I

thought it wise to submit it to Dr. Enslin for determination; and having now received it back from him as undoubtedly a ♀ of *P. pubescens*, I no longer hesitate to introduce it.

From our other *Periclista* spp. (*melanocephala*, F., and *lineolata*, Kl., cf. Ent. Mo. Mag., June, 1907), *pubescens* ♀, Zadd., may at once be distinguished by the colour of the abdomen. This has its *sides* only (*i.e.*, so much of each dorsal plate as is bent round to overlap the edges of the ventral surface) brightly testaceous, while, in strong contrast to these *reddish* parts, the actual dorsum and the venter itself are *black*, save that each segment has a well defined white apical margin. In *melanocephala* the whole abdomen (above and below) is testaceous. In *lineolata* that colour is absent altogether; the abdominal segments are black throughout, except at their whitish apices.

Other characters for distinguishing the insect are as follows: and I may add that this specimen, which Mr. Donisthorpe has most kindly presented to me, and which lies before me as I write, is considerably larger than any which I possess of *melanocephala* or *lineolata*, its length being very nearly 8 mm.

Head black, except the whitish labrum. Thorax black, with the corners of the pronotum (widely) and the tegulæ lacteous, the cenchri glassy-white. Abdomen black, but each segment above and beneath ringed with clear white at the apex, and the sides of each dorsal-plate and all that part of it which overlaps the venter, brightly rufo-testaceous.

Wings clear. The long and narrow stigma and the whole of the sub-costa dark, as are the other nervures, except at their bases which are lacteous like the tegulæ, &c. (This is especially noticeable in the costa!) Humeral area in hind wing appendiculate.

Legs black at the base, but (N.B.) the femora above and below red, almost from base to apex. The colour of the tibiae and tarsi is obscured in most lights by the dense grey pubescence which clothes them. They are, however, dusky behind, and pale, or almost white—more or less—in front.

The antennæ look longer than in *lineolata*, but the proportions of the several joints are very similar in both species. The clypeus is somewhat raised, and its apex angularly excised. The vertical area is very tumid and well-defined, bounded laterally by conspicuous foveæ, but the sculpture of the frons is rather vague and shallow. The tempora behind the eyes are somewhat sulcate, and sharply separated from the occiput, *i.e.*, “margined.”

The head and thorax are clothed like the legs with a grey pilosity. The abdominal segments above are finely and closely striate (transversely), but at the sides and beneath they appear rather to be rugosely punctured.

According to Zaddach, the ♂ differs from the ♀ in having no red on the abdomen, and very little on the femora. But there seems

to be reason to think that Zaddach's ♂ was really one of *P. lineolata*, and that the true *pubescens* ♂ is an insect more resembling the ♀, which was reared along with the latter by Giraud (Ann. Ent. Soc. France, 1871), and which is stated (*vide* André "Species, &c.," Vol. i, p. 304) to have the "first two" abdominal "segments bordered with white or pale yellow, and all the rest tawny in the middle and whitish on the sides."

*P. pubescens* does not seem to be a common species anywhere, unless perhaps in some parts of Germany. Thomson describes nothing like it in "Hymenoptera Scandinaviæ," nor is it mentioned by Costa among the Italian species. The colouring of the ♀ is so distinctive that it is unlikely to be mistaken for anything else. Now that it is known to occur in this country, it may be hoped that other captures will be made, and possibly such doubts as still remain as to the true ♂ of the species be cleared up.

Its larva is said to be very like that of *lineolata* (for a full description of which *vide* Cameron Mon., Vol. i, p. 242), but without the yellow dorsal line, and of a somewhat greater size (8 lines long according to Zaddach). It should be looked for in June, feeding on oak-leaves, and the imagines should appear in April of the year following.

Brunswick, Woking:

September, 1911.

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ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF  
*MUSCIDÆ ACALYPTRATÆ.*

BY J. E. COLLIN, F.E.S.

(Continued from Vol. xlvii, page 187).

*ASTIADÆ.*

*Astia elegantula*, Zett., was first recorded as occurring in Britain by Mr. F. Jenkinson, on page 4 of this Magazine for 1904. Dr. Wood has since taken it in Herefordshire.

\**Liomyza lævigata*, Meig., may be recognised by its black halteres with yellow stems. I have taken it here at Newmarket and at Barton Mills (Suffolk), also in Woodditton Wood (Cams.) in May and August, while Col. Yerbury has taken it at Tarrington (Hereford). The genus *Liomyza* is now generally considered to be closely allied to *Astia*.

*Liomyza scatophagina*, Fln.—This is the *L. flavipes*, Fln., of the "List," which Zetterstedt sank as a synonym of *scatophagina*. It may be readily distinguished by its pale halteres from *lævigata*, Meig.

*Liomyza glabricula*, Meig.—I cannot recognise this as a distinct British species, and suspect it to be only *scatophagina*. The name must remain in italics in the "List" as requiring confirmation.

DROSOPHILIDÆ.

*Periscelis annulata*, Fln., was first recorded as an addition to our fauna by Mr. C. G. Lamb in this Magazine for 1904, p. 277. I took a male at Boyton (Suffolk) in June, 1910.

\**Periscelis nigra*, Zett.—This species was described by Zetterstedt as *Asteia nigra* (and so appears in Kertész's "Katalog"), because the cross-vein closing the discal cell is absent, in which character it agrees with *P. annulipes*, Lw., differing however in having paler antennæ, a silvery-white lower part to the face, &c. Mr. C. G. Lamb found it at Nethy Bridge in June, 1905.

*Actetoxenus formosus*, Lw.—This is the *A. syrphoides* of the "List" (v. Ent. Mo. Mag., 1902, p. 282). In Kertész's "Katalog" it is placed under the genus *Gitona*, and is called *ornata*, Meig., but it must be generically distinct from *Gitona* because of its flat face and the absence of ocellar bristles, while *ornata*, Meig., was probably a true *Agromyza*, for Meigen's description of the abdomen in no way applies to *formosus*, Lw.

*Phortica variegata*, Fln., was first recognised as occurring in Britain by Dr. Sharp (v. this Magazine for 1903, p. 248). Col. Yerbury has since taken it in some numbers on a cossus-infested tree in the New Forest in company with the next species.

\**Phortica albo guttata*, Wahlbg., differs from *variegata* in being a shining black species, with the front month-edge, the humeri, a spot under the wing, and the club of the halteres pure white. Col. Yerbury's specimens were taken in September, 1909, in the New Forest (Hants).

*Stegana eurvipennis*, Fln.—I have not seen a British specimen of this species, though it must occur in Britain. It remains in the "List" upon the authority of Haliday (Walker's Ins. Brit. Dipt., iii, p. xiv).

*Drosophila tristis*, Fln.—I found a number of this species frequenting a cossus-infested tree at Barton Mills (Suffolk) in May, 1909. Fallen's name has been universally recognised as applying to a species of *Drosophila*, near *obscura*; Zetterstedt, in describing the species, said, "*Ipsissimum specimen quod descripsit Fallen jam ante oculos habeo & illud cum nostris bene congruentibus comparavi*," and though the specimen under the name *tristis* in Fallen's collection may now be found to be an example of *Diastata punctum*, I consider that Zetterstedt's interpretation of the species must be accepted, for there is no proof that the specimen now in Fallen's collection is the original type seen by Zetterstedt, which type may well have been misplaced or destroyed.

\**Drosophila rufifrons*, Lw.—This belongs to the *tristis* group, and may be known by its simple male front tarsi and the reddish tinge to the frontal stripe. Mr. Verrall took it in some numbers at Lingfield (Surrey) on July 30th, 1887, and I have records of it from the New Forest (Hampshire).

\**Chymomyza fuscimana*, Zett.—Czerny founded this genus in 1903 (Zeitschr. Hym. Dipt. iii, 199), its distinctive characters lying in the flat face with a



central keel, the presence of three pairs of strong orbital bristles, the front pair pointing backwards, the very minute postvertical bristles, &c. *C. fuscimana* has the frons and thorax yellowish, abdomen shining black, legs pale, with the end of front femora and the front tibiae and tarsi more or less darkened, though often only indistinctly, the costal vein dark, and there is a distinct cloud below the end of the radial vein, the actual tip of the wing being whitish. Col. Yerbury took four males at Tarrington, Herefordshire, in July, 1902. *Drosophila distincta*, Egger, must be a synonym.

\**Chymomyza costata*, Zett.—This is a much darker insect than *fuscimana*, the frons and thorax being greyish-black, the costa darkened, but the tip of wing not whitish. Col. Yerbury found a male at Nairn in July, 1905; I took a female at Chippenham (Cambs.) in September, 1908, and Mr. C. G. Lamb has found it in the New Forest (Hants).

\**Drosophila ingrata*, Hal.—I have not been able to recognise this species described by Haliday as "distinguished from the last (*tristis*, Fln.) by the "broad and short hind shanks and feet," and further distinguished by Curtis (Brit. Ent., 473) under the name *nigrita*, Hal., for I have very little doubt that these two names refer to the same insect.

*Drosophila littoralis*, Meig.—I know of no British species of *Drosophila* answering to Meigen's description.

*Scaptomyza flava*, Fln.—Fallen's species is a true *Drosophila*, while the species given by Curtis as British under this name was *flaveola*, Meig., = *apicalis*, Hardy, = *pallida*, Zett. (v. Hal., in Walker's Ins. Brit. Dipt., iii, p. xiv). Therefore, *D. flava*, Fln., remains unconfirmed as British.

*Scaptomyza gracilis*, Wlk.—Haliday pointed out in Walker's Ins. Brit. Dipt., iii, p. xiv, that this species belongs to the genus "*Opomyza*, Mg., = *Lepatomyza*, Mcq., = *Anthophilina*, Zett.," by which he meant what we now call *Anthomyza*, Fln., and as an *Anthomyza gracilis* already existed, whatever Walker's species may be, his name cannot stand.

\**Scaptomyza tetrasticha*, Becker.—This species, distinguished from *graminum* by the four rows of acrostichal bristles, is not uncommon in England.

\**Camilla acutipennis*, Lw.—I recognise this species in two specimens taken at Orford (Suffolk) by myself in the middle of June, 1907, and one by Col. Yerbury at Tarrington (Hereford) in August, 1902. The genus appears in the "List" as *Noterophila*, Rnd., but there is no valid reason for supplanting Haliday's name of *Camilla*.

#### GEOMYZIDÆ.

\**Diastata vagans*, Lw.—A female of this species was taken by Col. Yerbury at Nairn (Scotland), on July 4th, 1904. It is very distinct in having the whole length of the costa and the postical cross-vein infuscated.

*Diastata fuscula*, Fln.—I am convinced that this is the correct name for *fulvifrons*, Hal., and *inornata*, Lw., though it appears in Kertész's "Katalog" under *costata*, Mg. Fallen no doubt had both *costata*, Mg., and *inornata*, Lw. = *fulvifrons*, Hal., under his *fuscula*, but his description does not apply so well to *costata*. Haliday himself sank his *fulvifrons* as a synonym of *fuscula*, and Haliday's species was certainly not *costata*, Mg.

\**Geomyza frontalis*, Fln.—In this species the wings are without markings, and only the front legs more or less darkened (in the female, entirely black, except coxæ, trochanters, and extreme base of femora; in the male, with only the front femora darkened, or in a variety of that sex with also the front tibiæ more or less, and the basal joint of hind tarsi, darkened). I take this species in the garden at Newmarket (Suffolk) in June and July, and Col. Yerbury has taken a specimen at Ringwood (Hants). The variety has been found by Dr. Wood in his garden at Tarrington (Herefordshire) in June.

\**Opomyza lineatopunctata*, v. Roser.—In this species the darkening of the wing at the junction with the costa of the radial, cubital, and discal veins, forms one continuous patch, both the cross veins and the whole of the postical vein are broadly darkened, and there are several round, dark spots on the last portion of the cubital vein, and one on the last portion of the discal vein. It was found by Mr. F. Jenkinson at Crowboro' (Sussex) on July 27th, 1905, and the Rev. O. Pickard-Cambridge has taken it near Bloxworth (Dorset).

*Opomyza asteia*, Hal.—I think this must be our *Liomyza scatophagina*, Fln.

*Balioptera venusta*, Meig.—I have not seen a British specimen of this species, though I have no doubt it will be found.

*Balioptera apicalis*, Meig.—Two females were taken by Mr. Verrall at Burnham (Essex) in August, 1881. The very narrow wings, with a large apical cloud and very narrow darkening to only the postical cross-vein, render the identification of this species an easy matter.

*Anthomyza sabulosa*, Hal.—This is the *Geomyza sabulosa* of the "List."

\**Anthomyza pallida*, Zett., may be known, as its name indicates, by its pale colour. I have taken it at Chillesford (Suffolk), Snailwell (Cambs.), and near Tarrington (Herefordshire).

\**Anthomyza albimana*, Meig.—This is a very distinct dark species with pale legs, except for a ring at the end of the front femora, the front tibiæ except at the base, and the basal joint of the front tarsi. Col. Yerbury caught it at Studland (Dorset) in August, 1909, and I took a female near Boyton (Suffolk) in August, 1907.

*Anthomyza unguicella*, Zett.—This was first recorded as occurring in Britain by Mr. Mallock in this Magazine for 1908, p. 138.

*Anthomyza cingulata*, Hal.—This is the *Geomyza cingulata* of the "List."

\**Anthomyza sordidella*, Zett.—This is undoubtedly distinct from *gracilis*, Fln. It is altogether darker, and there are differences in the male genitalia. I have seen specimens from Tarrington (Herefordshire), Porthcawl (Glamorgan), Worth (Dorset), and Nairn in Scotland, most of them taken by Col. Yerbury.

\**Anagnota bicolor*, Meig.—I have specimens from Walton-on-Naze (Essex), Chillesford (Suffolk), Studland (Dorset), and Clifford's Castle (Herefordshire). It comes near to *Paranthomyza nitida*, but the frons is dull black with silvery orbits, and the arista long-haired.

*Paranthomyza nitida*, Meig.—This is the *Anthomyza flavipes*, Zett., of the "List" for which Czerny has founded the genus *Paranthomyza*.

*Chiromyia oppidana*, Scop.—Bezzi (1904) has come to the conclusion that Desvoidy's name of *Chiromyia* must be used for the genus *Pelethophila* of the "List," and that *lutea*, Fln., must be known as *oppidana*, Scop.

\**Chiromyia minima*, Becker.—This was described by Becker in 1904 from Livland. I found it at Butley (Suffolk) on August 29th, 1907, when I took three specimens, while I had previously taken single specimens at Palling-on-Sea (Norfolk) and Barton Mills (Suffolk) in August, 1906. It is quite distinct from *flava* in the shape of the eyes, which are transversely oval, in having only four rows of acrostichal bristles, and by its bare disc to the scutellum.

*Rhcnöessa*, Lw., and *Tethina*, Hal.—For these genera, see under the *Milichidæ*.

#### OCHTHIPHILIDÆ.

\**Ochthiphila fasciata*, Lw.—Dr. Wood finds this species in Herefordshire in July, and Dr. Sharp has taken it in the New Forest (Hants) in June. It is very distinct with its yellow third antennal joint and palpi, and the interrupted black fasciæ on the abdomen.

\**Parochthiphila coronata*, Lw.—Czerny (1904) proposed this genus for those species of *Ochthiphila* with the front orbital bristle at the middle of the frons, four pairs dorso-central bristles, and mesopleuræ bearing a bristle. *O. spectabilis*, Lw., of the "List," belongs to this genus. *P. coronata* was found by Col. Yerbury at Walton-on-Naze in July, 1909; it can be separated from *P. spectabilis* by its black palpi and antennæ.

\**Leucopsis argentata*, Heeger.—This is a very silvery grey species with milk-white wings, the thorax very faintly striped, the abdomen with only an indication of a central stripe, and the frons entirely grey. I have taken it in Cambridge-shire and Suffolk by sweeping reeds in marshy places.

#### MILICHIDÆ.

*Milichia luteus*, Whlbg.—Mr. H. Donisthorpe has recorded the occurrence of this species in England (Ent. Record, 1909, p. 289), it has some connection with the ant *Lasius fuliginosus*.

*Milichia ornata*, Zett., of the "List," is now placed among the *Agromyzidæ* as *Odinia maculata*, Meig.

\**Phyllomyza flavitarsis*, Meig.—This much resembles *P. securicornis*, but may be known by its dark halteres and tibiae. Col. Yerbury has taken it at Walton-on-Naze (Essex), in June, and Christchurch (Hants), in May. It is the *Agromyza flavitarsis* of Meigen; *Oponomyza flavitarsis*, Meig., was acknowledged by Meigen himself (Syst. Besch. vi, 384) to be the same as *P. securicornis*, Fln.

*Desmometopa sordidum*, Fln.—This is apparently the name under which *D. M-atrum* of the "List" must for the future be known.

*Meoneura*. This genus of Rondani's, founded for *Agromyza obscurella*, Fln., is now recognised as belonging to the *Milichidæ*; in addition to *A. obscurella*, Fln., two more of the British species of *Agromyza* (*vagans*, Fln., and *lactei-pennis*, Fln.), thus belong to this genus, while, according to the descriptions, the European *A. elongella*, Zett., *A. infusata*, Meig., *A. minutissima*, Zett., and *A. pectinata*, Meig., should be placed here.

*Madiza latipes*, Meig.—The genus *Madiza* is now placed in the *Milichidæ*, and I can confirm *M. latipes* as being British, for I have seen specimens in the collections at Cambridge. I consider that the shape of the face and the long pointed chitinous band down the middle of the frontal stripe, prove its correct location in *Madiza*, instead of in *Desmometopa*, where it has been placed by Becker.

*Cacoxenus*.—This genus is placed by Becker among the *Agromyzidæ*, but it cannot possibly belong to that family. It seems to resemble in many ways the genera at the commencement of the *Drosophilidæ* such as *Acetoxenus*, *Leucophenga*, and *Phortica*, and may ultimately have to be located there, but at present I leave it in the *Milichidæ* where it has been placed by Loew, Schiner, and others.

\**Rhincöessa longirostris*, Loew.—I am content with the identification of this species as British, because my specimens agree with one under that name in Kowarz's Collection, labelled "*sec. typ. Loewii*." I have myself caught and seen specimens from various sea-coast localities in Suffolk, Essex, and Dorsetshire.

*Rhincöessa grisea*, Flin.—This is the *Anthomyza grisea* of the old "List," and is also a sea-coast insect.

*Tethina illota*, Hal.—This species has not been correctly recognised by Kuntze and Strobl, for their specimens must be *Rhincöessa cinerella*, Hal., or a very closely allied species, and Haliday's description of *illota*: "*Facies impressa, epistomate prominulo nudo. Peristoma elongatum. Labium cylindricum bigeni-culatum*" could not apply to *cinerella*. I am not certain that my own identification is correct, but specimens taken at Porthcawl (Glamorgan), in June and July, 1906, by Col. Yerbury, which would answer to the descriptions of *Rhincöessa griseola*, v. der Wulp = *alboretulosa*, Strobl, represent my idea of *Tethina illota*. I refrain from substituting the name *Tethina* for *Rhincöessa* until such time as I can prove the correctness of my views.

(To be concluded).

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NOTES ON THE OCCURRENCE OF *XENOPSYLLA SCOPULIFER*,  
ROTHS., IN GERMAN EAST AFRICA.

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.L.S.

Messrs. Schuberg and Mantenfel record this species from German East Africa as having been taken from rats.<sup>1</sup> This record has been quoted by Messrs. Chick and Martin<sup>2</sup> in their recently published valuable paper. Through the kindness of the Director of the Kaiserliche Gesundheitsamt in Berlin, we have been able to examine these specimens, which are *Xenopsylla brasiliensis*, Baker, and not *Xenop-*

*sylla scopulifer*, Rothschild. In our previous paper in Parasitology,<sup>3</sup> *Xenopsylla brasiliensis*, Baker, was treated as a synonym of *cheopis*, Rothschild, but as we have already published,<sup>4</sup> after critically examining Mr. Baker's types of this species, it is evident that it is a distinct species, and the name must be retained for the species we named *X. vigetus*.<sup>5</sup>

Arundel House,  
Kensington Palace Gardens:  
Sept. 12th, 1911.

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*Bledius crassicolis*, Lac., at Wicken Fen.—As this species has only hitherto been recorded from coast localities—Deal and Rye—it is perhaps worth recording that in April, 1910, I took a specimen in sedge refuse at Wicken Fen; Mr. W. E. Sharp informs me that he has also taken the species this summer at the same locality. On the Continent it is recorded from hilly and woody localities, on the banks of streams and in marshes, so that it will probably turn up in other localities in this country.—T. HUDSON BEARE, Edinburgh: September, 1911.

*Limenitis sibylla double-brooded*.—To-day, while I was looking for larvae among young aspens in a wood not far from here, I was much surprised at seeing *Limenitis sibylla* settle on a bramble leaf close to me. I watched it for some moments while it gently raised and lowered its wings, and then it floated away gracefully to another leaf. This, I thought, could hardly be a retarded specimen, it was far too late for that; it must be one of a second brood. I went on, and, in the course of an hour, saw six or seven more, all quite fresh and exceptionally fine. Of course, these were all individuals of a partial second brood, the result of the abnormally hot dry summer; and I believe it is an unprecedented event, for I cannot find any records of a second brood in any of my Entomological books, though I have not been through all the back volumes of the Magazines. I should like to know if any one else has ever met with, or heard of, a second brood. It does not appear to be double-brooded on the Continent, though its near ally, *camilla*, is undoubtedly so in the South. I was in the wood on several occasions during August and the beginning of this month, but there were none about then, so those I saw to-day can have only recently emerged. The first specimen this year was seen on June 14th.—GERVASE F. MATHEW, Dovercourt, Essex: September 19th, 1911.

<sup>1</sup> Arb. u. d. Kais. Gesundheitsamte, Vol. xxxiii, p. 559. (1910).

<sup>2</sup> Journal of Hygiene, Vol. xi, No. 1, p. 129. (1911).

<sup>3</sup> Parasitology, Vol. 1, p. 42. (1908).

<sup>4</sup> Novit. Zoolog., Vol. xvi, p. 332. (1909).

<sup>5</sup> Novit. Zoolog. Vol. xvi, p. 53 (Pl. viii, Figs. 3 and 4). (1909).

*Vanessa antiopa* in Kent.—It may interest you to know that my nephew, aged 6, caught a “Camberwell Beauty” in my garden last Sunday, August 20th, the first time he had used a net. Could any of the readers of your Magazine tell me whether this rare butterfly is British bred, or if it has been blown across the Channel? In this week’s “Spectator” there is an account of one having been seen at Sheringham.—GEORGE A. ASPREY, The Court Lodge, Chelsfield, Kent: August 26th, 1911.

*Note on Argyresthia decimella*, Stainton.—I have never seen the unique example of this species, but from the figure published in the September number of this Magazine, I should have little hesitation, under the circumstances, in regarding it as an aberration of the well-known *Lithocolletis roboris*, Z. The palpus figured is characteristic of *Lithocolletis*.—E. MEYRICK, Thornhanger, Marlborough: September 1st, 1911.

*Ceropales variegatus*, Fab., in the New Forest.—As captures of the ♂ of this rare species have only been recorded by Smith (1845), Mortimer (1896), and Hamm (1908), it may be of interest to record the capture of six ♂♂’s and one ♀ on the 4th and 8th of August last in the New Forest. The heat of the sun on those days was almost unbearable, and one was driven to shelter under some of the young fir trees between twelve and one o’clock. When doing so I was surprised to see *Cerceris*, *Halictus*, *Andrena* ♂♂, *Nomada*, etc., creeping in evidently for the same purpose, as they rested in the shade for long intervals before again taking flight.—E. B. NEVINSON, Morland, Cobham, Surrey: September 7th, 1911.

*Capture of Ctenophora flavolata*, F.—I have pleasure in recording the capture of a specimen of this rare Dipteron, which my little boy found in the New Forest a few days ago. I recorded two specimens in 1902 (Ent. Mo. Mag. vol. xxxviii, p. 270) which are now in the British Museum Collection, and in 1903 I took another example.—HERBERT ASHBY, Oakwood Lodge, Chandler’s Ford, near Southampton: July 6th, 1911.

*Nirmus uncinus*, N., in Shetland.—Several examples of this beautifully marked parasite occurred on a specimen of *Corvus cornix* shot on Gluss Isle, N. Mavine, on 28th July. During the past eighteen months a large number of hooded crows had been fruitlessly examined, and it is, perhaps, worth noting that the present host was a young bird of the year. There is very distinct sexual dimorphism in this *Nirmus*. Indeed, as Denny long ago remarked, the general facies of the male is Docophoroid rather than Nirmoid.—JAMES WATERSTON, The Maunse, Ollaberry, Shetland: August, 1911.

[The genus *Nirmus* belongs to the “Mallophaga or “Bird-Lice,” cf. Sharp, Cambridge Natural History, Insects, I, p. 346.—EDS.]

## Obituary.

*George Henry Verrall.*—It is with sincere regret that we announce the death, on September 16th, in his sixty-fourth year, of Mr. G. H. Verrall, the eminent Dipterist, and a former President of the Entomological Society of London. A full account of his life and Entomological work will be given in our November number.

## Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:  
*Thursday, July 27th, 1911.*—Mr. R. ADKIN, F.E.S., in the Chair.

Mr. Kenneth J. Blair, of Highgate, N., was elected a Member.

Mr. West exhibited numerous interesting captures in the New Forest, including *Egeria sphaeriformis*, a suffused specimen of *Anthrocerus trifolii*, a short series of *Cicadetta montana*, including the rarely met with ♀, and the local Heteropteron, *Eysarcoris æneus*. Mr. Stanley Edwards, the very handsome Lycænid, *Stalactis evelina*, and several beautiful species of the genus *Mesosemia* (*Lemoniinae*). Mr. R. Adkin, a pair of *Endromis versicolor*, reared this year from ova deposited in 1908, thus three years in pupa. Mr. Blenkarn, a teratological example of *Carabus nemoralis*, in which the tibia of the right fore-leg was divided into three, each terminating in perfect tarsi and claws; two specimens of the rare *Helophorus tuberculatus* and *Galerucella fergussoni*, from Lanarkshire; and the curious Hemiapteron, *Ledra aurita*, from West Wickham, on oak. Mr. Jäger, a Nematoid worm, which had emerged from the larva of a *Cucullia*. Mr. Sperring, a number of aberrations of *Lepidoptera*, including a smoky suffused specimen of *Cosmotriche potatoaria*, from Benfleet, a seven spotted *Anthrocerus filipendulae*, a *Callimorpha dominula* with very dark hind-wings and ill-developed scaling, two specimens of *Arctia caja*, one having asymmetrical markings and the other with yellow hind-wings, and a number of *Abraxas grossulariata* considerably darker than normal specimens, many having the black massed mainly towards the outer margin. He called attention to the fact that most of the bred aberrations were either early or late emergences of the brood.

*Thursday, August 10th, 1911.*—Mr. W. J. KAYE, President, in the Chair.

Mr. Jäger exhibited a specimen of the large spider, *Mygale avicularia*, sent to him from India, and communicated notes on its habits. He also showed a specimen of a scorpion from the Asiatic shore of the Bosphorus, and described its habits. Mr. West (Greenwich), a series of *Asemum striatum* and var. *agreste* from the New Forest; a ♂ and 2 ♀s of the introduced *Monohammus sartor*, from Deptford; *Acocephalus tricinctus*, a recent addition to the British List, from Great Yarmouth, with *Plagiognathus albipennis*, obtained from *Artemisia maritima*, and *Aræopus pulchellus* and *Chlorina glaucescens*, all from the same place. Mr. Carr, the two grasshoppers, *Stenobothrus bicolor* and *Platyzeleis brachyptera*, from Oxshott. Mr. Blenkarn, *Quediæus talparum* (*vexans*), from moles' nests in the Isle of Wight, and a double banded form of *Noctua rubi* from Beckenham.

Mr. Dods, living larvæ of *Samia cecropia*, a large American silk-producing Saturniid. Mr. Carr, the local beetle, *Cicindela sylvatica*, from Oxshott. Mr. Edwards, a box containing several species of the genus *Libythea*, and contributed notes on the singular distribution of the few known species.

Thursday, August 24th.—The President in the Chair.

Mr. Jäger exhibited the following forms and aberrations of British *Lepidoptera*: very dark *Argynnis aglaia*, *Pieris napi*, and *Venusia cambrica*, *Rumicia phlæas*, with wedge-shaped spots replacing the band; a very silvery ♀ of *Celastrina argiolus*; two very curious dark forms of *Acidalia marginepunctata*, and a very aberrantly marked form of *Hydriomena ruberata*. Mr. S. R. Ashby, series of *Balaninus nucum* and *Phytodecta pallida*, taken during the Field Meeting at Clandon, July 15th. Mr. Turner, forms of *Papilio podalirius*, including var. *feisthamelii*, ab. *ornata*, and two examples partaking of the ab. *undecemlineatus* and ab. *nigrescens* forms. Mr. Turner contributed a note on the habits of the thread worm, one of which had been recently exhibited, found in the larva of a *Cucullia*. Mr. R. Adkin, forms of *Hesperia malva* closely approaching v. *taras*, from Sussex, and an intermediate example of *Aplecta ocellata*, from Rannoch, where the species is usually very dark. Mr. Morford, *Colias hyale*, and a second brood specimen of *Nisoniades tages*, from Mickleham, August 20th. Mr. West (Greenwich), two local Diptera, *Ceroxys pictus* and *C. omissus*, from Great Yarmouth salt-marshes. Mr. West (Ashstead), the rare burying beetle, *Necrophorus interruptus*. Mr. Main, a portion of wasp comb, and described the feeding of the larva. Mr. Edwards, *Papilio codrus*, and allied species. Mr. Blenkarn, several living stick-insects, *Dixippus morosus*, from India. Mr. Kaye, a specimen of the extremely rare Sphingid, *Pholus typhon*, from Mexico. Dr. Chapman, living larvæ of the high-level Lycanids, *Laticlorina orbitulus*, *Vacciniana optilete*, and *Albula pheretes*, from the Alps.—HY. J. TURNER, *Hon. Secretary*.

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ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, June 7th, 1911.—The Rev. F. D. MORICE, M.A., President, in the Chair.

The Secretary observed that he had exceeded his instructions with regard to the Memorial passed at the last meeting on the South Kensington site, and had sent it to the *Times*, where it had appeared, and to the principal Press Associations, as well as (at the request of Mr. Waterhouse) to the Director of the Natural History Museum.

Commander J. J. Walker exhibited specimens of *Barypithes pellucidus*, Boh., from Oxford, Enfield, and Tavistock respectively, and for comparison, *B. duplicatus*, Keys, from the Blean Woods and Birchington, Kent. Also a series of specimens illustrating the life-history of *Cyclotorna*, Meyrick, a genus of Myrmecophilous Lepidoptera, from Queensland, sent by Mr. F. P. Dodd with his paper on the insects subsequently read. Mr. Donisthorpe exhibited live specimens of *Antennophorus uhmanni*, Haller, on the ♂♂ from a nest of *Lasius umbratus* at Woking. Only two specimens have been taken before in Britain, by Michael, in an ants' nest at the Land's End. Also *Uropoda philoctena* fastened



on the strigil of a ♂ of the same ant from the same locality. This species is new to Britain. Mr. C. O. Waterhouse exhibited larvae of a species of *Hypoderma* received from India from Mr. J. E. Middleton, with a note that they had been taken from a gazelle and were probably an undescribed species. Mr. Waterhouse expressed the strongest doubts as to the possibility of determining a species of *Hypoderma* from the larvae. There is, however, no Indian *Hypoderma* described hitherto. Mr. F. Enock exhibited a photomicrograph of a new species of *Mymar*, which he has named *Mymar regalis*, accompanied by one of *M. pulchellus* for comparison, captured June 3rd, 1911, at Burnham Beeches. The posterior wings are greatly elongated into a very narrow battledore with six long hairs on the lower margin, and the anterior wings are surrounded with sixty long hairs—instead of the thirty-five of *Mymar pulchellus*. Mr. H. Rowland-Brown exhibited some drawers of Miss Fountaine's bred series of African *Charaxes*. Dr. Chapman exhibited a box of insects to illustrate a case of mimicry, remarking that in March and April, both at Hyères and at Amélie-les-Bains, his attention was attracted to a Reduviid bug, *Pirates hybridus*, Scop. He followed up one or two on the wing, taking them for Pompilid Hymenoptera, and when they settled on the ground their movements were precisely those of *Pompilus* when hunting on the ground—sharp, active, jerky, and taking wing at once if alarmed. The red colouring on the elytra was, when running, much like the red of a Pompilid body between or under the wings. On picking up the bug, it often occurs that one is stung, about as sharply as many Pompilids do, and some are fairly proficient therein. The sting is of course the thrust of the beak or proboscis, of which not a few Reduviid bugs can make effective weapons of defence. The sting enhances the resemblance to an Aculeate. Dr. Chapman also read the following note on a nest of *Polistes gallica*: "At Hyères. on March 29th, 1911, at 10.30 a.m., with a gale from the east (Sirocco), sky overcast and a few drops of rain, I found, on turning over a stone, under its edge, a small nest of *Polistes gallica*. The nest consisted of eight small cells, in each of five of which was one egg. It could not have been founded very long. Under it (above it before the stone was turned over) there rested not one ♀ but two ♀ ♀ side by side. The advancement of the nest showed that it was impossible for one of these to be a worker reared in the nest. Were they working together, or was one only a casual visitor, taking shelter during the inclement weather? In the latter case would it not have been regarded and treated as an enemy, instead of both resting together in a thoroughly friendly way?" Dr. Chapman also exhibited some well-grown larvae of *Callophrys aris* from the Riviera. Prof. Poulton exhibited on behalf of Mr. A. H. Hamm, assistant in the Hope Dept. of the Oxford University Museum, a case of insects illustrative of certain associations of mimetic British Hemiptera-Heteroptera, with their Hymenopterous models, and communicated a paper from him. His chief object is to record the fact that the Hemiptera are to be found in the localities frequented by their models, and often in their company. Field observations are especially important in the mimics of insects, such as the Hymenoptera Aculeata, with extremely characteristic habits and movements. Prof. Poulton exhibited a family of *Papilio dardannus*, consisting of the trophonius parent and the fifty-five offspring reared from her eggs by Mr. G. F. Leigh,

F.E.S. of Durban, and containing a new ♀ form *leighi*. The female parent was captured by Mr. Leigh on June 26th, 1910, at Pinetown, Natal (about 1000 ft.). She laid sixty-two eggs on June 27th–28th, the offspring consisting of 25 males, 22 *cenea* females, 4 *trophonius* females, 2 *hippocoon* females, and 2 *leighi* females. There can be no doubt that this variety, bred in Natal by Mr. Leigh six times in 1910, and also captured twice in Natal, possesses sufficient stability to rank as one of the female forms of *dardanus*. Further convincing evidence of its stability as a form is seen in the fact that it also occurs almost unchanged so far away from Natal as the N.E. corner of the Victoria Nyanza. A specimen was collected by Mr. A. H. Harrison about 1903 at "Nyangori," a forested locality at a height of about 5000 feet to the N.E. of the great lake. Mr. Harrison's specimen was figured  $\frac{2}{3}$  of the natural size in Trans. Ent. Soc., 1906, Plate XX, fig. 1. It is there spoken of as "intermediate between *planemoides* and *cenea*." The *planemoides* form is entirely unknown in Natal, and indeed in areas far to the north of it, and hence it is impossible to adopt the plausible interpretation of *leighi* as a hybrid between *cenea* and a male bearing the *planemoides* tendency, or *vice versa*. We are therefore driven to the hypothesis that the *leighi* form is a persistent definite stage in the evolution of *planemoides*. Prof. Poulton also exhibited an example of the *planemoides* female captured in August, 1910, in forest country (less, and probably much less, than 100 ft. elevation), between Jilore and Malindi. Jilore is about 70 miles N. of Rabai and 19 W. of Malindi. The occurrence of *planemoides* on the E. coast, so far from its *Planema* models, is of high interest. Prof. Poulton also exhibited a female parent of the *dubia* form captured on March 19, 1911, at Oni, 70 miles E. of Lagos, by Mr. W. A. Lamborn, together with a selection from the offspring reared from its ova. The offspring included both *dubia* and *antheson*. Thus Mr. Lamborn had been able to verify the suggestion that the forms *Euralia antheson* and *E. dubia* are the dimorphic forms of a single species. It may be added that Mr. Lamborn has now bred families from three *dubia* parents of various forms, and one from an *antheson* parent, all captured at Oni in March of the present year. Both *antheson* and *dubia* appeared in all the families. Mr. W. A. Lamborn had intended to show at this meeting the cases which he had exhibited at the Convezazione, but, owing to a misunderstanding, they had not arrived. He remarked, however, that Prof. Poulton's account of the mimicry of certain Danaïne butterflies by *Euralias* induced him to mention that he recently took, at one sweep of the net, two butterflies, an *Amauris psyllalea*, Plötz, and a *Euralia dubia*, which were flying round and round each other in a manner suggestive of courtship. Their movements on the wing were so active that he was unable to recognise them before capture, and it seemed evident that the one must have been deceived by the mimetic resemblance to its own species exhibited by the other. In the exhibit which he had hoped to bring was a West African Hyspid moth determined by Prof. Poulton as *Deilemera*, probably *antinori*, Oberth., with the cocoon from which it emerged, which bears a large number of creamy white semi-transparent frothy spheres, which bear a very strong resemblance to the cocoons of Braconid parasites, and doubtless have a protective function. He added that he had obtained some light on the relationship between the 'brands' or patches of peculiar scales on the wings of male *Danaïnae*, and the double tuft of hairs which

can be protruded from the posterior extremity of the body. In January of this year he observed a male *Amauris niarivus*, L., settle on the upper surface of a leaf with its wings expanded. The insect flexed its abdomen, making the dorsal surface convex, so that the extremity of the body was brought level with the brands, and the tufts were then thrust out. By alternately flexing and straightening out the abdomen, the tufts were passed to and fro over the surface of the brands as though some secretion was being conveyed from the one to the other. Prof. Poulton has suggested that the greasy appearance of the brands may be probably interpreted on the hypothesis that they serve to retain and distribute a scent employed in courtship brought to them by the tufts. Dr. Longstaff said that he was satisfied that in *Euplea* and *Limnas chrysippus* the characteristic scent was not caused by the tufts and brands, though these were very likely the cause of another volatile scent which certainly existed in these cases. Female Danaids have a scent as well as males; the scent common to both being nauseous, while that peculiar to the male is probably a help in courtship. Comm. J. J. Walker read the following paper—"Some remarkable ant-friend *Lepidoptera* of Queensland," by F. P. Dodd, F.E.S., with Supplement by E. Meyrick, B.A., F.R.S.

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#### NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.

(A GENUS OF *COLEOPTERA*).

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

In the year 1829 the Abbé Pierre André Latreille established the genus *Longitarsus*, and to-day that genus remains to Coleopterists perhaps the most confused in synonymy and bewildering in specific differentiation of all the genera of the *Coleoptera*. That a group, of which the species are so widely distributed and, in most cases, so abundant and so easy of examination, should thus have become little better than a stone of stumbling to the majority of students, may be easily explained by the extraordinary instability of specific form which so many of its members exhibit. In size, in shape, in colour, and to some extent in punctuation, especially of the thorax, in fact, in most of those morphological characters on which systematists are accustomed to base their conception of specific unity, many of these insects vary to an extent quite unrivalled by any other genus of the British *Halticidæ*. Why, in this particular group, the bonds of specific stability should seem so relaxed, appears a question beyond our present knowledge. We should require to understand far more intimately than we now do the economy of these insects, their relations with their environment, in a word, those factors which regulate and maintain adherence to specific form among the phytophagous *Coleoptera*, before we could hazard even

the vaguest hypothesis as to why the members, say of the genus *Psylliodes*, should be monotonously uniform, and those of *Longitarsus* so wildly irregular.

It will be plain then that, since our knowledge of the members of this group is virtually confined to their imaginal form, and that only in a morphological sense, discrimination of species becomes somewhat empirical, or even to a large extent provisional.

In the notes, therefore, which follow, it is hoped that this consideration will be understood as implicit. Throughout them an attitude possibly more synthetical than that of some recent Continental students of the genus has been adopted, it being the belief of the authors that errors of defect invariably more easily admit of rectification than do those of excess, and that nothing is more easy or more futile than to apply a fallacious analytical method to such a group as this.

We have devoted considerable time to a study of the genus, and our investigations have been much facilitated by the very kind assistance of friends and fellow workers (to be mentioned more particularly later on), who have placed their observations at our disposal, communicated specimens, and allowed the examination of collections. We may here, perhaps, specially allude to a box containing exponents of the genus, kindly communicated to us by Mr. P. de la Garde, discovered by him among duplicate boxes left by the late Mr. T. V. Wollaston, which internal evidence clearly shows to have been sent to that gentleman by M. Allard in 1861. As the original list of names of the contents was found with, and accompanied the box, we were enabled to verify and compare with others what are practically Allardian co-types of the genus, and this we need hardly say we have found of invaluable assistance in our investigations.

The problem of food plants, a knowledge of which would seem to be of the utmost value as providing physiological data in the appreciation of species, has not been overlooked. The difficulty, however, in associating, without the possibility of error, forms so agile and elusive with any special plant is formidable and exacting. We have, however, obtained some little fairly assured knowledge on this subject, and its patent incompleteness will, we hope, stimulate other students of the group to attempt the solution of the problems which still remain.

Before proceeding further it may not be out of place to say a word about the characters which have been generally used in this genus for the differentiation of its species.

*Colour*.—Within rather wide limits the *Longitarsi* are fairly con-

stant in coloration, and can be conveniently grouped in a broad way by this character, although there is the notable exception of *L. luridus*, Scop. One may also cite the immaculate form of *L. quadriguttatus*, Pont., as a colour variation, the extensive colour range in the thorax of *L. suturellus*, Duft., and of *L. pusillus*, Gyll., and the red form (v. *rufescens*, Fowler), of *L. jacobææ*, Wat.

*Colour of suture.*—A useful character in conjunction with others, but not necessarily of specific value—cf. the var. *thapsi*, Marsh., of *L. tabidus*, F., the var. *poweri*, All. of *L. gracilis*, Kuts., and the various forms of *L. melanocephalus*, de G.

*Punctuation.*—This character, usually so valuable in the *Coleoptera*, admits of extensive but carefully guarded use in this genus, at any rate as applicable to the elytra. It may be relied on broadly for grouping, and more exactly for specific discrimination, and the striate or confused arrangement of the punctuation seems specifically much more constant than its strength, but that this character cannot be universally applied is demonstrated by such species as *L. luridus*, Scop., *L. pusillus*, Gyll., and *L. membranaceus*, Foudr. It is certain, however, that the character, strength, and disposition of the *thoracic* punctuation varies so widely within the limits of species as to be—with very few exceptions (e.g., *L. suturellus*, Duft.)—of hardly any assistance as a specific criterion.

*Antennæ.*—The structure of the antennæ is probably as constant a morphological feature as any in this group. The relative length, and to a lesser degree the colour is of considerable assistance, but from the comparative length of the separate joints of the antennæ we have been able to deduce nothing specifically.

*Humeral angles of elytra.*—By several authors much stress has been laid on the shape, slope, or angle of the elytral shoulders as diagnostic of species. It appears to us, however, that these differences are difficult to appreciate and misleading in application, as the contour of the humeral angles depends very much on the development of the wing muscles, which of course vary as the insect is winged or apterous. Many species, however, are known under both forms. The shape of the elytra as a whole, whether oval or oblong in outline, whether flat or convex in contour, or how far intermediate between these extremes is a character of considerably more importance, and indeed of the greatest assistance in the appreciation of the "habitus" of many of the species.

An increasing use has recently been made of the shape and

structure of the genitalia of the males as a diagnostic character in *Coleoptera*, nor has this point been neglected by the older authors in the case of *Longitarsus*. In Foudras' monograph descriptions of these organs are given for most of his species. Their value, however, as specific criteria does not appear very great or very conclusive, and having examined the aedeagi in several closely allied forms, we should not be prepared at present to place entire reliance on this character as a factor in specific determination.

The sexes in *Longitarsus* are not always easy of separation by secondary characters, but as a rule the males may be known by their longer antennae and narrower shape. In many species also the apices of the posterior tibiae of that sex are somewhat angularly dilated. The difference in the size, and particularly the breadth of the anterior tarsal joints, usually so distinct in many of the *Coleoptera*, varies specifically in this group, and is often very slight and difficult of appreciation, although it undoubtedly exists, and is in some species, e.g., *L. luridus* and *L. suturellus*, quite obvious. The presence or absence of effective wings may be a sexual character,\* but in the present state of our knowledge we feel it to be quite unsafe to lay down any rule on the subject either generally or as affecting any particular species.

To assist in the discrimination of the species of *Longitarsus* we have thought it desirable to divide the genus into six sections, founded on such salient and superficial characteristics as may be most readily appreciated, but it is almost superfluous to add that such divisions may be quite empirical, and need not necessarily imply any genetic affinities, while owing to the inconstancy of those obvious features on which any dichotomic table must be based, it is practically impossible to construct one which will cover all the extreme variation within the species, comparative certainty in determination being only attainable by experience of the group, and a large amount of material for reference.

These sections are as follows :—

- I. Species unicolorous, black, or nearly black; punctuation distinct, variable in strength.
- II. Species black, with distinct testaceous or reddish markings.
- III. Species unicolorous, testaceous, brown, or pitchy to black (extreme form of *L. luridus*), with coarse confused punctuation.
- IV. Species testaceous, with sutural line black, broad and distinct, and elytral punctuation distinct, but not coarse, more or less dense and confused.

\* See note on *L. agilis* in this connection by G. C. Champion, Ent. Mo. Mag. xlvii, 261 (1910).

**NOTE.**—Subscriptions for 1911 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

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The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) is given with the present number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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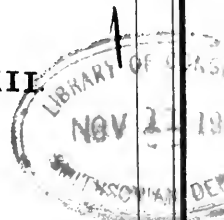
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- VIA. Species small (under 2 mm. in length), testaceous with sutural line rufescent, narrow, sometimes almost obsolete; punctuation strong and somewhat seriate.
- b. As in a, but with punctuation fine or very fine.

SECT. I.—Species unicolorous, black, or nearly black; punctuation distinct, variable in strength.

1. Antennæ and legs more or less testaceous.

1. Head, thorax, and elytra entirely black.

A.—Elytra coarsely punctured.

a. Size as a rule smaller; antennæ shorter and more slender .....*L. obliteratus*, Rosenh.

b. Size larger; antennæ longer and stouter...

*L. anchusa*, Payk.

B.—Elytra finely punctured .....*L. parvulus*, Payk.

2. Thorax usually, and elytra occasionally, reddish, or with obscure indications of reddish markings .....*L. absinthii*, Kuts.

11. Antennæ and legs unicolorous black .....*L. nigerrimus*, Gyll.

*L. OBLITERATUS*, Rosenh. [Beitrag zur Ins. Faun. Europæ, p. 61 (1847)].

Schrank's name "*pulex*" has been applied to this species by Foudras, Rossi, Marsham, Stephens, and Fowler, but Schrank's description,\* in the absence of his type, seems insufficient to justify its retention, and we think it better to conform to general European usage by distinguishing the species as *L. obliteratus*.

Syn. *consociatus*, Först.

*pusillus*, Coll. Kirby.

Oblong ovate, sometimes subparallel (completely apterous form), shining, black. Antennæ slender, not very long, first four or five joints testaceous, remainder fuscous. Thorax: punctuation variable, but usually less coarse than that of elytra, often somewhat confluent. Elytra convex, not acuminate, apical angles slightly rounded, punctuation coarse and subserrate at base. Legs testaceous, with tarsi darker and posterior femora pitchy to black. Underside black. Completely or semi-apterous. Length,  $1\frac{1}{4}$ – $1\frac{1}{3}$  mm.

This is the most abundant species of the black *Longitarsi*. It can only be confused with the black form of *luridus*, Scop., from which it may be distinguished by its smaller size, and the weaker, less confluent, and more seriate character of the elytral punctuation.

\* "*Chrysomela pulex*, *C. saltatoria*, *atra*, *nitens*, *antennis tibiisque rufis*. Long.  $\frac{3}{4}$ . Lat.  $\frac{1}{4}$  l. *Oblonga*, *tota nigra*, *nitens*, *thorace elytrisque subtilissime at irregulariter punctatis*." Schrank, Enumeratio Ins. Aus. Indig. p. 85 (1781).

Food plants. *Thymus serpyllum*, *Salvia pratensis*, and other *Labiatae* (Bedel), *Satureja montana* (Deville), *Thymus serpyllum* (H. C. Dollman, Fowler), *Teucrium scorodonia* (Fowler).

Distribution general throughout the south of England.

*Vars.* The var. *meridionalis*, Weise, the only one mentioned in the European Catalogue (1906), appears to be unknown in this country.

*L. ANCHUSÆ*, Payk. [Faun. Suec., Ins. II, p. 101 (1799)].

Syn. *ater*, Laicharting.

Ovate, shining, black, considerably larger than the preceding, from which it can readily be distinguished by its long stout antennæ, more infusate legs, and more rounded apical angles of elytra. Antennæ: first joint fuscous at base, second, third, and fourth testaceous, remainder fuscous. Thorax: punctuation variable, but generally feebler than in preceding, sometimes almost obsolete or alutaceous. Elytra: punctuation equally coarse, but denser and more irregular than in *L. obliteratus*; apical angles strongly rounded. Pygidium exposed. Legs testaceous, sometimes fuscous, with tarsi and all femora darker; posterior femora black. Underside black. Apterous (in Britain). Length, 1½—2 mm.

The long stout antennæ will easily distinguish this species from any other of the section.

Food plants. *Anchusa* and *Cynoglossum* (Gyllenhal), *Synophytum officinale*, *Cynoglossum officinale*, *Echinum vulgare* (Bedel), *Anchusa*, *Asperugo*, *Myosotis*, *Pulmonaria*, *Lithospermum* (cultivated) (Rouquet), *Boraginaceæ* (Foudras).

This species is not uncommon on the Southern chalk downs, and can be observed in the early spring hopping about the loose stones, or swept from the mixed herbage of such localities during the summer. It appears to be generally distributed throughout the South of England, especially in chalky districts, and has been recorded from Norfolk, Durham, and Northumberland.

*Vars.* A winged form, v. *punctatissimus*, Foudras, is recorded from Switzerland by that author.

*L. PARVULUS*, Payk. [Faun. Suec., Ins. II, p. 102].\*

Syn. *pusillus*, Illig.

Oblong ovate, shining, black, with a very faint aneous reflection. Antennæ: similar to those of *L. obliteratus*. with first four or five joints testaceous,

\* The "*atra*" of Fabricius [*Crioceris atra*, Syst. Eleuth., I, 467. (1801) (Payk.) Faun. Suec. ii, p. 100, 19] is clearly *Phyllotreta atra*, and the name "*ater*," Brit. Coll., for this species cannot therefore be retained.

remainder dusky. Thorax: very finely punctured. Elytra: more coarsely punctured than thorax, but much less so than in the two preceding species; punctuation somewhat seriate near suture; apical angles very slightly rounded. Legs testaceous; posterior femora entirely black, anterior and intermediate pairs occasionally somewhat infuscate. Underside black. Winged. Length,  $1\frac{1}{4}$ — $1\frac{1}{2}$  mm.

The distinctly finer and closer elytral punctuation will readily separate this species from *L. obliteratus*, with which alone it could be confused.

Food plants.—According to Allard this species occurs on hornbeam in woods, and one of us has beaten it abundantly from low trees in a wood near Ballycastle, Co. Antrim.

It has been recorded from several localities in Ulster as doing considerable damage to flax crops (see Journal of Dept. Agriculture and Technical Instruction, Vol. II, pp. 138–140). It appears to be widely distributed throughout England, although nowhere common. We require further evidence as to its real food-plant, but if Allard should prove to be correct in associating it with hornbeam, this species will be singular in being the only British member of the genus known to feed on any kind of tree.

Vars.—Allard mentions a form, “couleur de poix bronzée avec l’extrémité des élytres plus claire,” which, however, may be merely a case of immaturity. *V. concinnus*, Weise, seems to be unknown in this country.

*L. ABSINTHII*, Kuts. [Wien. Monat. 1862, p. 217].

Syn. *niger*, Bach, Käferf. iii, p. 149.

Oblong ovate, rather elongate, more or less pitchy, but rarely quite black, thorax distinctly lighter than elytra, the latter occasionally with indications of lighter spots at apex and shoulders. Antennæ: almost as long as in *L. anchusæ*, but more slender. Punctuation of thorax and elytra coarse and confused, but that of the former less so than of the latter. Apices of elytra moderately rounded. Legs variable in colour, reddish testaceous to pitchy, darker than in the allied species, with femora concolorous, tarsi black. Underside black. Wings absent or rudimentary. Length,  $1\frac{1}{4}$ — $1\frac{1}{2}$  mm.

The general coloration and concolorous posterior femora will separate this species from *L. anchusæ* and its allies.

Food plant.—*Artemisia maritima*.

Local, and only recorded from South of England.

*L. NIGERRIMUS*, Gyll. [Ins. Suec. IV, app. p. 656].

Broadly ovate, very convex, entirely black, except the knees, which are slightly pitehy, and the first joint of posterior tarsi, which is fuscous. Thorax : punctuation almost obsolete, finely alutaceous. Elytra : punctuation very coarse and distinct, somewhat subseriate; apical angles well defined, not rounded off; Underside black. Winged. Length,  $2\frac{1}{4}$ - $2\frac{1}{2}$  mm.

Food plant unknown.

This species was added to the British list in 1908 by Messrs. Tomlin and Joy, on examples taken by Dr. Wallace, of Grimsby, on the Lincolnshire coast, and a specimen from Greatham in the collection of the former. It is reported to have occurred near Middlesborough and in Scotland. The distribution thus appears, so far as is known, to be east and north in Britain, and it is unlikely that so conspicuous a species should have remained unrecognized had it occurred anywhere on our southern coast. The last European catalogue (1906) gives its range as Northern Europe.

(To be continued).

NOTES ON THE  
EARLY STAGES OF *HÆMONIA APPENDICULATA*, PANZ.

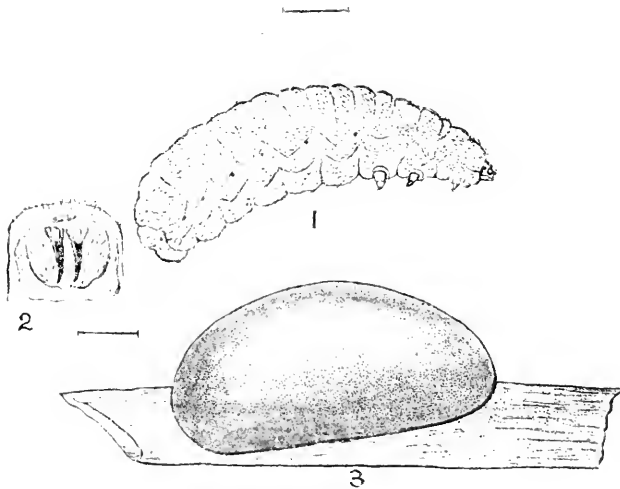
BY JOSEPH COLLINS.

During my holidays in the latter part of August, 1911, I devoted some considerable time to working with the water-net, in a mill-stream connected with the River Cherwell, near Oxford, for the rare *Hæmonia appendiculata*, Panz., the locality being that already recorded for the species, in E. M. M., vol. xlvii, p. 238. In the course of these operations, I came across a strange-looking larva suggesting that of a Dipteron in its appearance, among the water-weeds in my net. A day or two later, I noticed several peculiar little cocoons attached to the stems of an aquatic plant, among the *d/bris* which had become detached from the growing plants and had found their way into the water-net.

At the time I had no idea what these cocoons could be, and, therefore, took a few of them to see what they would produce. Visiting the place on another occasion, I found that one of these cocoons contained a fully developed imago on the point of emerging, there being a hole at one end. On closer examination, I was much pleased and surprised to see a perfect specimen of *H. appendiculata* inside, with legs and antennæ folded up snug and compact in this extremely small place.

I had thus traced the complete cycle of larva, pupa and imago.

The next thing to be done was to trace the beetle to its real food-plant, and this proved an unexpectedly easy matter. Wading into the stream, I pulled up a few plants and immediately found the cocoons attached to the stems, near the roots, of *Potamogeton pectinatus*. They have also occurred on an aquatic species of *Ranunculus*. The larvæ are decidedly gregarious, feeding at the roots of these plants in the mud at the bottom of the stream, sometimes six or eight of them occurring together in various stages, ranging from a quite small size up to full growth. From the cocoons brought home by me, two specimens of the beetle have emerged, one of which I assisted out by breaking open its cocoon, and have kept in a shallow dish of water with some of the weed since September 2nd, 1911. At the time of writing (October 6th), it is still alive. I hoped to determine the real time of appearance of the imago, but this I find very difficult to state at present. Towards the end of August I captured two pale immature-looking specimens which had evidently only just emerged. Throughout the period I was working for the *Heemonia* the larva, pupa, and imago could be taken together, and on one occasion, when Commander Walker was present, I brought out of the water the three stages of the insect in a handful of the food-plant.



The larva (fig. 1) is a whitish grub, short and stout in appearance, convex on the dorsal, flattish on the ventral surface, wrinkled along the sides, and curved at each extremity. It is sparsely clothed on the dorsal and lateral regions with very short, bristly, ferruginous hairs, which are hardly visible except with a good lens, and look as if closely

shorn. On the anal segment is a very peculiar structure (fig. 2)—a pair of decurved spines or spurs, and at the base of each is a spiracle. The use of these singular appendages is very interesting, as stated in Prof. Miall's "Natural History of Aquatic Insects," p. 94, in his remarks on the larva of *Donacia*, which is very similar in habits and structure to that of *Hæmonia*:—"Roots of *Nyuphæa* frequented by *Donacia* were observed by Schmidt-Schwedt\* to exhibit peculiar scars. These were discovered with difficulty, owing to the dark colour and uneven surface of the roots. There was in each case a rough hole, made apparently by the jaws of the larva when feeding, and, at a distance corresponding with the length of the body, a pair of small slits. On microscopic examination, these slits were found to penetrate the epidermis of the roots. Something of this had been previously observed by Siebold, who in 1859 described the larva as biting a hole in the roots of *Sparganium*, passing the end of the abdomen into it, pressing the spiracles by the help of the curved spines close against the hole, and so drawing the contained air into its body. Schmidt-Schwedt believes that the pair of openings are made not by the mouth but by the spines, and that the air is drawn in by internal channels running along them."†

MacGillivray, in his paper on "Aquatic *Chrysomelidæ*,"‡ states that the larva of [*Hæmonia nigricornis*, Kirby] can be recognized from that of *Donacia* by having the sixth and seventh abdominal tergites each armed with a double row of setæ, most of which are twice as long as those found on the other tergites, and the supra-spiracular setæ wanting.

The cocoon (fig. 3) is subcylindrical, obtuse-ended, semitransparent, smooth and glassy looking, varying in colour from yellowish brown to darker brown. When the beetle is mature, its markings can plainly be seen through the semitransparent walls of the cocoon. The usual place of attachment is to the stems of the food-plant, a few inches above the roots, there being sometimes three or four cocoons on a stem. I have also found them at the roots spun up among the suckers. I am indebted to Commander J. J. Walker for the accurate drawings by Miss M. A. Sharp of the larva, breathing apparatus, and cocoon.

Oxford: October 6th, 1911.

Berl. Entom. Zeitschr., xxxi, pp. 325-334, Taf. v, figs. 1-11 (1887).

†Dewitz (Berl. Entom. Zeitschr., xxxii, p. 5, 1888) believes that in *Hæmonia*, and presumably in *Donacia* also, the spiracles serve for admission of air to the body as Siebold maintained. Schmidt-Schwedt has, B.E.Z., 1889, reaffirmed his original statement.

‡Bull. N. York State Museum, (3s. Entom. 18, p. 314 (1903).



DESCRIPTIONS OF TWO NEW BRITISH SPECIES OF  
*RHYACIONIA*, Hb. [LEP. TIN.].

BY JOHN HARTLEY DURRANT, F.E.S.

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*OLETHREUTIDAE*.

241. *RHYACIONIA* Hb.

= *RETINIA* Gn.; = *EVETRIA* (Hb.) MEYR., STGR-REB.

1844-1. *RHYACIONIA* LOGAEA, sp. n.

= *Retinia* \**duplana* (nec Hb.) Brt. Br. Lp. XI. 40-1, Pf. 476·2 (1906).  
*Evetria duplana* (p.) Meyr. HB. Br. Lp. 471 sp. 5 (1895).

*Antennæ* ♂ biciliate 1, cinereous, annulate with fuscous; ♀ fuscous. *Palpi* fuscous. *Head* dark ferruginous, mixed with fuscous; face fuscous. *Thorax* dark fuscous, with some admixture of cinereous and ferruginous. *Forewings* elongate, pointed, costa almost straight, termen oblique; fuscous, some of the scales tipped with white and forming obscure cinereous fasciae, ferruginous toward the apex and termen, but not at the tornus; the dark ground-colour extends along the costa to vein 9, or beyond, along the dorsum to the tornus, and in the disc to the end of the cell, thence becoming ferruginous, with some admixture of fuscous toward the termen; the base of the wing is speckled transversely with cinereous; a cinereous fascia at one-fourth, widening outward on the cell, is succeeded by a similar fascia angulate outward to the discoidal, with a third crossing almost to the tornus, some paler transverse scaling occurs also before a preapical costal spot; cilia pale cinereous, with a fuscous dividing line near the base, and paler lines toward their tips. *Exp. al.* 14-17 mm. *Hindwings* fuscous; cilia paler, with a dark dividing line toward their base. *Abdomen* fuscous, banded with cinereous. *Legs* cinereous, tarsi spotted with fuscous.

*Type* ♂ (56717); ♀ (62269), Mus. Wlsm., British Museum.

*Hab.*: SCOTLAND: ELGIN: Forres, IV. (*W. Salvage*, 1890, 1891; *W. Reid*, IV. 1891; *H. McArthur*, 1892, IV. 1893). Fifty specimens. [Mus. Wlsm. 8 (56717, 62047-52, 62269); R. South Coll. 1 (Drnt. 6458); B. A. Bower Coll. 12 (Drnt. 6469-80); R. Adkin Coll. 25 (Drnt. 6481-6505); N. C. Rothschild Coll. 4 (Drnt. 6521-4)].

Closely allied to *duplana* Hb. and *posticana* Ztst., but the much longer antennal ciliations of the ♂ will at once separate *logaea* from these species. *R. posticana* has an ochreous head, and is a broader-winged insect than *duplana* or *logaea*, and the hindwings are distinctly less pointed. The Type ♂ of *logaea* is the specimen figured as "*duplana*" by Barrett (Pf. 476·2); the ♀ is similar, but smaller than the ♂, and somewhat more distinctly marked, it is however not so clearly and neatly fasciate as is the true *duplana* Hb., and the direction of the

fasciae is not quite the same—the dark scaling along the tornus of the forewing is a good distinguishing character in *logaea*.

So far all attempts to establish *duplana* Hb. as a British species have been unsuccessful. Curtis described *sylvestrana* in 1850 from British specimens wrongly “distributed amongst Entomologists by the name of ‘*duplana*’”; the “*duplana*” of Wilkinson, Stainton’s Manual, &c., is *posticana*, Ztst.; and the “*duplana*” of Barrett, Meyrick, and British Collections, is *logaea*.

In 1868 Lord Walsingham purchased as British, from Mr. E. G. Meek, two specimens ♂ (56517), ♀ (56518) described thus, “*R. Duplana* 7/6 ♂ & ♀ not been taken for years” (Meek, *i. l.*, 27.V.1868). These two specimens are truly *duplana* Hb., but I have been unable to confirm the occurrence of this species in this country, although Messrs. South, Bower, Adkin, and the Hon. N. C. Rothschild kindly submitted to me their series of “*duplana*” and *posticana*.

#### 1846-01. RHYACIONIA PURDEYI, sp. n.

*Antennae* simple; cinereous, annulate with dark fuscous. *Palpi* cinereous. *Head* and *Thorax* cinereous, mixed with fuscous. *Forewings* striate with fuscous and cinereous on the basal two-thirds, thence ferruginous; the scales on the basal area are fuscous, mostly tipped with white, the ground colour appearing cinereous traversed by fuscous lines; two of these lines near the base form a narrow dark fascia, and are followed by a similar fascia at one-fourth, with slightly rounded outer margin; the ferruginous terminal area of the wing is crossed by a narrow fascia of mixed cinereous and fuscous, from the costa at three-fourths to the tornus, and preceded by two similar fasciae, confluent toward the costa but divided by ferruginous toward the dorsum; cilia leaden grey, whitish at the base, with a conspicuous blackish dividing line throughout, followed by two very narrow whitish lines. *Exp. al.* 12-13 mm. *Hindwings* pale fuscous; cilia paler, with a dark dividing line near the base. *Abdomen* pale fuscous. *Legs* cinereous, tarsi banded with dark fuscous.

*Type* ♂ (300001); ♀ (300002), British Museum.

*Hab.*: ENGLAND: KENT, Folkestone, VII<sup>e</sup>. 1911 (*W. Purdey*). Eight specimens (Dnrt. 6513-20).

Intermediate between *sylvestrana* Crt., and *duplana* Hb., but easily separable from the former by the ferruginous apex of the wing and the slightly different direction of the fasciae; from the latter it is distinguished by its more regular and distinct striation, as also by the brighter ferruginous colouration which occupies a greater proportion of the wing-surface, especially toward the dorsum.

Mr. Purdey writes that “The insect when disturbed returns as soon as possible to another branch, resting among the needles of the Scotch

Fir (*Pinus sylvestris*) closely concealed, and flies of its own accord just before dusk, in short flights from one branch to another, occurring about the third week in July, at Folkestone."

This very distinct species was submitted to me for identification through the Hon. N. C. Rothschild, to whom we are indebted for obtaining permission to retain the types.

British Museum (Natural History):  
October 1st, 1911.

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ADDITIONS AND CORRECTIONS TO THE BRITISH LIST OF  
*MUSCIDÆ ACALYPTRATÆ.*

BY J. E. COLLIN, F.E.S.

(Concluded from Vol. xlvii, page 234).

*AGROMYZIDÆ.*

*Odinia maculata*, Meig.—This is the *Milichia ornata* of the "List." The type of the genus *Milichia* being *speciosa*, Meig., not congeneric with *maculata*, it has been necessary to revive Desvoidy's name of *Odinia* for *maculata* and its allies.

\**Odinia boletina*, Zett.—This has been considered a synonym of the last species, but I believe it is distinct. It is the commoner species in England, and is to be found about tree fungi in the New Forest. Dr. Sharp and Mr. C. G. Lamb were the first to call my attention to the species.

*Schænomyza*.—This genus is now generally considered to belong to the *Anthomyidæ*.

*Agromyza*.—The species of this genus are not well differentiated in published descriptions, and it is difficult to name them with certainty, but all the species I have introduced are represented in Mr. Verrall's Collection and, I believe, are correctly named. I have not made use of the genus *Domomyza*, Rond., because it was founded upon a character which is not of generic value.

*Agromyza reptans*, Flin.—A common species nearly everywhere, which has long been reputed to occur in Britain, and ought not to have been omitted from the "List."

\**Agromyza albitarsis*, Zett.—Closely allied to the last species, but with paler tibiæ and tarsi. I have seen it from Herefordshire, Kent, Cambridgeshire and Suffolk.

\**Agromyza posticata*, Meig.—The yellowish end half of the abdomen helps to distinguish this species, which I possess from Herefordshire (one male taken by Col. Yerbury).

\**Agromyza abiens*, Zett.—I have bred this from leaves of *Cynoglossum*, gathered at Orford (Suffolk).

*Agromyza flaviceps*, Flin.—I caught a male of this previously reputed British species at Chillesford (Suffolk) in May, 1910.

*Agromyza capitata*, Zett.—First recorded from Kenmare, by Col. Yerbury, in the "Irish Naturalist" for 1902, but is not uncommon in England.

\**Agromyza carbonaria*, Zett.—Specimens of what I take to be this species were caught by Col. Yerbury at Dartford (Kent) in 1908.

\**Agromyza laterella*, Zett.—Not at all an uncommon, but somewhat variable, species. The large antennæ of the male help to distinguish it, and also tends to make me doubt the distinctness of *A. grossicornis*, Zett.

\**Agromyza vittigera*, Zett.—A small species taken by Mr. Verrall at Newmarket (Suffolk), and by Mr. Malloch at Bonhill (Dumbarton).

*Agromyza luctuosa*, Meig., is a reputed British species, and I believe I possess it from Bonhill (Dumbarton), taken by Mr. Malloch.

\**Agromyza verbasci*, Bouche.—I have bred this from larvæ, mining the leaves of *Verbasum*, gathered at Newmarket (Suffolk).

*Agromyza scutellata*, Flin., and *A. orbana*, Meig., both reputed as being British, may be reinstated in the "List," for I consider that I possess specimens of both species.

\**Agromyza xeneiventris*, Flin.—Not an uncommon species among those with black halteres. I possess it from numerous localities.

\**Agromyza cunctans*, Meig.—If I have correctly recognised this, it is a common species occurring nearly everywhere that I have collected.

\**Agromyza maura*, Meig., appears to be a widely distributed species. I have seen it from Suffolk, Essex, and Sussex, also from Scotland and Wales.

\**Agromyza simplex*, Lw.—Originally described from America by Loew, it was recognised by Chittenden (1898) as being associated in some way with asparagus in that country. Giard (1904) found it under similar circumstances in France, and I have taken it only by sweeping over asparagus beds here (Suffolk) in July and early August.

*Agromyza curripalpis*, Zett.—This is the *A. bicornis*, Kalt., recorded as British by Mr. Malloch in this Magazine for 1908, p. 180. Zetterstedt perpetuated an unfortunate mistake in naming this species, for he mistook the clump of vibrissæ for the palpi.

*Agromyza pistacia*, Curtis, was described from specimens obtained near Nice in South Europe, and has no right to appear in a British List; while *A. latipes*, Meig., being the same as *Maliza latipes*, may be struck out.

I have failed up to the present to recognise the following among British specimens:—*A. geniculata*, Flin., *A. nana*, Meig., and *A. violæ*, Curtis.

\**Cerodonta spinicornis*, Macq.—Rondani proposed the name *Cerodonta* for *Odontocera*, Macq., in 1861, a year before Schiner called the genus *Ceratomyza*. *C. spinicornis* may be at once separated from *denticornis* by its brightly shining thorax; it has been taken by Mr. Verrall and myself in Norfolk, Suffolk, and Cambridgeshire.

\**Cerodonta lateralis*, Zett.—There are three female specimens of this very distinct species, under the name *Seluchops flavocincta*, in the late Mr. Dale's Collection, now at Oxford.

*Seluchops flavocincta*, Wahlbg.—I have seen no British example of this species, and as it was recorded as British by Mr. Dale upon specimens of *Cerodonta lateralis*, Zett., it has no right to appear in the "List" at present.

## PHYTOMYZIDÆ.

The *Phytomyzidæ*, like the *Agromyzidæ* (and I doubt the correctness of separating them into families), are in a very unsatisfactory state, and the species are difficult to name with certainty. I do not accept the genus *Chromatomyia* of Hardy; it was founded upon pupal characters, and appears to include species of both *Napomyza* and *Phytomyza*.

*Napomyza elegans*, Meig.—This reputed British species may be reinstated in the "List," for I have seen British specimens, one taken by Mr. Malloch in Scotland, and one in the British Museum Collection.

\**Napomyza nigriceps*, v. d. Wulp.—I have taken this species in Cambridge-shire and Suffolk. It superficially resembles *Phytomyza nigripennis*, but the frons is not entirely dark and the hind margins of the abdominal segments are narrowly yellowish.

*Napomyza xylostei*, Desv.—This is the same as the reputed British *P. aprilina*, Gour. My specimens were bred from honeysuckle leaves gathered in Ireland.

*Napomyza glechomæ*, Kalt.—This may be reinstated in the British List, as I possess a specimen bred from *Glechoma* leaves gathered near Lewes (Sussex).

*Napomyza flaviceps*, Macq., and *nigricans*, Macq.—From the descriptions both these species obviously belong to the genus *Napomyza*, and not *Phytomyza*, under which they appear in the "List." I have failed to recognise either as British up to the present.

\**Phytomyza nigritella*, Zett.—I have taken this species at Chippenham (Cambs.), and Mr. Malloch has found it at Bonhill (Dumbarton).

*Phytomyza nigripennis*, Flin.—I have seen specimens of this reputed British species taken in Herefordshire by Col. Yerbury and Dr. Wood; it may therefore be reinstated in the "List."

\**Phytomyza morio*, Zett.—If I have correctly recognised it, this very small dark species occurs in Suffolk (Newmarket and Orford).

*Phytomyza primulae*, Desv.—I have bred this reputed British species from primrose leaves gathered in the garden here (Suffolk). *P. nigra*, Meig., of Hardy (1849), is probably the same.

\**Phytomyza fuscula*, Zett.—As I interpret this species it is not an uncommon one in May in the paddock behind Mr. Verrall's house at Newmarket (Suffolk).

\**Phytomyza veronicæ*, Kalt.—I bred a single specimen of this small species, some years ago, from leaves of one of the common wild species of *Veronica*.

\**Phytomyza crassiseta*, Zett.—A very distinct species, with the arista much more incrassated than usual. It has occurred at Chippenham (Cambs.), and Mr. Malloch has taken it at Bonhill (Dumbarton).

\**Phytomyza angelicæ*, Kalt.—I have bred this from larvæ mining the leaves of *Angelica* gathered at Chippenham (Cambs.).

*Phytomyza syngenesiæ*, Hardy.—I have come to the conclusion that this is the *P. horticola*, Gour., and *geniculata*, Macq., nec Brullé. The larvæ are nearly omnivorous, attacking a large number of plants, but I have bred it principally from leaves of *Sonchus*.

*Phytomyza chærophylli*, Kalt.—Mr. Verrall bred this species years ago from leaves of *Anthriscus sylvestris* gathered near Lewes (Sussex). It was recorded as British by Inchbald in 1889 (Entomologist, p. 87).

\**Phytomyza ruficornis*, Zett.—I have seen specimens from Sussex, Kent, Surrey, Suffolk, and Norfolk.

*Phytomyza flavicornis*, Flin., may be reinstated in the "List." I find it not uncommonly at Chippenham (Cambs.) in April.

\**Phytomyza pullula*, Zett.—Mr. Verrall had named this species from specimens taken near his house at Newmarket (Suffolk).

*Phytomyza terminalis*, Meig.—This is the name now given to  *analis*, Zett. I have not seen a British specimen.

\**Phytomyza tridentata*, Lw.—I took a female of this distinct little species in the garden here (Suffolk) in September, 1909; it comes near *flava*, but has a tridentate thoracic marking, and entirely pale antennae and legs.

*Phytomyza zetterstedtii*, Schin.—This is the *P. maculipes* of Zett.,  *nec* Brullé, and may be confirmed as British, for it appears to be not uncommon so far as my experience goes.

*Phytomyza flaviventris*, Zett.—This very little known species was recorded as British by Mr. C. W. Dale. I have not been able to confirm the identification.

Other species of *Phytomyza* included in the List, but, up to the present, unknown to me as British, are:—*P. plantaginis*, Gowr., *notata*, Meig., *populicola*, Walk., *aquitegic*, Hardy, *nigra*, Meig., and *cinereifrons*, Hardy.

Rayland, Newmarket:

October, 1911.

*Note on Liodes brunnea*, Sturm, and *L. algirica*, Rye.—The following is an exact translation of Sturm's original description of *Liodes (Anisotoma) brunnea*, Jacob Sturm, Deutschlands Insecten, ii, 1807, p. 40: "Brown-red, oval, convex, shining, smooth, the elytra striated with *strong punctures*. Length, hardly one line. Smaller, otherwise the same shape as *L. ferruginea*, only it is more pointed behind; the thorax, too, is less narrowed in front, and therefore appears to be broader. The colour is red-brown, the thorax strongly shining, very finely punctured. The elytra are convex, smooth, *but with rows of very strong punctures* (aber mit sehr starken in Reihen stehenden Punkten gestreift). The tibiae are furnished with small spines, the posterior ones long and strongly bent inwards." (The italics are mine. H. J. D.),

In the Entomologist's Monthly Magazine for August, 1911, p. 176, Dr. Joy states, when writing of *L. brunnea*: "the elytra are parallel-sided to near their basal half, *the striæ are finely and very closely punctured*." Previous to this he writes: "the original description (of *brunnea*) is of little help, as it might apply to many species of *Liodes*" (*l.c.* p. 167). Be this as it may, I think Dr. Joy will himself admit it can only apply to a strongly punctured species, and not to a finely punctured one. It is therefore clear that the *brunnea* of Dr. Joy's paper is not the *brunnea* of Sturm, and it does not matter what Rye or anyone else may have considered *brunnea* to be; it is not Sturm's species, unless the striæ of the elytra are very strongly punctured! I do not wish in any way to detract from the value of Dr. Joy's paper, or to take away any of

the credit which is indeed due to him for his painstaking work on this difficult genus. I do, however, think it is most dangerous to play fast and loose in this way with the original description of a species. Systematic Entomology would be much more pleasant, and very much easier, if we might select certain forms which we choose to represent certain species, ignore the original descriptions and synonymy, and then work out a table to fit this selection.

*Liodes algirica*, Rye.—Dr. Joy states (*l.c.* p. 167): "Mr. Donisthorpe's specimen . . . is a small *L. dubia*"; Dr. Fleischer (*Ent. Record*, 1911, p. 44), says the same insect is *L. algirica*, Rye! Both of them have seen Rye's type, and have examined very many more examples of the *dubia* group than I have, so that my opinion cannot be of much value. Dr. Joy has recently revised the British species of the genus; Dr. Fleischer, on the other hand, has studied the family for many years. It seems to me that my insect differs considerably from all the specimens of *L. dubia* I have been able to compare it with, in the shape of the thorax, the thinness of the tarsi, &c., but Dr. Joy tells me these characters are variable. As Dr. Joy himself stated, at a recent meeting of the Entomological Society of London, that he did not really consider any of the *dubia*-group to be good species, and that *L. algirica* is nothing but a form of *L. dubia*, it is useless to discuss the question further. The specimen will remain in my collection with Dr. Fleischer's label *algirica* attached, to show it is the insect he considers to be *algirica*.—HORACE DONISTHORPE, 58, Kensington Mansions, S.W.: *October*, 1911.

*Occurrence of Longitarsus nigerrimus*, Gyll., in the New Forest.—I had the pleasure of taking a specimen of this species in moss, in a boggy pit, on Setley Plain yesterday. *L. nigerrimus* is closely allied to *holsaticus*, but is smaller, it has no spot on the elytra, and the legs and antennæ are blacker; and the spine at the extremity of the hind tibia is longer and more slender. Although the species has escaped notice in our catalogues, yet it is recorded as found in this country by Weise (*Ins. Deutschlands*, vi, p. 944). He states that it occurs in damp places, from July onwards, in company with *Dibolia occultans*, and may often be found in numbers in the refuse on peat-moors. He suggests the possibility of its being *Thyamis atricornis*, of Stephens. That species is, however, recorded by G. R. Waterhouse, on the authority of the Stephensian collection, as being *T. fuscicollis*.—D. SHARP, Brockenhurst: *Sept* 29th, 1911.

*Homalota basicornis*, Muls.: *synonymical note*.—In my memoir on the genus *Homalota*, I introduced *H. autumnalis* with some reserve, remarking that the male characters did not satisfactorily agree with descriptions. A few years subsequently Mulsant described *H. (Alaobia) basicornis* as a new species, and Ganglbauer states in his work (*Käf. Mitteleur.* ii, p. 187) that my *autumnalis* is really this species. I have never met with "*autumnalis*" again until now, so that I have had no opportunity of investigating the point in a satisfactory manner, and the name *autumnalis* is still retained in our catalogue, notwithstanding the synonymy given by Ganglbauer. Yesterday I found a series of the species in question under the bark of a fallen fir-tree, blown down here last

winter. On examining these specimens I have little doubt that Ganglbauer is correct, and that the *autumnalis* of my collection is really *basicornis*, Mulsant. The only discrepancy arises from the fact that my insect has some fine granules on the 7th dorsal plate of the male abdomen, whereas Mulsant makes no mention of granules there, and Ganglbauer says there are none. This sculpture is, however, so minute, that it may easily be overlooked, and I have little doubt that this will prove to be the case. The figure of the male characters given by Mulsant (*Alcôchariens*, iii, pl. iv, p. 13) does not quite agree with our insect, the lateral spines being exaggerated. His figures, however, frequently exhibit similar defects. There is no reason why the true *autumnalis* should not occur in Britain, as it is distributed from Finland to Caucasus, and perhaps it actually exists in some of our collections.—*Id.*: October 1st, 1911.

*Note on the forms of Galeruca tanacetii, L., occurring in Britain.*—On September 16th I came across numerous examples of *G. tanacetii* on the Morrow Downs, near Guildford. They were plentiful in various places on the gravelly and chalky slopes, running about amongst the short grass, the elongate gravid females (looking just like a small *Meloe*) preponderating, the males being comparatively scarce. The insect, however, was not very easy to secure, as it rapidly buried itself amongst the roots of the grass, &c., when approached. A few pairs were seen *in copulâ*, but the females could not be traced to any particular food-plant, which is said to be *Achillea millefolium*. The long series captured showed but little variation. There are, however, two well-marked forms of the species, both in Britain and on the Continent,—one very shining, with the anterior angles of the prothorax obtuse, and the elytra narrowly sulcate along the outer margin, not or obsoletely costate on the disc, and the apices separately rounded; the other, duller, larger, and more elongate, with the head more densely punctate, the anterior angles of the prothorax dentiform and upturned, and the elytra more broadly sulcate along the outer margin, more or less costate on the disc, and the apices conjointly subtruncate. The Guildford specimens belong to the smaller and more shining form, which is probably the true *tanacetii*, L., and I have others similar from Caterham, Shiere, Woking, Great Yarmouth, &c. The larger form, my specimens of which are from Darenth, Eastbourne, Southend, Reigate, Horning, Oxford, &c., is very like the southern *G. artemisiæ*, Rosenh. (which I have taken at Granada, Spain), but wants the conspicuous pubescence of that insect. The genitalia of the males of the two forms are precisely similar. Bedel (*Faune Col. Bassin Seine*, v. p. 281), who gives *Achillea millefolium* as the sole food-plant of *G. tanacetii*, suggests that the insect bred by Mr. Kew, at Louth, Lincolnshire, from larvæ found on *Scabiosa succisa*\* and *Centaurea nigra* [*cf.* Ent. Mo. Mag. xxiii, p. 107 (1886)], is possibly *G. pomonæ*, Scop. (= *rustica*, Schall.), which has a black variety (*anthracina*, Weise). *G. pomonæ* is a common Continental insect, and may occur here †; it resembles *G. alaudica*, Boh., in colour, at

\* Mr. Blatch is also said by Fowler to have taken the larvæ on this plant, the devil's-bit-scabious.

† Since these remarks have been in type, I have found five examples of *G. pomonæ* amongst the series of *G. alaudica* in the collection of British *Coleoptera* at the Oxford University Museum: one of these is labelled as having been captured at "Wheatley" [near Oxford], and another "coll. Hope," but the British habitat requires confirmation.



least in its typical form, but appears to differ from *G. tanacetii* (which is always black and shining throughout) in having the metathoracic episterna pubescent (instead of glabrous) and the elytra usually costate. This species (*G. pomonæ*) is said to live on *Centaurea jacea* and its allies, and *Knautia arvensis*, and the Louth insect (which I have not seen) therefore might well belong to it, *G. tanacetii* being apparently attached to *Achillea*. The latter has been taken by me in many localities on the Continent — in Norway, Switzerland, N. Italy, Spain, Pyrenees, &c.,—but to the best of my recollection I have never seen it on or near *Tanacetum*. *G. tanacetii* has been recorded by Dury [Ent. News, xiv, p. 146 (1903)] from the United States, but the specimens were subsequently found to be referable to *G. pomonæ*, Scop. [*cf.* Davis, Ent. News, xviii, p. 269 (1907), which seems to have become acclimatized in Ohio and Illinois. The larvæ have been found there on *Phlox divaricata*. The life-history of this insect is fully described by Mr. Davis (*op. cit.* pp. 269–275), and he figures the egg, larva, pupa, and imago. According to Knab [Ent. News, xvi, pp. 230–232 (1905)], the larva of *Galeruca* is cylindrical, rather stout, and supplied with numerous large seta-bearing tubercles; the median tubercles in *G. tanacetii* being arranged in regular longitudinal rows, while in *G. pomonæ* the tubercles of this series are irregularly arranged.—G. C. CHAMPION, Horsell, Woking: October 6th, 1911.

*Note on the habits of an Algerian Cicada (Melampsalta cantans, F.).*—During a recent visit to Algeria with my friend the Rev. F. D. Morice, we spent a few days at Batna (June 22nd—27th), a place not very far from Biskra, but at a considerable elevation (about 3200 ft.). To reach the mountain slopes from this town we had to drive daily about eight miles across barley fields, alternating with stony tracts covered with thistles and other spiny plants and low bushes. In these localities a large robust *Cicada* (*Melampsalta cantans*, F.) was so abundant as to remind one of the migratory swarms of a locust. They seemed to be travelling about the wastes, alighting in large numbers on our clothes and the seats of the carriage, and even on the coachman's whip, as we drove past daily, and so numerous were they that we had to eject them from time to time from the vehicle. There were no trees near, and the insect was seen resting everywhere on the bushes. Their flight was short and heavy, and unlike most *Cicadas*, they could be captured easily by hand. This habit of a large *Cicada* was quite new to me, and therefore seems worth recording.—*Id.*

*Supplementary broods of Lepidoptera in 1911.*—The very interesting note by Mr. G. F. Mathew on a second brood of *Limnitis sibylla* in September (*ante*, p. 235) has induced me to record the occurrence of supplementary generations of several species of butterflies and moths during the past wonderful summer. On September 15th, I noticed *Pararge megera*, in fair numbers and excellent condition, on the cliffs at Milford-on-Sea, Hants.; perfectly fresh specimens of its congener, *P. egeria*, being at the same time on the wing in the New Forest. My friend Mr. C. G. Lamb informs me that *P. megera* was abundant and in fine condition at Padstow, Cornwall, during the last week in September. On

September 26th I saw at Wolvercote a fresh ♂ of *Pieris brassicae*, the second brood of which had quite disappeared by the middle of August; on the 28th, I took a small but fine ♂ specimen of *Porthesia similis* on a gas-lamp, and to-day (October 20th) saw another, quite fresh and of normal size, in a similar situation. A batch of about 70 ova, laid by a ♀ *Parasemia plantaginis* taken at Tubney on June 3rd, hatched about the 14th, and the larvæ, without exception, fed up rapidly to full growth on lettuce leaves; from these I have bred, between August 26th and October 14th, a fine series of the moth, rather above the average size, and a large proportion of the ♀'s having the hind-wings more or less strongly tinged with crimson.—JAMES J. WALKER, Oxford: October 20th, 1911.

*Loxopera beatricella*, Wlsm., in Essex.—One day, at the end of last March, I was passing an old rough field, on the borders of which a few plants of *Conium maculatum*, the common hemlock, grow; by no means a common plant in this district by the way. I have known these plants or their predecessors for at least twenty years, and have more than once searched them for *Depressaria* larvæ, but for some inexplicable reason it had never occurred to me that there might be something of interest in the dead flower stems; upon opening two or three of them on this occasion, I was somewhat startled to find in one of them three larvæ, evidently of a *Loxopera*. What species could it be? I knew of no member of this genus whose larvæ fed on this plant, so a few stems were brought home and placed in the garden. On June 8th two empty pupa cases were seen sticking out of one of the stems, which were at once brought into the house, and the next morning, somewhat to my surprise, I found three *beatricella* had emerged, an insect I had hitherto associated with *Pastinaca sativa*, from which plant it has been bred by Mr. W. Purdey (Ent. Mo. Mag., xxxv, 289). This is quite new to the Essex list. The moths came out with the utmost regularity between 7 and 10 a.m.; after the latter hour not a single specimen appeared until about 7 o'clock next morning. Not a single parasite of any kind was bred from them.—A. THURNALL, Wanstead, Essex: October, 1911.

*On the killing of flies, bees, &c., by wasps.*—As I was sitting in a dining room at Richmond recently, a wasp came in through the window and proceeded to kill a common house-fly, and having done so, carried it off through the window. I saw this done some half-dozen times, but I am unable to say if it was the same wasp or other specimens from the same nest. On another occasion, a wasp caught a "blue-bottle" fly, but finding it too heavy to carry off in one journey, it proceeded to bite off the legs and tried to lift it, but still found it too heavy, and so the fly's head was bitten off, and the body carried off in triumph, the victor afterwards returning for the head! Some few days later, when resting in the garden, I noticed a wasp busily engaged with some object on the path, and, on closer inspection, found that it had succeeded in killing a specimen of *Bombus* at least twice its own size, and had eaten the whole of the abdomen of the bee. I killed this wasp, and was surprised, a few moments later, to find that another had taken its place. These incidents all occurred during the month of August, and are, perhaps, of common knowledge to those who have made a special study of wasps.—J. C. EALES WHITE, Richmond, Surrey: October 3rd, 1911.

## Review.

THE MACRO-LEPIDOPTERA OF THE WORLD. By DR. A. SEITZ. Part I: MACRO-LEPIDOPTERA OF THE PALEARCTIC REGION. Stuttgart: Alfred Kernen Verlag.

The completion of the first volume (dealing with the Palearctic Butterflies), not only in the German, but also in the English edition, and the progress which is being made with various other sections of the work, afford good evidence that both editor and publishers, together with the many other collaborators, are taking their gigantic task in earnest, and that the present generation of Lepidopterists may look forward to the possession, at no very distant date, of what has never before been possible of attainment—a tolerably complete iconography of the known *Macro-Lepidoptera*, together with letter-press adequate for the determination of species, and often even further information as to their habits and the outlines of their life-history. When the work was first launched some five years ago, the fear was expressed in some quarters that its scope was almost too vast to be capable of actualisation, and that it might fall through after the better known families had been worked out; but we are now assured that all the principal families are in the hands of competent specialists, the preparation of those which are not already actually in progress, well advanced, and material accessible for figuring from the richest collections. A rumour that the English translation might be abandoned is, we learn on the highest authority, absolutely without foundation, and certain sections of the work are even contributed originally in English. Already 69 parts of the Palearctic section are to hand, and 60 of the Exotic.

As regards the general scheme of classification, the Introduction disclaims any purpose of deciding between rival scientific systems, and Dr. Seitz is only concerned to find a practicable sequence. Perhaps some critics will say he has erred in the direction of ultra-conservatism in this respect, and although he recognizes the soundness of some of the findings of modern research (such as the Tortricid affinities of *Cossus*) he shows no interest in such revolutionary proposals as those of Tutt in Vol. i of "British *Lepidoptera*." Indeed, Entomologists to whom Staudinger's Catalogue has been the "last word" in taxonomy, will have little difficulty in finding their way through their "Seitz," or through the Palearctic Rhopalocera, at least. At the same time, individual collaborators have been allowed a good deal of latitude in matters of detail.

The Eastern Palearctic Region is given a wider extent than in Staudinger, reaching southward to about 30° N. lat. This is certainly much truer to the known facts, although naturally there are districts here and there in which there is a real overlapping in faunistic character.

The first volume is the work of several hands, and it is no disparagement to say that its quality is not quite equal throughout. We have no space for detailed criticism, and can merely indicate that Seitz himself is responsible for the *Danaidæ*, *Erycinidæ*, *Lycænidæ*, and, in large measure, for the *Papilionidæ*, *Satyridæ*, and *Nymphalidæ*, besides a general introduction to the *Grypocera*; Röber has worked out the *Pieridæ*; Stichel, *Doritis*, *Parnassius*, *Morphidæ*, and a part of the *Nymphalidæ*; Mabille, the *Hesperidæ*; Eiffinger, the genus *Erebia*.

The general arrangement, indexing, &c., are good; the illustrations excellent, and marvels of cheapness; and the work is worthy of the support of all who are interested in the *Lepidoptera*, or desirous for the wider diffusion of knowledge concerning them.

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## Obituaries.

*George Henry Verrall*, well known as the *doyen* of British Dipterists, and a valued contributor to the pages of this Magazine, passed away, after a trying illness of some months' duration, at his residence, Sussex Lodge, Newmarket, on September 16th, 1911, in his 64th year.

The youngest of seven children, he was born at Lewes, on February 7th, 1848, of a family whose ancestors had lived in the Borough and had taken an active interest in the administration of its affairs for hundreds of years. From 1857-1864, he attended Lewes Grammar School, receiving a good classical education of the kind then taught in such old-established institutions. Upon leaving, he read for the Civil Service (Somerset House), but decided that such a sedentary life was not to his taste, nor were the prospects of promotion satisfactory. About 1866, he became private secretary to his eldest brother, who had the management of various race meetings, and remained with him until about 1875, at which period he was nearly tempted into following the example of Bates and Wallace in undertaking a collecting expedition abroad. The death of his brother, however, in 1877, and his appointment as successor in the business his brother had built up, gave him sufficient scope for his energies and kept him in England. In 1879 he married and settled down for life at Newmarket, building himself a house and calling it "Sussex Lodge," after the county of which he was a native. He was very successful in business, becoming in 1881 partner in the firm of Pratt & Co., Race Course Managers and Bankers. In course of time he accumulated sufficient wealth to enable him to prosecute with success most of his ambitions, to supply the means to pursue his favourite study of the *Diptera*, and to collect together a valuable library upon the subject.

He developed a love for Natural History at school, and very shortly after leaving decided to confine his attention to the *Diptera*, an order then in a state of chaos; by indefatigable collecting and study he reduced this chaos into something like order, publishing, in 1888, a "List" of the British species, of which a second edition, the result of further research, appeared in 1901, while he was at work upon a third edition at the time of his death. In his youth he was an intimate associate of many of the famous entomologists of those days, including Stainton, Rye, Douglas, Scott, McLachlan, etc., and learnt to appreciate the benefits of friendly social intercourse among those devoted to the same pursuits. This led him to take great interest in the "Entomological Club," a small and select Society, founded in 1826, "for the purpose of social meetings at the residences of members, for the communication of facts, the comparison of notes, the naming of specimens, and mutual improvement in the science of Entomology."



*Photo.*

*Clarence Hailey.*

*Yours faithfully.*

*G. H. Verrill*



He was elected an honorary member of this Club on February 16th, 1887, at a meeting held at Mr. Grut's, and a full member at the next meeting on April 27th, 1887 (the other members then being Dr. H. Francis, Dr. Lowne, Dr. Thudichum, and Messrs. Grut and S. Stevens), and immediately proceeded to make the meeting at which he was host a rallying point for students of all branches of Entomology. Many a life-long friendship has originated at the Holborn Restaurant where his meetings were held, and many a wrongly formed impression of a correspondent has been rectified, while all those who have had the pleasure of attending on these occasions, will ever remember the kindly generosity and the unflinching good nature and geniality of their host. It was mainly owing to his efforts that this old-established Club was prevented from dying out.

His was a well-known figure at the meetings of the Entomological Society of London, which he joined in 1866; always taking a keen interest in its affairs, he acted as Honorary Secretary for a short period, served many times upon the Council, and in 1899 had the honour conferred upon him of election as its President. His first entomological note was upon the occurrence of *Diaemia ramburialis*, Dup., at Lewes, published in this Magazine for 1866, and two years after, in the same Magazine, he published his first article upon *Diptera* (Notes on some British *Syrphi*). Though never a voluminous writer, he contributed many short notes for the Magazines, including "Notes on the British *Tipulidæ*," in 1886-87, and valuable "Tables of the British species of *Dolichopodidæ*," in 1904-5. But the chief object of all his collecting and studies had always been the production of a standard work on "British Flies," by which he hoped to place the knowledge of the British *Diptera* upon a firm footing. Unfortunately, only two volumes have appeared from his pen, one on the *Platypezidæ*, *Pipunculidæ* and *Syrphidæ*, and one on the families *Stratiomyidæ* to *Cyrtidæ* inclusive, but these will long remain monuments to his memory.

Though not a great traveller, he visited most of the capitals of Europe to examine collections and to make the acquaintance of fellow-workers abroad, but he never collected outside the British Isles, and his only publications on foreign *Diptera* were on the *Diptera* of Kerguelen Island (Phil. Trans. Royal Soc., 1879), and on the *Syrphidæ* collected near Aden by Col. J. W. Yerbury (Trans. Ent. Soc. Lond., 1898). He was an excellent field naturalist and collector in his best days, never disheartened, and apparently with no knowledge of what fatigue meant; but, for the last few years, his more intimate friends had noticed, with misgivings, his inability to undergo exertion, the failing power in the stroke of his net, and his lack of application, all probably the results of the condition of his heart, which was also largely responsible for bringing on the illness from which he died.

He was a great believer in Lord Rosebery's maxim, that it is the duty of every good citizen to take an active part in public affairs, and no man ever lived up to this creed more fully than he did. There was scarcely an office to which his fellow-townsmen could elect him that he did not fill at one time or another, with credit to himself and with advantage to the community. In addition, he gave a large amount of his valuable time to the affairs of the county as Justice

of the Peace, and as Councillor and Alderman of the Cambridgeshire County Council, of which body he was Vice-Chairman at the time of his death. Finally, he fought three parliamentary elections, and was returned at the second (in January, 1910), as representative for East Cambs.

He lived a strenuous life, and died, as he wished, in harness. According to his express desire his body was cremated, his ashes being interred in Newmarket Cemetery on September 22nd, in the presence of a very large number of sympathisers and friends. His wife, who survives him, bore him no children.

*Alexander Henry Clarke.*—We notice with regret the death of Mr. Alexander Henry Clarke, of Earl's Court, London, who was one of the Senior Fellows of the Entomological Society, having been elected so long ago as 1867. He was born on January 31st, 1839, and died on July 25th last.

Mr. Clarke was educated at King's College. Through his whole life he was a diligent collector and observer of the *Lepidoptera*; his name is frequently mentioned in the works of South, Tutt, &c., and he contributed many notes and observations to the "Entomologist's Record," the last of these appearing in January, 1906. His scientific studies were pursued mainly as a recreation in the intervals of business, as he was an active partner up to the time of his death in a leading firm of solicitors in the City. Besides Entomology, he was well versed in several subjects, for he was also a Botanist, an Assyriologist, and a student of ancient History in general. He formed a large collection of *Lepidoptera* from all parts of the world. Many of his collecting excursions had for their starting point a small house at Marlow, which he kept up for this purpose to the time of his death; and in 1859 he captured in that district a specimen of the then ver. *Orrhodia erythrocephala*, F., which he afterwards presented to the National Collection.

*Albert Harrison.*—Lepidopterists have lost another ardent worker in Mr. Albert Harrison, of South Woodford, Essex, whose death from hæmorrhage on the brain occurred suddenly on August 28th last. Born in 1860 at the New Pale Farm, near Frodsham, Cheshire; he was educated at the Liverpool Institute, but when only fifteen years of age joined the Sugar Refinery of Messrs. Henry Tate and Sons in Liverpool, from whence, three years later, he was transferred to the London branch of the same firm. Here his business aptitude made his promotion rapid, and he was eventually appointed Manager.

From a boy he was keenly interested in Natural History, and his early home being situate close to the famous Delamere Forest, he had every opportunity of following the bent of his inclination. So fond indeed was he of Delamere, that up to the time of his death, he usually spent part of his holiday each year in its vicinity. But it was not until 1888 that he began the study of the *Lepidoptera* in a serious and scientific method. In this he was joined by Mr. Hugh Main (so well known in connection with the photographic delineation of insect life) with whom he became so intimate a friend, that a sort of partnership was established between them in their scientific studies, and even to the joint ownership of the fine collection formed by them. Of late years Mr.



Harrison had been greatly interested in the Mendelian Theory in its relation to *Lepidoptera*, and had carried out extensive experiments with the various forms of *Aplecta nebulosa*, and *Pieris napi*, and its var. *bryonia*, the records of the results of which, in the transactions of the Entomological and South London Societies, we have all read with so much interest; whilst the exhibitions of the remarkable series of both species afforded great delight to those who saw them. At the time of his death he was engaged in experimental crossings of the various forms of *Boarmia repandata*. For many years few men were better known at the Meetings of the South London Entomological Society, and later at those of the Entomological Society of London, for he was rarely absent, and always took the greatest interest in the proceedings. In 1899 he was President of the former Society, and served on the Council of the latter from 1908 to 1910. In 1898 he was elected a Fellow of the Linnean Society, and was also Fellow of the Entomological, Zoological, Royal Microscopical, and Chemical Societies, and Member of many others.

As a man he was esteemed by every one with whom he came in contact; quiet and unassuming, genial, and ever ready to help his fellow workers in their Entomological pursuits.

It is satisfactory to know that the collection and his work will be continued by his brother-in-law, Mr. Hugh Main.

The funeral took place at Alvanley, near his old home in Cheshire, and was attended, in addition to many relatives and old Cheshire friends, by representatives of several of the Societies with which he had been connected, and by representatives of both the Liverpool and London Branches of Messrs. Henry Tate and Sons.—G. T. P.

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## Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, September 14th, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. Turner exhibited a photograph of a very dark specimen of *Lithosia deplana* (*helvcola*) sent him by Mr. Cockayne, and asked if such melanic specimens had been recorded. Mr. Grosvenor, an extensive series of *Pieris napi*, taken and bred in 1911; selected to show every phase of variation obtained, including a gynandromorph, a male with female markings, specimens of yellow general coloration, &c. Mr. West (Greenwich), *Teratocoris antennatus* and *Nabis lineatus*, two uncommon species of *Hemiptera*, from near Gravesend. Mr. Gibbs, long and varied series of *Satyrus semele* v. *aristæus*, *Pararge megera* v. *tigellus*, and *Epinephete jurtina* v. *hispulla*, from Corsica. Mr. Kaye, young larvæ of *Rumiccia phlæas*, *Plusia bractea*, and a very rare Sphingid, *Xylophanes isaon*, new to science, taken by him in S. Brazil. Mr. Curwen, a large number of aberrations of British *Lepidoptera*. Dr. Chapman, empty and full galls of *Andricus ostreus*, the peppercorn gall. Mr. Barrett, living larvæ of *Syntomis phegea*, from Sicily.

Thursday, September 28th, 1911.—The President in the Chair.

*Ephyra pendularia ab. subroseata*.—Mr. Kaye exhibited a long series of this species, including some very beautifully marked examples of the variety. *Hadena contigua*, bred from ova.—Capt. Cardew, a beautiful series bred from ova laid by a New Forest ♀; 49 imagines were obtained from 62 fertile ova. "Butterflies in the Forest of Arques."—Mr. Moore read a short note on a visit recently made, and exhibited a number of species he obtained. He referred to the abundance of *Pieris napi*, and the scarcity of *P. rapae*, in the Forest about August 12th last. *Agrius convolvuli* in Deptford.—Mr. Moore, the only one noted by him this season. *Aplecta prasina (herbida)*, irregular feeding up.—Mr. Main, a bred example, remarkable for the delicacy of its colouring. Some of the larvae were still small, some were in pupæ, and this had emerged. *Hadena protea*, *Anthrocerus hippeocrepidius* (?), and teratological *A. filipendula*.—Mr. Buxton, a long series of the first from near Tonbridge at sugar; and of the last species one specimen had the antennæ short, but very thick and contorted.—HY. J. TURNER, Hon. Secretary.

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ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, October 4th, 1911.—The Rev. F. D. MORICE, M.A., President, in the Chair.

Mr. C. B. Williams, of 20, Slaty Road, Birkenhead, was elected a Fellow of the Society. The President proposed a vote of condolence with the relatives of the late Mr. Verrall, which was seconded by Prof. Poulton. A vote of condolence with the relatives of the late Mr. Albert Harrison was proposed by the Rev. G. Wheeler, and seconded by Mr. W. J. Kaye; and a similar vote in the case of Mr. S. H. Scudder was proposed by Mr. Champion, and seconded by Prof. Poulton. Mr. Donisthorpe exhibited specimens (♂♂ and ♀♀) of *Formica pratensis*, De G. (*congerens*, Nyl.), taken at Rannoch in June, also ♀♀ of *F. sanguinea* captured in the same region, a new locality for it; and ♀♀ and ♀♀ of a new race of *Formica rufa*, also from Rannoch. Mr. Bethune-Baker, a specimen of *Melanargia galathea*, var. *lugens*, taken at Digne in July last. It is an entirely dark brown (almost black) form, with no white markings, though the ordinary markings are just traceable in a slightly lighter shade. Commander Walker observed that a similar example had also been taken in England. Mr. Norman H. Joy, a remarkable specimen of *Oxytelus* taken at Tresco, Scilly Isles, April, 1908. In many respects it is quite intermediate in character between *O. sculptus* and *O. laqueatus*, Marsh. It is probably a species new to science, but may possibly be a hybrid of these two species. He also showed *Liodes stenocoryphe*, Joy, ♂, taken by Mr. W. E. Sharp, at Forres, in 1910, as well as its near allies for comparison, viz., *Liodes picea*, Ill., taken by Mr. Tomlin and Mr. Joy at Dalwhinnie, Inverness-shire, in September, when the larva was also found feeding on a small underground fungus; *L. dubia*, Kug., and its various varieties; and *L. algirica*, Rye, almost certainly only another variety of this species. Mr. W. C. Crawley, a mixed colony of *Lasius umbratus* and *L. niger*. This colony consists

of a ♀ *L. umbratus*, which was accepted in 1908 by a queenless colony of *L. niger*. During 1909 and 1910 only *niger* ♂♂ came to maturity in the nest; those, therefore, that hatched in 1910 must have been from parthenogenetic eggs laid by the *niger* ♀♀. Over a dozen of these latter were dissected, and found to contain no *receptaculum seminis*. Mr. Donisthorpe commented on the interest of Mr. Crawley's experience, remarking that while it had formerly been supposed that parthenogenetically laid ova produced only ♂♂, Mr. Crawley had shown, and proved by dissection, that ♀♀ were capable of parthenogenetically producing ♀♀. The President observed that parthenogenesis was not unusual in sawflies, and mentioned that in one species, *Crasus varus*, which had been founded on a ♂ specimen, the original specimen was the only ♂ known. Dr. M. Burr remarked that the common "stick insect" is largely parthenogenetic and has been bred parthenogenetically for more than twelve consecutive generations. Mr. E. A. Cockayne, a melanic specimen of *Lithosia deplana*, ♂, taken in Surrey last July. Mr. J. Platt Barrett, some species of Sicilian butterflies taken this year in contrast with corresponding British species, viz., *Euchloë cardamines* and *E. damone*, *Gonepteryx rhanni* and *G. cleopatra*, *Hipparchia semele* and var. *algerica*. Small Southern forms were also exhibited of *E. cardamines* and *Liptosia sinapis*. Dr. Chapman, living larvæ of *Albulina pheretes*, and a living imago of *Latiiorina orbitulus*, and observed that his former suggestion that *Albulina pheretes* probably had a larva without a honey gland was incorrect. The larva of *A. pheretes* possesses a honey gland and fans. Owing probably to the warm weather during August and September, three of the larvæ reached the last instar, and he was therefore able to exhibit the larva in the 3rd, 4th, and 5th (or last) instars. *L. orbitulus* also afforded "forward" larvæ this season, and the living butterfly of this autumnal emergence which was exhibited left the pupa on October 2nd; but *Vacciniina optilete*, without exception, stopped at the 3rd or hibernating instar. Mr. J. H. Durrant, two new British species of *Rhyacionia* Hb. (= *Retinia* Gn.; *Evetrie* Hb., Meyr.), viz.:—*Rhyacionia purdeyi*, sp. n., taken among Scotch fir at Folkestone at the end of July, 1911, by Mr. W. Purdey, a very distinct species intermediate between *sylvestrana*, Crt., and *duplana*, Hb.; and *R. logaea*, sp. n., from Forres, Scotland (W. Salvage and H. McArthur), closely allied to *duplana*, Hb., and *posticana*, Ztst. *R. duplana*, Hb., ♂ and ♀, as also both sexes of *R. posticana*, were exhibited for comparison. Mr. J. H. Durrant, also eighteen specimens of *Colias* taken by himself in a field of lucerne at Barcote, near Faringdon, Berks, from September 4–10, 1892. These comprised both *hyale* (2) and *edusa* (14) and two aberrations of the latter, one of a very light orange colour (ab. *helicina*) and the other a fine ab. *helice*. All the specimens of *C. edusa* were of a yellowish-orange tint. Mr. W. J. Lucas, specimens of *Sympetrum fonscolombii*, a species very seldom taken in Britain, and quite new to the Forest, at a pond in the South of the New Forest, on August 4, 7, 8, 25 and 29, all but one being males. *S. fonscolombii* is usually considered to be a casual visitor only to our shores; but this case seems rather to throw doubt on this supposition, for the date is a late one, the insects on the first visit to the pond were very fresh, one was a female, which looked even fresher than the males, and females seem seldom to join migratory swarms.

Dr. F. A. Dixey read a letter received by him from Mr. E. A. Agar, of Dominica, West Indies, on the subject of the Separation of the Sexes of *Hypolimnas misippus*, the writer remarking that in that island, although haunting similar localities, the ♀ remains on the coast, while the ♂ is to be met with some distance inland. The former is scarcely ever to be seen in company with the ♂ of its own species, though it flies with *Danaïda plexippus*, of which it is a mimic. Dr. Dixey remarked that it was a common experience that one sex of a butterfly at any given time was more in evidence than the other. Mr. Millar, of Durban, had drawn his attention to the fact that, speaking generally, the males were more apt to be on the wing during the morning, and the females in the later hours of the day. Dr. Longstaff observed that in North Africa certain species of *Teracolus* gave abundance of ♂ ♂ in the morning, whilst in the afternoon the ♀ ♀ predominated greatly. Prof. Poulton exhibited the cocoon of the Hyspid moth, *Deilemera antinorii*, Oberth., which Mr. W. A. Lamborn had intended to exhibit on June 7th last. He also exhibited examples from three of the all-female broods obtained by Mr. W. A. Lamborn, chosen because they prove that the unisexual batches are not necessarily associated with either of the forms of *eneceon* in the locality, one brood being all *lycia*, another all *eneceon*, while the third was as nearly as possible half and half (23 to 24). Prof. Poulton further exhibited a series of eight *Aeræa alciope* and five *A. aurivillii*, bred in the present year by Dr. G. D. H. Carpenter from thirteen small larvæ found on a single leaf of the food-plant on Damba Island, in the Victoria Nyanza to the east of Entebbe. The result entirely confirmed the conclusions of Mr. Eltringham and Dr. Jordan that *A. aurivillii* is the ♀ of *A. alciope*. The Rev. G. Wheeler, some living ♂ ♀ of a small ant, identified by Mr. Donisthorpe as *Monomorium pharaonis*, imported from Madeira, and now settled in England, together with several butterflies whose bodies and heads had been devoured by them while in the setting box. He observed that these insects had all been killed in the cyanide bottle, whilst others in the same setting box which had been injected with oxalic acid were left untouched. The President said that about the beginning of July this year he had noticed, while collecting near El Guerrah, the junction for Constantine, Biskra and Alger, both sexes of the yellow and black *Leucospis gigas*, and of another red and black *Leucospis*, flying in great numbers round a cairn of stones on the top of a hill, and suggested that the common instinct to seek high places might provide a meeting-ground for the sexes.

Commander Walker read the following papers—(1) Report on a collection of *Bombyliinæ* (Diptera) from Central Africa, with descriptions of new species, by Prof. Mario Bezzi, Turin, Italy (communicated by G. A. K. Marshall, F.E.S.). (2) An enumeration of the *Rhynchota* collected during the Expedition of the British Ornithologists' Union to Central Dutch New Guinea, by W. L. Distant. (3) *Estridæ Caricolæ*, by Ivan E. Middleton, F.E.S., of Serampore, India.—G. WHEELER, *Hon. Secretary*.

**NOTE.**—Subscriptions for 1911 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

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*Duplicates* :—*Sparganii*, *arion*, *albimacula*, *obfuscata*, *xanthomista*, *abruptaria*\* (black), *fasselina*,\* *pilosaria* (black), *zanaria*,\* *hirtaria*, &c.—*W. J. OGDEN*, 87, Clapton Common, London, N.E.

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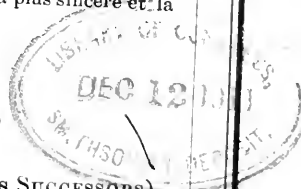
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## TWO COLEOPTERA NEW TO SCIENCE.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

BLEDIUS SECEDENDUS, *sp. nov.*

When re-arranging my collection to make room for the new species of *Bledius* recently described by Dr. Sharp, I took the opportunity to critically examine other members of the genus. I was at once struck by evidently specific distinctions between the so called "light" and "dark" forms of *B. arenarius*, Payk. On communicating this observation to Dr. Sharp he informed me that he had separated these two forms as far back as 1871, but had never published any note on them. Mr. P. de la Garde had also a short time ago pointed out the specific differences to him. Under the circumstances I hesitated to take further steps in the matter, but Dr. Sharp asked me to do so, and Mr. de la Garde has kindly allowed me to see his long series of both species. It is evident that the original description of *B. arenarius* applies to the form with straw-coloured elytra, and I therefore propose the name *B. secedendus* for the species with dark elytra. It may be briefly described thus:—

Black, with apical border and posterior angles of elytra broadly dirty testaceous; mandibles long and slender; first joint of antennæ pitchy, with extreme base and apex testaceous, the other joints obscurely testaceous; head and thorax dull, alutaceous, moderately strongly punctured, the latter with a deep central line and strongly contracted at base; elytra broader than thorax, about one-third longer than wide, closely and moderately strongly punctured; hind body shining, finely alutaceous and obsolete punctured; femora pitchy, tibiæ pitchy-testaceous, tarsi testaceous. Long., 3.5 mm.

*B. secedendus* differs from *B. arenarius* in the following characters:—It is larger and stouter; the antennæ are slightly darker; the head and thorax are more strongly punctured and alutaceous; the thorax has a deeper central line, and the sides are more abruptly contracted at the base, the basal portion being longer and the posterior angles more prominent; the elytra are darker and more strongly punctured; the prominences at the outer angles of the last dorsal segment of the hind body are blunter; the tibiæ are slightly more dilated, and the spines longer.

The *B. arenarius*, v. *subniger*, of Schneider (from the Island of Borkum), is considered by its describer as nothing more than a monstrosity. Mr. de la Garde's specimens of *B. secedendus* were taken at Dovercourt and Dawlish, and I have captured it at Treseo, Scilly Isles, and Cloghane, Co. Kerry.

RHYNCHITES HARWOODI, *sp. nov.*

The differentiation of the two species of *Rhyrachites*, *R. nanus*, Payk., and *R. uncinatus*, Thoms., has always been a puzzle to me. The difficulty has been quite cleared up by the discovery that there is a third species, resembling *R. uncinatus* almost exactly in shape, but having no tooth at the apex of the anterior tibiæ. I have much pleasure in naming this species, *R. harwoodi*, in honour of my friend, Mr. P. Harwood, who did so much for the Berks County List of *Coleoptera*, when resident at Newbury.

The following is a short description of the species:—

In general appearance very like *R. uncinatus*; blue, thorax with a slight greenish tinge, legs and antennæ blue-black; rostrum rather long and slender, longer in ♀ than ♂; thorax longer than broad, distinctly rounded at the sides, closely but rather variably punctured; elytra much broader than thorax, widened behind middle, striae strongly punctured, interstices very narrow and somewhat rugose; apex of anterior tibiæ simple; ♂, apex of middle and posterior tibiæ with a small tooth. Long., 3—4 mm.

*R. harwoodi* differs from *R. uncinatus* in having no tooth at the apex of the anterior tibiæ; the rostrum is longer, and so appears to be more slender, in both sexes (in the ♀ *R. uncinatus* it is not, or scarcely, longer than in the ♂ *R. harwoodi*); the thorax is more greenish in colour and is generally more rounded at the sides, but the punctuation and depth of the central furrow is variable in both species; the elytra are, on the average, slightly broader, the striae are more strongly punctured, and the interstices distinctly narrower. From *R. nanus* it is easily distinguished by its bluer colour, broader and shorter form, much longer and more slender rostrum, more closely punctured, and more rounded sides of thorax, and average larger size. The median lobe of the ædeagus is not quite so parallel-sided as in *R. uncinatus* or *R. nanus*, and is narrower at the apex; the cap-piece is a little broader than in *R. uncinatus*, and has slightly longer hairs at the apex; in *R. nanus* this structure is quite narrow, with much shorter hairs. All the specimens I have seen of *R. harwoodi* were taken in this neighbourhood, in Berks and Hants, and I believe it is common here. It is probably a widely distributed insect.

Bradfield, Berks:

November, 1911.

## COLEOPTERA IN HEREFORDSHIRE (IV).

BY J. R. LE B. TOMLIN, M.A., F.E.S.

My last series of notes on collecting in this county appeared in the "Ent. Mo. Mag.," 1910, pp. 139-141. The list that follows is the result of several forays at different times of year, and a fair amount of fresh ground has been explored. I published a note in the "Entom. Record," 1910, p. 189, recording 13 species of myrmecophilous beetles from nests of *Formica rufa* at Symond's Yat. These were all new to Herefordshire. The matter of political boundaries in the Symond's Yat neighbourhood is rather complicated, and, without an ordnance map, bewildering. You get out of the train in Gloucestershire, but cross into Herefordshire to post a letter some 50 yards away; the opposite bank of the river, with the big limestone masses of the Great and Little Dowards (almost the only limestone in Herefordshire), is part of the latter county for some two miles in the Monmouth direction, whereas the left bank belongs to Gloucester from the station downwards.

The following species are all new to the county list. I would call special attention to the occurrence of *Bembidium adustum*, Schaum. The localities Cusop and Olchon are used to designate briefly two small valleys running up into the Black Mountains. The species recorded as from River Monnow, were all collected on the bank of that river between Pontrilas and a point about a mile from Pandy. The total number of species now on record is well over 1,300. I am much indebted to Mr. Elliman for looking over a number of *Homalota*.

*Carabus catenulatus*, Scop., Cusop in August; *C. violaceus*, L., and *C. monilis*, F., both rare on Huntsham Hill; *Chlaenius vestitus*, Pk., common at Huntsham Pool and at Whitbourne; *Pterostichus minor*, Gyll. Mathon, rare in wet moss; *Amara fulva*, de G., sandy spots by the Monnow, rare; *A. communis*, Pz., Colwall and River Monnow; *Bembidium bruxellense*, Wesm., River Monnow, taken by Mr. Dutton; *B. paludosum*, Pz., common in August by the River Teme at Whitbourne, River Monnow in two or three spots; *B. adustum*, Schaum, not at all uncommon at Whitbourne with *B. paludosum*.

*Haliphus obliquus*, F., Mordiford, Colwall, and Whitbourne, but never common; *Deronectes latus*, Steph., one in the Monnow at Pontrilas (August); *Hydroporus gyllenhali*, Schiödte, Holme Laey, rare; *H. septentrionalis*, Gyll., common in August in the Monnow and the Dulas; *Dytiscus punctulatus*, F., Westhide and Olchon valley, rare; *D. marginalis*, L., not at all common, Ham Green, Pontrilas; *Laccobius alutaceus*, Th., widely distributed; *L. bipunctatus*, F., Colwall and West Malvern, never common.

*Ochthebius pygmaeus*, F., fairly common; *O. bicolor*, Germ., West Malvern; *O. rufimarginatus*, Steph., scarce at Cusop and Kilpeck; *O. nanus*, Steph.,

Mathon, rare; *Ceryon unipunctatus*, L., Seager Hill and at the Leech Pool, scarce; *C. terminatus*, Marsh., in several localities.

*Aleochara tristis*, Gr., very common on Seager Hill in August in horsedung; *A. brevipennis*, Gr., River Monnow, rare at roots of grass in damp ground; *Microglossa nidicola*, Fairm., Mathon sandpits, common; *Oxygoda nigricornis*, Wat., West Malvern by sweeping; *O. umbrata*, Gyll., not uncommonly swept; *Ischnoglossa corticina*, Er., Seager Hill, several; *Oralea badia*, Er., sparingly in wet moss at Cusop; *Homalota currax*, Kr., Cusop and Ewias Harold, common, and has occurred near West Malvern; *H. parvus*, Er., common at Cusop, Mathon, and Ewias Harold; *H. cambrica*, Woll., Whitbourne, West Malvern (swept); *H. hygrotopora*, Kr., by the Dulas, rare; *H. oblongiuscula*, Sharp, one with the last; *H. graminicola*, Gr., apparently very local; *H. monticola*, Th., rare, single examples at Colwall and on Seager Hill; *H. aequata*, Er., common; *H. angustula*, Gyll., by the Devereux Pools, rare; *H. exilis*, Er., common in a mole's nest near West Malvern (March); *H. aquatica*, Th., Seager Hill, Cusop, and Whitbourne; *H. xencicollis*, Sharp, Ledbury; *H. fungicola*, Th., common in fungi; *H. sericea*, Muls., *H. atricolor*, Sharp, common; *H. germana*, Sharp, Seager Hill, several in rotten beech-wood; *H. sordidula*, Er., one swept at West Malvern; *H. canescens*, Sharp, one swept on Seager Hill; *H. atramentaria*, Gyll., Cusop (Dutton); *H. laticollis*, Steph., Seager Hill, swept rarely; *Ischnopoda carulea*, Sahlb., rare in wet moss, River Monnow, Olchon valley; *Tachyusa scitula*, Er., Whitbourne, rare by the Teme; *T. flavitarsis*, Sahlb., common by the River Monnow; *T. umbratica*, Er., rare at Whitbourne and Ewias Harold, common in damp ground by the Monnow; *Falagria sulcatula*, Gr., rare in shingle by the Monnow; *Gyrophana affinis*, Mann., Mathon and Cusop; *G. minima*, Er., Rowburrow Wood, rare; *Agaricochara levicollis*, Kr., not uncommon in fungi; *Placusa pumilio*, Gr., rare at Colwall under elm bark; *Bolitochara lucida*, Gr., widely distributed and common; *Oligota apicata*, Er., one swept on Seager Hill; *Conosoma littoreum*, L., has occurred rarely in a garden at West Malvern and in fungus on Seager Hill; *Euryporus picipes*, Pk., Cusop, rare in moss; *Quedius lateralis*, Gr., Seager Hill, rare; *Q. cruentus*, Ol., Stoke Edith and Colwall in fungi; *Q. molochinus*, Gr., common; *Q. umbrinus*, Er., Cusop in moss, very common; *Philonthus scutatus*, Er., occurs sparingly on sandy banks by the River Monnow, this is possibly its most southern locality; *P. cephalotes*, Gr., one in carrion, Symond's Yat; *P. debilis*, Gr., River Monnow and at Mathon; *P. agilis*, Gr., Seager Hill, not rare; *P. ventralis*, Gr., Mathon in hay, Seager Hill in dung; *P. micans*, Gr., damp ground in several localities; *P. fulvipes*, F., abundant in shingle by the Monnow and Dulas; *Actobius signaticornis*, Muls., by the Monnow and the Dulas; *A. procerulus*, Gr., rare in shingle by the Monnow, close to Llangua; *Stilicis geniculatus*, Er., Olchon valley (Dutton); *Scopaeus sulcicollis*, Steph., very rare, Mathon sandpits and Whitbourne; *Lithocharis ochracea*, Gr., West Malvern and Mathon; *Stenus crassus*, Steph., one at Kilpeck; *S. latifrons*, Er., Cusop, Leech Pool, and by the Monnow (Dutton); *Ancyrophorus omalinus*, Er., Ewias Harold, Olchon, River Monnow, and on floating wood with *Macronychus* at Whitbourne; *Trogophlaeus arcuatus*, Steph., in wet moss by the Monnow, Cusop, and Olchon dingles; *Lesteva sicula*, Er., Cusop (Dutton); *Homalium septentrionis*, Th., single examples

at Mathon and Cusop by sweeping; *Hapalarca pygmaea*, Th., Seager Hill, several times in rotten beech wood; *Eusphalerum primulae*, Steph., Great Doward, common in primroses; *Megarcturus denticollis*, Beck., Colwall, Ledbury, and West Malvern; *M. sinuato-collis*, Lac., Stoke Edith, Seager Hill, Bromyard; *Phlebotium clypeatum*, Müll., generally distributed; *Pseudopsis sulcata*, Newm., Mathon, very rare in hay.

*Clambus punctulum*, Beck, West Malvern and Devereux Pools; *Colon dentipes*, Sahlb., one swept at West Malvern; *Neuraphes rubicundus*, Schaum, one swept at West Malvern; *Scydmaenus exilis*, Er., Seager Hill, not uncommon by sifting rotten beech wood; *Euthia scydmaenoides*, Steph., R. Monnow and West Malvern, by sweeping; *Bibloporus bicolor*, Denny, Seager Hill, common with *Scydm. exilis*; *Euplectus signatus*, Reich., West Malvern, in hotbeds; *E. nanus*, Reich., with *Bibloporus* and *Scydm. exilis*, rare; *E. picus*, Mots., Seager Hill and West Malvern, not rare; *Ptenidium intermedium*, Wank., R. Monnow, in shingle; *P. brisouti*, Matth., not uncommon on mud at Whitbourne and Ewias Harold: I am indebted to Mr. Britten for naming these two species; *Anatis ocellata*, L., on larch at Westhide (Wood); *Coccinella 11-punctata*, L., Cusop and Mathon, not common; *Scymnus redtenbacheri*, Muls., one swept on the Great Doward; *S. capitatus*, F., widely distributed on oak; *Cerylon histeroides*, F., common; *C. fagi*, Bris., Seager Hill, scarce in rotten beech wood; *Hister unicolor*, L., West Malvern and Bromyard; *H. carbonarius*, Ill., Seager Hill in dung; *H. 12-striatus*, Schr., one with the last; *Micropeplus staphylinoides*, Marsh., Colwall, Stoke Edith, West Malvern, and Seager Hill (much commoner than *M. margaritæ*); *Rhizophagus perforatus*, Er., Seager Hill under oak bark; *R. ferrugineus*, Pk., Stoke Edith, rare; *Monotoma spinicollis*, Aubé, West Malvern, one in a hotbed; *Enicmus testaceus*, Steph., Seager Hill (one); *Corticaria pubescens*, Gyll., Mathon, common in haystacks; *Cryptophagus validus*, Kr. There seems no doubt that the specimens recorded in "Ent. Mo. Mag.," 1909, p. 57, as *C. subfumatus*, Kr., are really *C. validus*, Kr. I have to thank Mr. Edw. Waterhouse for calling my attention to this. The species still occurs every winter in the apple-room in numbers. *Ephistemus globosus*, Waltl, a single example by the Monnow; *Triphyllus punctatus*, F., and *T. suturalis*, F., widely distributed; *Byrrhus fasciatus*, F., West Malvern in moss; *Aspidiphorus orbiculatus*, Gyll., Coddington, Stoke Edith, and Seager Hill; *Elmis parallelipedus*, Müll., Whitbourne, River Monnow, Kerne Bridge; *Parnus ernesti*, Ganglb., River Monnow, not common; *P. luridus*, Er., West Malvern and Holme Lacy, common; *Heterocerus marginatus*, F., widely distributed and common.

Reading:

November 2nd, 1911.

NOTES ON THE BRITISH SPECIES OF *LONGITARSUS*, LATR.(A GENUS OF *COLEOPTERA*).

BY J. R. LE B. TOMLIN, M.A., F.E.S., AND W. E. SHARP, F.E.S.

*(Continued from p. 248).*

*L. niger*, Koch, has had, since 1864 (Ent. Annual, p. 82) and Crotch's first catalogue, a place in our lists. Its occurrence in this country, however, certainly requires confirmation (see Fowler's Brit. Col. IV, 339), such specimens as we have been able to examine, standing over that name in various collections, being a large black form of *L. luridus*, Scop. The *L. niger* of Koch is a very different insect, elongate and distinctly acuminate, with testaceous-red unicolorous legs, and resembles closely a very large *L. anchusæ*.

SECT. II.—Species black, with distinct testaceous or reddish markings.

1. Elytra with apex distinctly reddish-yellow ..... *L. holsaticus*, L.
2. Elytra (in normal form) with four reddish-yellow spots—two at apex, one on each shoulder ..... *L. quadriguttatus*, Pont.
3. Elytra with a distinct reddish-yellow marginal band ..... *L. dorsalis*, F.

Their characteristic coloration and comparative invariability render the members of this group probably the most easily recognized in the genus.

*L. HOLSATICUS*, L. [Syst. Nat., Ed. x, 1758, p. 373]; Fab. [Ent. Syst. I, 2, p. 33. 101].

Oval, rather short, shining, black, with a large and distinct testaceous spot at apex of elytra. Antennæ stout and rather long, first three joints yellow, remainder black. Thorax transverse, convex, distinctly margined, very variable in punctuation, sometimes alutaceous with punctures scattered and few in number or almost obsolete, sometimes deeply and closely punctured with smooth interspaces. Elytra: punctuation confused, very coarse and distinct, showing but little variation; apical angles slightly rounded. Legs: fuscous, lighter or darker, posterior femora and usually posterior tibiæ also black, Underside black. Winged.

Food plant.—*Pedicularis palustris* (Bedel and Weise).

Locally common on lousewort, near Carlisle (F. H. Day). Foudras gives *Equisetum* as the food plant of this species, but Bedel, commenting, says that this author may have confused the insect with *Hippuriphila modeeri*.

Range.—General throughout Great Britain and Ireland.

No British varietal form is known, although the size and intensity of the apical spot varies considerably.

*L. QUADRIGUTTATUS*, Pontopp. [Nat. Dan. p. 203, 1765].

Syns. *quadripustulatus*, Fab. [Syst. Ent. p. 114].

*quadrimaculatus*, Koch [E. H. 2, p. 128].

*cynoGLOSSI*, Marsh. [Ent. Brit. p. 205].

Ovate, much narrower in ♂ than in ♀, shining, black, with (in type form) two testaceous red spots on each elytron—one at shoulder—and one on margin above the apex. There is a complete gradation from this fully spotted form to unicolorous black, some specimens having the humeral, some the apical, and others all four spots, almost or quite effaced. Antennæ: stout and long, considerably longer in ♂ than in ♀; first four joints yellow, remainder black. Thorax: transverse, very convex, distinctly bordered, varying to some extent, but not so greatly as in the preceding species, in character of punctuation, which is usually rather fine and remote, the intervals always alutaceous. Elytra: punctuation confused, fine and close, very different from that of *L. holsaticus*; apices slightly rounded. Legs: testaceous, with last two joints of tarsi fuscous, and posterior femora always black. Underside black. Winged.

Food plant.—*CynoGLOSSUM officinale*.

Rare in Britain, although abundant where it occurs. Apparently confined to the south of England. (Haliday's record from "near Belfast" appears to need confirmation).

Vars.—Weise has given the names "*binotatus*" and "*immaculatus*," respectively, to the two-spotted and unspotted form of this species, and also mentions a variety which he calls *vittatus*, but this form has not, so far, come under our observation in this country.

*L. DORSALIS*, F. [Syst. Eleuth. I. p. 465. 78]; Oliv. [Enc. méth. IV. p. 109. 31]; Steph. [Man. p. 298].

Oblong ovate, depressed. The most distinct and definite in colour of all our species. Head black; thorax reddish testaceous; elytra black, with a broad uniform testaceous marginal band from shoulder to apex. Antennæ rather short, stout, entirely black. Thorax transverse, bordered at sides, alutaceous, very finely and remotely punctured. Elytra also distinctly alutaceous, with punctuation confused, close and moderately strong; apices rounded. Legs usually entirely black, occasionally more or less pitehy or ferruginous. Underside black. Winged.

Food plants.—*Senecio jacobææ* and *S. vulgaris* (Fowler); *S. crucifolius* (Foudras); *S. crucifolius* and *S. vulgaris* (peut-être aussi sur l'*Erigeron canadense*) (Bedel).

Not common, and confined apparently to the southern half of England.

This appears to be one of the very few species of *Longitarsus* in which no variation is known.

(To be continued).

An unrecorded variety of *Bryaxis impressa*, Panz.—I recently had some specimens of a *Bryaxis* sent me by a correspondent in Cheshire for determination. He referred them doubtfully to *B. juncorum*, but at the same time he had noted the different puncturation of the thorax, &c. I went into the matter for him, and found them to be *B. impressa*. The difference was mainly that of colour, due perhaps to immaturity, the specimens differing from typical *impressa* in being *uniform reddish testaceous*: but as they puzzled my friend, myself, and several other experienced coleopterists, I venture to propose the varietal name *unicolor* for this form. I took it rather freely at Yarnton, Oxon, in August, 1908, but mixed it up with *B. juncorum* until a short time ago.

I cannot find any mention in our literature of a variety answering the above description, so I thought perhaps it would be advisable to bring it to the notice of other entomologists.—J. COLLINS, Oxford: *November, 1911.*

A note on *Liodes brunnea*, Sturm. When writing my note on *L. brunnea*, Sturm, I was quite aware of the discrepancy between the description of Sturm's insect and my description of *L. brunnea*, pointed out by Mr. Donisthorpe (*i.e.*, p. 256). But as I considered "strong" and "fine," as applied to the puncturation of the striae of the elytra, mere comparative terms, I did not feel justified in giving this form a new name, but preferred to follow such authorities as Rye and Fleischer. As to Mr. Donisthorpe's specimen of supposed *L. algerica*, Rye, I must again remind him that, when I sent four examples of exactly the same form from the same locality as his specimen to Dr. Fleischer for identification, he returned them as *L. dubia*!—NORMAN H. JOY, Bradfield, Berks: *Nov. 7th, 1911.*

*Gnorimus nobilis*, L., &c., in Epping Forest.—The capture of a specimen of this conspicuous and scarce Lamellicorn in Epping Forest may be of sufficient interest to place upon record. It was taken on the wing by my friend, Mr. Roland T. Smith, of Stoke Newington, in August, 1909. Another individual, presumably of the same species, was seen flying at the same time, but escaped.

A more recent capture of Mr. Smith's in the Forest, which he has just shown me, may, I think, also be of some interest; this is an example of *Epuræa angustula*, Er., which he found under beech bark on October 29th last. This species has, however, already been recorded from the Forest by Mr. C. J. C. Pool, who beat a specimen out of an oak bough in September, 1907 (*Ent. Rec.*, 1907, p. 297).—F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N.; *November 4th, 1911.*

Note on the Hylobiid genera *Dysmachus*, Kirsch, and *Irenarchus*, Pascoe.—The genera *Dysmachus*, Kirsch (1869), and *Irenarchus*, Pascoe (1881), were each based upon a single species of large size from Colombia, the former upon *D. plinthoides*, Kirsch, and the latter upon *Heilipus fossilis*, J. Thomson (1859). These insects are synonymous, and therefore Kirsch's generic name has priority; it is, however, preoccupied in *Diptera* (Loew, 1860) and cannot be used. The species, therefore, will have to bear the name *Irenarchus fossilis*. I am indebted to Dr. Heller for an authentically named example (♂) of Kirsch's *D. plinthoides*,



which agrees with Pascoe's *I. fossilis* (a ♀), except that the rostrum is shorter, as is often the case in the males of the allied forms.—G. C. CHAMPION, Horsell, Woking; November, 1911.

*New Scottish forms of Erebia ethiops, Esp., Salix semele, L., and Pararge megæra, L.*—In the Bulletin of the Entomological Society of France, 1911. (No. 15, Séance du 11 Octobre, 1911), pp. 311—314, Scottish forms of these well known species are described by M. Roger Vérité :—

“*E. ethiops*, Esp., race *caledonia*, nova.—Se distingue bien de la race alpine par sa taille toujours moindre (envergure : 35-42 mill., tandis que celle du type varie entre 40 et 45 mill.), par ses ailes bien plus étroites et allongées, avec les angles plus aigus et le contour du limbe plus droit ; la bande fauve est étroite et ne contient jamais plus de trois petits ocelles, tandis que chez la race alpine elle ne contient souvent quatre ou cinq, surtout chez la ♀ ; enfin les bandes du revers des postérieures sont assez fréquemment peu distinctes.

Habitat : La série typique de ma collection, que je décris, est de Galashiels (Écosse). Dans d'autres régions écossaises volent des formes de transition au type alpin.”

“*S. semele*, L., race *scota*, nova.—Taille très réduite (envergure : 45-50 mill., au lieu de 48-60 mill.) ; dessins fauves plutôt étendus, mais très pâles, presque jaunes ; revers des postérieures extrêmement obscurs et sans bande blanche transversale ; la marbrure est d'un noir profond et extrêmement abondante, ce qui donne à l'aile un aspect complètement différent de celui du type.

Habitat : Écosse septentrionale. Types : coll. Vérité.”

“*P. megæra*, L., race *caledonia*, nova.—Cette race diffère nettement de celles de toutes les autres régions par l'ampleur et l'intensité de tous les dessins noirs ; la bande marginale est très large, la bande androconienne du ♂ l'est aussi et la strie qui s'en détache extérieurement va se fondre avec la bande marginale ; la base des postérieures est entièrement noircie ; sur le revers des antérieures les stries noires sont très marquées ; sur les postérieures tout le dessin est très net et obscur, et le fond gris est richement sablé d'écaillés obscures, surtout vers le milieu entre les deux stries.

Habitat : Mes types sont de la côte septentrionale de l'Écosse.”—Eds.

*Gracilaria syringella*, F., mining in *Phillyrea media*, L.—The larvæ of this very common Tineid moth are usually abundant in our gardens, where they mine the leaves of lilac, making in them large brown blotches. The mines may also frequently be found in the leaves of privet and ash. Here, in our garden, at Chiswick, the larvæ occur commonly on all three plants, and in 1909 I noticed that they appeared to have attacked the leaves of an evergreen tree which I had previously taken for an evergreen oak. In the early summer of 1910, I found on the leaves of this tree several batches of eggs of *G. syringella*. Later on I gathered some mines, and in July bred eleven moths. Recently, through the kindness of the Director of the Royal Botanic Gardens, Kew, the evergreen in question has been identified as *Phillyrea media*, L. This is a

South European plant, and belongs to the *Oleaceæ*, to which Order the other three food-plants mentioned also belong. Though, doubtless, in Southern Europe, the species of *Phillyrea* are often attacked by the larvæ of this moth, I do not find any such observation recorded in any of the Continental faunal lists I possess.—ALFRED SICH, Corney House, Chiswick: November 10th, 1911.

*Notes on Oxford Hemiptera.*—Last August, at Cothill, near Abingdon, I was fortunate enough to take a nice lot of *Scolopostethus pictus*, Schill., in some rotting clover at the bottom of a stack. They had evidently bred in this refuse, as the larvæ were also present in numbers. The mature specimens were all of the usual macropterous form. During the same month I found a specimen of *Aphelocheirus æstivalis*, F., amongst *Potamogeton* dragged out of the River Cherwell. Although on several subsequent occasions I kept a sharp look out, I did not see any more. The Oxford records for this species, by the Rev. F. W. Hope and Prof. Westwood, are very old, one of them dating as far back as 1832, the other still further back. While with Commander Walker on Aug. 26th at Enslow Bridge, Oxon, I took a specimen of *Dryinus pilicornis*, M. et Rey, in some aquatic refuse on the canal bank, near its junction with the River Cherwell. Another noteworthy capture was that of two macropterous specimens of *Piezostethus cursitans*, Fall., under oak bark at Wytham Park on October 1st, 1911, with plenty of the much commoner brachypterous form.—J. COLLINS, Oxford: November, 1911.

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## Reviews.

THE GENITALIA OF THE GROUP NOCTUIDÆ OF THE LEPIDOPTERA OF THE BRITISH ISLANDS. By F. N. PIERCE, F.E.S. Liverpool: C. W. Duncan.

We regret that by an oversight no notice of this important work has heretofore appeared in our columns. For the sake of those readers to whom its fame has not in the meantime reached, we take the opportunity afforded by the promise of a companion volume on the *Geometridæ* from the same pen, briefly to call attention to it. Mr. Pierce is one of the pioneers in a branch of anatomical research, of which the full value and significance has only just come to be appreciated, and his book embodies the researches of 20 years. The author has wisely abstained from proposing a re-classification based on a single character, and has contented himself with describing and figuring the genitalia of the several species, and occasionally calling attention to the more obvious relationships or more glaring defects of our present groupings. In a word, Mr. Pierce provides the data, and leaves it to future systematists to turn them to account. The book should be in the hands of all serious workers.

OUR INSECT FRIENDS AND FOES. By P. MARTIN DUNCAN, F.R.P.S. London: Methuen & Co., Ltd., 36, Essex Street, Strand. 1911.

In this well got-up little book of 296 pages, the author gives an account in

simple and popular language of various aspects of insect life, especially of such as directly or indirectly affect the human race. In this relation, the last chapter, a brief but able sketch of the splendid series of modern researches that have established the direct connection of insects with the propagation of disease, and have furnished us with the means of successfully combating the most formidable maladies of tropical regions, will be read with special interest. The ravages of insects on our cultivated and useful plants, and the beneficial part played by others in reducing the numbers of these injurious forms, as well as the mutual interdependence of plants and insects, are discussed in pleasing style; and a *resumé* of the fascinating questions of Mimicry and Protective Resemblance in Insects forms, under the somewhat bizarre title of "Insect Actors," the subject of Chapter IV. The illustrations, from photographs by the author, are adequate and well executed, and the book as a whole can be confidently recommended to those who desire to know something of the economic side of Entomology. Several rather curious misprints in the scientific names of the insects alluded to in the work will, we hope, be corrected in a future edition.

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## Obituary.

*Samuel Hubbard Scudder.*—This distinguished American Entomologist died May 17th, 1911, aged 74 years. He was born at Boston, Mass., on April 13th, 1837, and lived at Cambridge, in the same State. He was educated at Williams College, and received honorary degrees from Harvard and the University of Pittsburgh. From 1864—1870 he was custodian of the Boston Society of Natural History, and from 1879—1882, Assistant Librarian at Harvard University. From 1886—1892 he held the office of Palaeontologist to the U.S. Geological Survey; in 1875 he served as General Secretary to the American Association for the Advancement of Science, and in 1894 was a Vice-President of that body. For several years he edited "Psyche" and "Science." His works on "Orthoptera and Diurnal Lepidoptera," the "Tertiary Insects of North America," &c., are well known to all Entomologists. In 1895 he was elected an Honorary Fellow of the Entomological Society of London. We glean most of the above particulars from the "Entomological News" for July, 1911, in which a full account of his very valuable contributions to our Science is to be found, accompanied by a portrait.

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## Societies.

YORKSHIRE NATURALISTS' UNION, Entomological Section.—The Annual Meetings (two) and Exhibition of Specimens of the Entomological Section of the Yorkshire Naturalists' Union were held in the Leeds Institute, Leeds, on October 28th last. MR. ARTHUR WHITAKER, President of the Section, in the Chair.

Reports on the work done during the year were read by the Secretaries of the Committees of the various Orders; the most interesting items in that on the *Lepidoptera*, being the occurrence, after several years absence, of a few *Xanthia aurago* among sycamores in the Skelmanthorpe (Huddersfield) district; the capture of several specimens of a unicolorous brown variety of *Hybernia aurantiaria*, the thorax only being of the usual yellow colour (a parallel form to var. *fuscula* of *Hybernia progenitaria*); and a black *Hybernia defoliaria* at Skelmanthorpe by Mr. B. Morley; *Acherontia atropos* at Barnsley and near Wakefield by Messrs. Whitaker and Hooper respectively; *Deilephila livornica* at Normanton by Mr. Lodge, who had also found larvæ of *Gortyna flavago* feeding freely in *Petasis* stems, a very unusual food-plant. Larvæ of *Dasyptilia jempfi* had been abundant in *Heracleum sphondylium* in the Huddersfield district, and the moths plentiful at lamps in many parts of the South-West Riding.

The report of the *Coleoptera* Committee, read by Dr. H. Corbett, stated that beetles had been scarce, both in numbers and species. Particularly was this the case with the Phytophaga. Notwithstanding this general scarcity, several interesting records had been made, and about a dozen species added to the county list. Among the more important of these were:—*Miscoderu arctica*, *Blethisa multipunctata*, *Anchomenu micans*, \**Bembidium bipunctatum*, *Bembidium lunatum*, \**Hydroporus longulus*, \**Hydrochus angustatus*, *Orypus fuscatus*, *Hypocyrtus laticusculus*, *Leptacinus formicetorum*, \**Stenus nitens*, *Homalium punctipenne*, \**Acrulia inflata*, \**Sitpha dispar*, *Gnathocnus nannetensis*, \**Læmophæus pusillus*, \**Psammæchus bipunctatus*, \**Monotoma spinicollis*, *Mycetophagus picus*, *Megatoma undata*, *Ennearthron cornutum*, \**Bruchus* sp?, \**Clytus arcuatus*, \**Saperda carcharias*, *Hedobia imperialis*, *Exomias araneiformis*, *Alophus triguttatus*, *Limobius dissimilis*, and *Myelophilus piniperda*. Those marked \* are additions to the Yorkshire list. The report on the *Hymenoptera*, read by Mr. W. Denison Roebuck, announced some twenty-eight additions to the county list, named specimens of all of which were exhibited. The report on *Neuroptera* and *Trichoptera* was read by Mr. J. Porritt. The exhibits included a fine range of variation in the two species, *Polia chi* and *Amphidasys betularia*, which by previous circular invitation had been made a special feature of the meeting, and to which many of the members had responded. Other exhibits were a specimen of the black form of *Acronycta menyanthidis* from the Penistone moors, near Huddersfield, a purple form of *Selenia lunaria* from Skelmanthorpe, and a series of the various forms of *Luperina guenei* from St. Anne's-on-Sea by Mr. H. Dyson. Mr. G. T. Porritt also exhibited a series of the forms of *Luperina guenei* from St. Anne's-on-Sea, several *Xanthia ocellaris* taken in the Thames valley in September last, and a very fine black and white form of *Boarmia repandata*, var. *conversaria*, from Fairbourne, near Barmouth. Mr. B. Morley, a beautiful and extraordinary variety of *Melanippe fluctuata*, captured at Skelmanthorpe. Mr. W. Hewett, a var. of *Zygena filipendule* from York. Mr. Hooper, a nice series of the black and white *Cidaria suffumata*, var. *porritii*, from Middlestown, near Wakefield. Mr. James Lee, a beautiful series of *Abraxas grossulariata*, including vars. *variegata*, *subviolacea*, and other fine forms, bred from Huddersfield larvæ this year. Mr. J. Wright also showed Huddersfield *grossulariata*, including var.

*hazleleighensis*; and Mr. J. W. Boulton brought a selection of the same species from Hull. Professor Garstang showed a case of many species in illustration of protective assimilation. Dr. H. H. Corbett, Dr. Fordham, Messrs. E. G. Bayford, M. L. Thompson, and Morse, all showed interesting *Coleoptera*, including many of the species mentioned in the report. Dr. Corbett and others also showed *Orthoptera*; and in *Neuroptera*, Mr. Porritt showed specimens of *Nemoura dubitans*, recently new to Britain, discovered by Colonel Nurse at West Stow, Suffolk.

Four papers were read at the evening meeting:—"On the variation of *Polia chi*," by Mr. B. Morley; "On *Amphidasys betularia* in connection with Melanism," by Mr. T. A. Lofthouse; "Notes on collecting *Hemiptera*," communicated by Mr. E. A. Butler; "The *Ichneumonidae*," communicated by Mr. Claude Morley.

The meetings were very largely attended, Entomologists from apparently almost every part of the county being present.—G. T. P.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:  
Thursday, October 12th, 1911.—Mr. W. J. KAYE, F.E.S., President, in the Chair.

Mr. H. R. Sweeting, M.A., of S. Woodford, was elected a member.

Mr. W. J. Kaye exhibited bred and captured series of *Lithosia deplana*, in which some of the former were much darker than usual. Mr. Barrett, three series of the same species, one taken many years ago, one in 1909, and one this year; the 1909 were generally darker in colour, but not so dark as Mr. Kaye's bred examples, although several specimens were without the yellow costa of the fore-wings; also a *Xylina furcifera (conformis)*, taken in 1904 in the East of England, and an example bred in S. Wales in 1876 by Evan John. The latter was var. *suffusa*, Tutt. Mr. Sich, specimens of *Gracilaria syringella* bred from *Phillyrea media*, a food-plant not hitherto recorded. Mr. R. Adkin, an example of *Tortrix podana*, bred on September 13th from a pupa taken in a shoot of *Euonymus* at Eastbourne, and reported that the Rev. W. Claxton had reared several specimens in mid-September. Mr. B. H. Smith, a specimen of *Sterrhia sacraria* ♀, taken by him recently near the Lizard, and a *Rumiccia phleas*, with right fore-wing ab. *schmidlii*. Mr. Dods, the huge cocoons of *Philosamia cecropia*, all of which had become dark brown in colour except one, which was pure white. Mr. Main said that the grub shown in the "Coquillo" nut, exhibited at last meeting was that of the large Bruchid, *Caryoborus nuctuorum*, a native of Brazil. Mr. Blair, specimens of *Boreus hiemalis* from Stanmore Common, in Essex. Mr. Blenkarn, many species of *Coleoptera* taken by him during the season, including *Clytus arcticus*, *Cicindela sylvatica*, *Dyliscus marginalis*, *Aromia moschata*, &c. Mr. Adkin and others gave their experiences of the season.

Thursday, October 26th, 1911.—The President in the Chair.

The Rev. George Wheeler, M.A., F.Z.S., F.E.S., and Mr. H. B. Wells were elected Members.

Mr. Sich exhibited *Lithocolletis hortella* and *L. sylbella*, and noted their specific characters and markings. Mr. Russell, a *Phryxus licornica* from Purley, three autumn-bred specimens of *Diacrisia sanio* (*russula*) from Grange-over-Sands, and recorded a *Bithys quercus*, taken on September 1st. Mr. R. Adkin, a series of *Eupithecia subfulcata*, bred from ova laid by a ♀ taken at Chiswick. Mr. Moore, a large *Cicada* taken on a window at Wanstead, and read notes on a Silphid beetle, from the Orange River Colony, which in life bore an abundant waxy secretion on its elytra. Mr. Sheldon, a long and fine series of *Colias nastes*, var. *werdandi*, taken by him in Lapland. Mr. Newman, a long and varied series of bred *Amorpha populi*, with three second-brood examples. Mr. Blair, living ♂ and ♀ specimens of the "stick" insect, known as *Dixippus morosus*, and imagines of the rare Neuropterous insect, *Boreus hyemalis*. Mr. Baumann, a fine melanic form of *Acidalia virgularia* from Lewisham. Mr. Curwen, series of *Colias pakeno*, *C. phicomone*, *C. hyale*, and *C. edusa* from the Swiss Alps, and also melanic forms of *Cidaria immanata*, *Hypsipetes sordidata*, and *Mania maura*. Mr. Blenkarn, examples of three species of *Coleoptera* recently recognised as British, viz., *Haliplus heydeni*, *H. innoculatus*, and *Gabrieus stipes*, from the Cotswolds, Lowestoft, and Beckenham respectively. Mr. Buekstone, a very remarkable *Brethsis selene* from Wanborough, with almost all the usual markings absent on the upperside.—HY. J. TURNER, *Hon. Secretary*.

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ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 18th, 1911.*—The Rev. F. D. MORICE, M.A., President, in the Chair.

The following gentlemen were elected Fellows of the Society:—Mr. Sidney Howard Cotton, 1A, Chesterfield Street, Mayfair; Captain J. J. Jacobs, R.E., 2, Southport Street, Gibraltar; Mr. Kumi Khuman, M.A., Assistant Entomologist to the Government of Mysore, Bangalore, South India; Dr. Ivan Clarkson Maclean, M.D., B.Sc., M.R.C.S., L.R.C.P., 28, Hill Street, Knightsbridge, S.W.; Mr. Frank Taylor, The Technological Museum, Sydney, New South Wales.

Dr. F. A. Dixey exhibited a pair of each of the following species—*Tachyris melania*, Fabr., *T. celestina* and *Catophaga ega*, Boisd., and remarked that Fabricius's type was preserved in the Banksian Cabinet, where it may still be seen, and that Mr. G. A. Waterhouse had now sent home specimens which are undoubtedly of the species described by Fabricius and represented by Donovan, which is not a *Catophaga* allied to *ega* or *paulina*, but a *Tachyris* belonging to the group which contains *T. celestina* and *T. nero*. Mr. W. G. Sheldon, a living larva of *Colias nastes*, var. *werdandi*, which he had bred from an ovum deposited by a ♀ captured at Abisko in Swedish Lapland; the natural food-plant is *Astragalus alpinus*, L., but in captivity the larva fed upon white clover. Mr. W. J. Lucas, two specimens of *Nemoptera bipennis*, Illig. (*lusitanica*, Leach), taken by Mr. A. H. Jones, one in the Cork woods at Almoraima, Spain, on May 5th, 1911, and the other at Lina, Gibraltar, on the 28th. Also a specimen of *Lertha barbara*, Klug, taken by Mr. H. Powell at Aflou, Oran, Algeria, on June 30th, 1911. Mr. W. J. Lucas also, a large specimen of *Sirex noctilio*, taken by himself at Leith Hill, Surrey, walking on the road, on September 8th, 1911. Mr. H. St.

J. Domisthorpe, a species of *Coleoptera* new to Britain, *Lestera luctuosa*, Fauvel, which he had taken in moss in a waterfall on the high ground in the Isle of Eigg, near Mull, on September 17th, 1911. Mr. H. M. Edelsten showed some bred specimens of *Erastris venustula*; the larvæ had fed readily on flowers of *Potentilla tormentilla*, and on garden forms of *Potentilla*, strawberry, and bramble blossoms, and later on lettuce leaves, which they seemed to prefer. They pupated below the surface of the ground in a strong cocoon. Mr. K. G. Blair, a ♂ and two ♀♀ of a "stick-insect" (? *Lonchodes* sp.), which is usually parthenogenetic. Mr. C. O. Waterhouse said he had bred three generations of this *Phasmid* and had had many hundreds of specimens, and he congratulated Mr. Blair on having the only male he had ever seen or heard of. Dr. K. Jordan, 46 forms of *Delias* from three mountain ranges of New Guinea. Whereas in other districts of the Oriental Region at the most seven or eight species (generally four to six) may be found in any locality, a surprising number are met with in the mountains of New Guinea from 3,000 to 4,000 feet upwards. In suitable localities of the Owen Stanley Range no less than 24 species have been obtained, of which 18 are confined to the higher altitudes. Brazilian Sphingids.—The Rev. A. Miles Moss, the following Sphingids from Para:—*Amphimæa walkeri*, *Isognathus excelsior*, *Grammodia caicus*, with pupa spun up in a leaf, *Hemeroplanes innuus*, *Epistor gorgon*, ♂ and ♀, *Pholus phorbis*, *Xylophanes nechus*, with chrysalis, and *X. cosmicus*, ♀, the first known specimen of this sex.

The President mentioned that the University of Cambridge had decided to appoint a Demonstrator in Medical Entomology.

Wednesday, November 1st, 1911.—The President in the Chair.

The President announced that the Council proposed Fr. Eric Wasmann, of Walkenburg, Holland, as Honorary Fellow in the place of the late Herr P. C. T. Snellen, of Rotterdam, and Prof. J. H. Comstock, of Cornell University, U.S.A., for the vacancy caused by the death of Mr. S. H. Seudder, of Cambridge, Massachusetts, both of whom were then elected.

The following gentlemen were elected Fellows of the Society—Messrs. T. J. Anderson, Teaninich, Craig Millar, Midlothian; Edward Bernard Ashby, 33, Park Road, Whitton, Middlesex; W. A. Lambourn, M.R.C.S., L.R.C.P., Oni Camp, Lagos, W. Africa; J. Jackson Mounsey, 24, Glencairn Crescent, Edinburgh.

Dr. Nicholson showed a specimen of *Aleochara discipennis*, Muls. and Rey, taken in the early part of this year from moss in a small wood at Alphington, Devon. This species was introduced in 1907 by Mr. Champion on the authority of specimens captured by the late Dr. Capron, and also by Commander Walker in the Chatham district, and it has been recently taken by Dr. Sharp in the New Forest. It appears to be rare on the Continent. Mr. J. R. le B. Tomlin exhibited a teratological specimen of the rare beetle *Triarthron macræli*, swept in the Wellington College district this summer. It has the two last joints of left antenna completely soldered together, making a two-jointed instead of a three-jointed club. Also a specimen of *Longitarsus melanocephalus* (?) taken by Mr. J. Collins at Oxford, with legs and tarsi

remarkably thickened. Mr. W. J. Lucas, five specimens, three ♂♂ and two ♀♀ of *Panorpa germanica*,\* taken by Col. Yerbury, four at Dingwall in May, and one at Lockinver in July. One ♂ is practically immaculate, and the other two nearly so; the ♀ from Dingwall is sparsely spotted, while the one from Lockinver is more nearly normal. Five normal specimens from Surrey and Hants were shown for comparison. Mr. C. J. Gahan, a living specimen of *Aspidomorpha silacea*, Boh., an African species of *Cassididae*, which had been sent by Mr. G. St. John Mildmay from Nyali in British East Africa on October 7th, reaching London on October 28th. Dr. K. Jordan announced that the *Polytenidae*, which are parasitic on bats in the tropics, are viviparous like the parasitic Orthopteron *Hemimerus*. The young are born at a very advanced stage, but yet differ considerably from the adult. Two of the forms (*spasma* and *talpa*) described as distinct species, and lately placed in two different genera, are immature and adult examples of the same species. Mr. Harwood, two specimens of *Micrurula melanocephala* taken near Bishop's Stortford by sweeping in the evening, which he believed to be var. *brunnea*, Heer. Also two specimens of *Ocyrops cyaneus* taken by Mr. W. H. Harwood at Colchester, one in May and the other in June of this year, the first specimens taken in the district for nineteen years. Also a species of *Coccinella* taken in a case of Tasmanian apples at Colchester. Mr. H. Eltringham, specimens of African *Acræas*, to show that wide differences of colour and pattern may occur in a single species, and conversely, that certain species which can scarcely be distinguished by their outward appearance are nevertheless very distinct, as shown by the structure of the male armature. Several new species and forms were also shown, including *A. lofua*, Eltr., ♂ and ♀, *A. grosvenori*, Eltr., ♂, *A. aureola*, Eltr., ♂, *A. ella*, Eltr., ♂, *A. cinerea* subsp. *albata*, Eltr., ♂, *A. periphanes* f. *acritoides*, Eltr., ♂, and *A. astrigera* f. *brunnea*, Eltr., ♂ and ♀. Dr. Jordan remarked on the extreme variability of the genus and its allies, geographically, individually, and even in the characters of the genitalia. Mr. Bethune-Baker remarked on the unreliability of the genitalia in certain *Lycenidae*. The President stated that the ♂ genitalia were, as a rule, reliable in the *Aculeata*, but in the *Tenthredinidae* the ♂ genitalia were quite useless for specific determination, though the ♀s afford excellent characters. The Hon. Walter Rothschild remarked on the identity of the ♂ genitalia in certain distinct species of *Macroglossinæ*. Com. Walker read a paper on "The Effect of Temperature on Animal (especially Insect) Life," by A. G. Butler, Ph.D., F.L.S. The following papers were also communicated—"Parthenogenesis in Worker Ants, with special reference to two colonies of *Lasius niger*, Linn.," by W. C. Crawley, B.A.; A Monograph of the genus *Acræa*," by H. Eltringham, M.A., F.Z.S.—G. WHEELER, *Hon. Sec.*

\* This is variety *borealis*, and is a common Scotch form.—G. T. P.



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